2014 Annual Performance Report

Submitted: 01/29/2015 05:30 PM
U.S. Department of Education
Title III - Part F - HSI STEM and Articulation Programs

ED 524B Cover Sheet

1. PR/Award #: P031C110026
2. Grantee NCES ID#: 110486
3. Project Title: Developing New Engineering Degree Options for Underserved Hispanic Students in the Southern San Joaquin Valley
4. Grantee Name: California State University, Bakersfield
5. Grantee Address: 9001 Stockdale Highway Bakersfield, CA 93311
6. Project Director Name: Jorge Talamantes Title: Project Director
   Ph #: 661-654-2335 Fax #:
   Email Address: JTALAMANTES@CSUB.EDU

Reporting Period Information

7. Reporting Period: From: 10/01/2013 To: 09/30/2014

Budget Expenditures (To be completed by your Business Office.)

8. Budget Expenditures:

<table>
<thead>
<tr>
<th></th>
<th>Federal Grant Funds</th>
<th>Non-Federal Funds</th>
</tr>
</thead>
<tbody>
<tr>
<td>Previous Budget Period</td>
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<td>$0.00</td>
</tr>
<tr>
<td>Current Budget Period</td>
<td>$765,709.52</td>
<td>$0.00</td>
</tr>
<tr>
<td>Entire Budget Period</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Indirect Cost Information (To be completed by your Business Office.)

9. Indirect Costs
   a. Are you claiming indirect costs under this grant? No
   b. If yes, do you have an Indirect Cost Rate Agreement approved by the Federal Government? No
   c. If yes, provide the following information:
      Period Covered by the Indirect Cost Rate Agreement: From: To:
      Approving Federal agency: ED Other (Please specify):
      Type of Rate: (For Final Performance Reports only)

   d. For Restricted Rate Programs (check one) -- Are you using a restricted indirect cost rate that:
      Is included in your approved Indirect Cost Rate Agreement? YES
      Complies with 34 CFR 76.564(c)(2)?

Human Subjects (Annual Institutional Review Board (IRB) Certification)

10. Is the annual certification of Institutional Review Board (IRB) approval attached? N/A

Performance Measures Status and Certification

11. Performance Measures Status
   a. Are complete data on performance measures for the current budget period included in the Project Status Chart? Yes
   b. If no, when will the data be available and submitted to the Department?

12. Authorized Representative Name: Horace Mitchell
    Date: 01/29/2015
    Phone: 661-654-2241
    E-mail: hmitchell@csub.edu
Executive Summary

We are very happy to report that during the third year of our project we have made great progress towards meeting our goals. During this period, we continued to set up the infrastructure required to establish our engineering degree. We are experiencing a very large effect with respect to Objective 1 of our project. We will see some effect with respect to Objective 2 at the end of the present period, but will not be able to see the full effect of our efforts for a few years. Our program leading to the B. S. in Engineering Sciences started in Fall 2012. Thus, our first four-year cohort will graduate in Spring quarter 2016, and our first six-year cohort will graduate in Spring semester 2018. (CSUB will change from quarters to semester starting in Fall 2016.)

We are very proud of the fact that our Engineering Sciences program is proving to be very popular with students and the community we serve. Our industry partners often comment on how much this program goes towards addressing the needs of our underserved community. They are very appreciative and very supportive both financially and in terms of volunteering their time to come and talk to our students, as well as facilitating their employee’s availability to contribute by providing expertise. Our enrollments could not be better. In fact, main-taking adequate capacity to deliver an engineering education is our most pressing challenge. But we have been quite successful in convincing the university’s administration that maintaining engineering instructional capacity is a top priority. To illustrate, we present here both the original enrollment estimates we presented the university for AY 2014-15, and our actual Fall 2014 numbers:


Evidently, our outreach efforts are being much more successful than we hoped. We are getting both more students from our local high schools, and from our community colleges. Program growth has been extremely rapid and somewhat uneven across the freshman-senior years. We are also attracting students who already have a bachelor’s degree (e.g. in Business Administration, Psychology, etc.) but want to pursue an engineering career. We now have 16 students taking the Senior Project course. We expect most, if not all, to be awarded their B. S. this coming Spring 2015. This will be our second graduating cohort.

We are also delighted to report that we graduated our first group of students with a B. S. in Engineering Sciences last spring quarter. The-se were four students who either transferred in or were at CSUB already as part of our pre-engineering program. Thus, they were all ready to start taking junior courses in Fall 2012. All of these graduates now have full-time jobs locally in the petroleum industry. Three of these alumni are Hispanic and the other is white.

We have focused our efforts on the following tasks:

1. Engineering Facilities. We converted one of our engineering rooms into a Fab Lab. The facility has advanced equipment (such as 3D printers, laser cutters, etc.) that will allow our students to pursue sophisticated design ideas. The additional equipment did not come at the expense of the grant. Instead, we leveraged our resources to secure financial support from local industry, and ad-ditional technical expertise from the Fab Lab Foundation. The new Fab Lab is now occupying space we formerly used as a tutoring/training and discussion area. We are grateful to the university for having provided a replacement. We are calling the new available space the “Physics and Engineering Tutoring Room”, and we are in the process of furnishing it using grant funds to encourage student interactions with their peers, tutors, and faculty. Thus, this tutoring room will support our persistence and retention efforts.

In addition to the Physics and Engineering Tutoring Room, we set up a space (in one of the science buildings) for projects in Bi- o-systems and Agricultural Engineering. This space lacked the IT infrastructure as well as furniture, computers, and tools needed for that type of projects. We used grant funds to provide these resources to our students under the supervision of Dr. Ioannis Ampatzidis. He is one of our new tenure-track faculty in engineering.

2. Laboratory equipment. We spent a large portion of our grant funds this year on equipment for our new lab courses. Indeed, we spent a lot of time and effort choosing, ordering and installing the right equipment for courses in Materials Engineering, Electric Circuits, Fluid Mechanics, Environmental Engineering, Petroleum Engineering, and Senior Engineering Laboratory. In addition, we purchased equipment and materials for the Freshman and Senior Design projects. In addition, we bought and installed fume hoods for two of our engineering laboratories (with prior approval for this expenditure from our Program Officer).

3. Engineering Curriculum. As mentioned above, the university will transition from quarters to semesters in Fall 2016. The con-version to semesters will facilitate and streamline student transfer from Community Colleges, thus enhancing our service to those students. The faculty spent much of the academic year redesigning the curriculum so that it continues to meet the needs of our stakeholders under semesters, while eliminating any potential negative impact on students straddling the quarter and semester systems. Furthermore, we engaged the university in many discussions pertaining to General Education so that the semester curriculum satisfies those requirements as well as the 120-unit cap established by the CSU to engineering programs. At the same time, we continued to be mindful of the requirements that the curriculum will need to satisfy when we apply for ABET accreditation.

4. Undergraduate research. Our engineering faculty engaged 14 students in work they are planning to publish. Some of that research has already been presented at local competitions and conferences.

5. ABET Preparations. We engaged the services of an external (ABET) consultant to advise us on issues such as curriculum as we move towards semesters, facilities, faculty strengths and weaknesses, space, institutional support, assessment practices, etc. We are happy to report that whereas she had very valuable suggestions for improvements, her overall evaluation was very positive, and we are well on our way to satisfy ABET when the time comes to apply for their accreditation.

6. Community Connections. We have established a steering committee made up of local industry and community college stake-holders to set up the parameters (mission, scope, membership, etc.) for a permanent Industry Advisory Board. The steering committee has been meeting every month. This group will help us continue to be relevant to our community and to our students. In order to maintain synergies and connections with local industry and to better serve the needs of our students, we have hired a number of professional to come and teach on a part-time basis a range of skills such as Petroleum Engineering Fundamentals, Water and Soils Resource Management, Engineering Graphics, Machine Design, Engineering Economics, and Quality Manage-ment.

7. Outreach. We have continued our student outreach efforts. Indeed, we collaborate with Bakersfield College (our main CC feed-er institution, on whose Advisory Board Dr. Jorge Talamantes serves). Also, we participated in NSME Open House and Engineering Day. These events bring hundreds of local high school students to campus. We continue, we continue to visit local High Schools to promote the programs.

8. Student Chapters of Professional Organizations. In order to better serve our students, and for the purpose of persistence and retention, we have encouraged the establishment of student chapters of three professional organizations: Society of Women En-gineers (SWE) and Society of Hispanic Professional Engineers (SHPE) both of which have Dr. Luis Cabrales as faculty mentor, and Society of Petroleum Engineers (SPE) with Dr. Dayanand Saini as faculty mentor.

9. New Faculty Recruitment. We conducted a search for a full-time lecturer in engineering. The search yielded thirty-three appli-cations from around the globe. We hired Dr. Karim Salehpoor, who has a M.S in Petroleum Engineering, a Ph. D. in Mechanical Engineering, and many years of teaching experience. He started in Summer 2014 consulting for the department on Petroleum Engineering instructional laboratory purchases. He joined the faculty in the Fall quarter. We also conducted a search for a full-time lecturer in physics so we can keep up with the demand from engineering students. The search yielded one hundred and ten applications from around the world. We hired Dr. Krishna Prasai, who has a Ph. D. in Experimental Low-Temperature Physics, and many years of teaching experience. He started in Summer 2014 consulting for the department on Electrical Circuits instructional laboratory purchases. He joined the faculty in the Fall quarter. The additional ca-pacity in physics will help tremendously to alleviate that particular bottleneck-course problem.

10. Engineering Calculus. We continued our collaboration with the Department of Mathematics to offer a new calculus series for our new students. These new courses differ from the traditional calculus sequence in that they are heavily focused on engineering appli-cations. Furthermore, the new calculus sequence has additional problem-solving sessions to help clarify the material.
Section A: Performance Objectives

Project Objective: To triple the number of engineering degree pathway students at CSUB, from 98 in Spring 2011 to at least 294, with Hispanic students equitably represented relative to total enrollment.

Check if this is a status update for the previous budget period.

<table>
<thead>
<tr>
<th>Performance Measure</th>
<th>Measure Type</th>
<th>Quantitative Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.a To triple the number of engineering degree pathway students at CSUB, from 98 in Spring 2011 to at least 294.</td>
<td>GPRA</td>
<td>Target</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Raw Number</td>
</tr>
<tr>
<td></td>
<td></td>
<td>294</td>
</tr>
<tr>
<td>1.b Hispanic students will be equitably represented relative to total enrollment.</td>
<td>GPRA</td>
<td>Target</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Raw Number</td>
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<td></td>
<td></td>
<td>3982 / 7544</td>
</tr>
</tbody>
</table>

Explanation of Progress (Include qualitative data and data collection information)

The Engineering Sciences program started operating in Fall 2012, and it is thus presently in its third year. Our student outreach efforts have already yielded very encouraging results. The baseline is 98 pre-engineering majors in Spring 2011. (There were no Engineering Sciences majors then.) So with 317 students in Fall 2014 (11 Pre-engineering and 306 Engineering Sciences), we are making significant progress towards our original target of at least 294. Most of our Engineering Sciences students are freshmen, with smaller sophomore, junior and senior classes. We therefore anticipate the pace of increase of this indicator to continue improving after this year, as we continue to reach out to the community, and our present-day (relatively small) upper-level classes start to graduate.

In 1.b above, we show figures for the university as a whole on the Target column. We present figures for our engineering program in the Actual Performance Data column.

In year 1 we had 179 students. Of these, 85 were Hispanic (i.e. 47%). In year 2, our total enrollment was 251 with 116 being Hispanic (i.e. 46%). We are reporting now year 3, with 317 total students, with 161 Hispanics (i.e. 51%). We are pleased to see that the number of Hispanic students in Pre-Engineering and Engineering Sciences is increasing, and very much in line with the university as a whole.
Project Objective: To report a 40% six-year graduation rate in CSUB’s engineering degree program, with the degree completion equity gap 100% eliminated.

Check if this is a status update for the previous budget period.

<table>
<thead>
<tr>
<th>Performance Measure</th>
<th>Measure Type</th>
<th>Quantitative Data</th>
</tr>
</thead>
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<td>2.a To report a 40% six-year graduation rate in CSUB’s Engineering Sciences degree program.</td>
<td>GPRA</td>
<td>Target</td>
</tr>
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<td>999 / 999</td>
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</table>

2.b There will be 0% equity gap between Hispanic and white students in the completion of the Engineering Sciences degree.

<table>
<thead>
<tr>
<th>Performance Measure</th>
<th>Measure Type</th>
<th>Quantitative Data</th>
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</thead>
<tbody>
<tr>
<td>2.b</td>
<td>GPRA</td>
<td>Target</td>
</tr>
<tr>
<td></td>
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<td>Raw Number</td>
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<td></td>
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<td>0 / 100</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0 / 999</td>
</tr>
</tbody>
</table>

Explanation of Progress (Include qualitative data and data collection information)

The CSUB six-year STEM graduation rate for first-time full-time Hispanic students is 6.7%, and 24.1% for white students (2002-2008 data). Objective 2 consists of eliminating this 17.4% gap and attaining a six-year graduation rate of 40%. Clearly, we cannot report graduation rates this early in our program since we have not yet started to graduate students that have gone through the entire program. Since our program officially started in Fall 2012, we were not able to have outreach efforts until AY 2012-13, with significant numbers of entering freshmen only occurring in Fall 2013. Indeed, we had 7 entering freshmen in Fall 2012 and 73 in Fall 2013. Thus, our present sophomore class (students entering the program in Fall 2013) will be the first one to go through our entire program in significant numbers, and they will start to graduate in Spring semester 2017. Given our huge out-reach success for more advanced students, however, meaningful actual data for this performance measure (2.b) will be reported at year five of this project, when these students begin to graduate. Until then, we will continue to monitor the graduation rates of all students, including Hispanics.
Section B: Budget Information
During the third twelve months after the launch of the project (October 2013 through September 2014) we focused primarily on improving our educational laboratories, augmenting facilities to form student cohorts and to engage in design projects, encouraging the development of organizations to support the professional development of our students, on our quarter-to-semester curriculum development (while staying within ABET, General Education, and 120-unit cap constraints), connecting with local industry and community college partners, and hiring new personnel to provide additional expertise and augment instructional capacity to reduce bottlenecks.

We started year 3 with $866,277.00 plus $14,737.41 carryover from year 2, and expended $765,709.52. This leaves $115,304.18 unspent. However, we purchased equipment for $36K just before the grant year ended. But due to the normal administrative delays, this is not reflected in this grant year’s figures. Therefore, the actual rollover is roughly $115K minus $36K, or $79K.

Section C: Additional Information
N/A
2014 Annual Performance Report

Submitted:
U.S. Department of Education
Title III - Part F - HSI STEM and Articulation Programs

ED 524B Cover Sheet

1. PR/Award #: P031C110161
2. Grantee NCES ID#: 441937
3. Project Title: Project ACCESO: Achieving a Cooperative College Education through STEM Opportunities
4. Grantee Name: California State University Channel Islands – Research & Sponsored Programs Academic Affairs
5. Grantee Address: One University Drive Camarillo, CA 93012
6. Project Director Name: Philip Hampton Title: Project Director
   Ph #: 805-437-8869 Fax #: (805) 437-8895
   Email Address: PHILIP.HAMPTON@CSUCILEDU

Reporting Period Information
7. Reporting Period: From: 10/01/2013 To: 09/30/2014

Budget Expenditures (To be completed by your Business Office.)
8. Budget Expenditures:

<table>
<thead>
<tr>
<th></th>
<th>Federal Grant Funds</th>
<th>Non-Federal Funds (Match/Cost Share)</th>
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<td>a. Previous Budget Period</td>
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<td>b. Current Budget Period</td>
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<tr>
<td>c. Entire Budget Period (For Final Performance Reports only)</td>
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Indirect Cost Information (To be completed by your Business Office.)

9. Indirect Costs
   a. Are you claiming indirect costs under this grant? No
   b. If yes, do you have an Indirect Cost Rate Agreement approved by the Federal Government?
   c. If yes, provide the following information:
      Period Covered by the Indirect Cost Rate Agreement: From: To:
      Approving Federal agency: ED Other (Please specify):
      Type of Rate: (For Final Performance Reports only)
   d. For Restricted Rate Programs (check one) -- Are you using a restricted indirect cost rate that:
      Is included in your approved Indirect Cost Rate Agreement?
      Complies with 34 CFR 76.566(c)(2)?

Human Subjects (Annual Institutional Review Board (IRB) Certification)
10. Is the annual certification of Institutional Review Board (IRB) approval attached? N/A

Performance Measures Status and Certification
11. Performance Measures Status
    a. Are complete data on performance measures for the current budget period included in the Project Status Chart? Yes
    b. If no, when will the data be available and submitted to the Department?

12. Authorized Representative Name: Missy Jardigan
    Date: 02/01/2015
    Phone: 8054373282
    E-mail: missy.jardigan@csuci.edu
Executive Summary

Project ACCESO’s goals are (1) to increase the number of target population (defined as Hispanic and low-income) students who are succeeding in and graduating from STEM majors at CI, and (2) to increase the number of Hispanic and low-income students interested in pursuing a bachelor’s degree in STEM. To achieve these goals, Project ACCESO provides student success services, engages students in instructional research opportunities, develops the infrastructure at CI for target population students to pursue STEM majors, and provides K-12 students with hands-on STEM experiences through outreach activities designed to increase the pipeline of future college STEM students.

The major focuses of Project ACCESO during this grant year have been (1) expanding programming to achieve these goals, (2) examining approaches to institutionalizing Project ACCESO programming so that it is sustained after the final year of this grant, (3) experimenting with some new approaches to helping students to succeed at CI, and (4) collecting data on the impact of ACCESO’s programming.

Significant progress has been made in Grant Year 3 with regard to Project ACCESO increasing the capacity for providing Student Success Services, engaging students in STEM Research experiences, and performing STEM Outreach to the community. From the time that Project ACCESO was funded in Fall 2011 to the Fall 2013 semester of this APR, the CI campus has grown 24% and STEM enrollments have increased 37%. This growth occurred with essentially no growth in the non-target population and the entirety of the growth being from Project ACCESO’s target population (Hispanic OR Low-Income students). CI’s STEM majors have become increasingly diverse; Hispanic students now represent 43% of all STEM students on the CI campus, up dramatically from Hispanic students representing 29% of our STEM student population in Fall 2010. Project ACCESO’s target population has also seen a dramatic increase with 63% of our students being within this target population compared to 47% in Fall 2010.

The following section will outline our accomplishments during grant year 3:

** Expanded Project ACCESO’s Student Success Services Capacity and Examined the Impact of Services: STEM Tutoring and Peer-Led Team Learning

The growth in our target population has coincided with a substantial increase in demand from STEM students for Student Success Services provided by Project ACCESO. STEM Tutoring and Peer-Led Team Learning services are in high and constant demand. Student visits to the STEM Center for STEM tutoring hours have quadrupled since Spring 2012 when the STEM Center was created through the funding of Project ACCESO. This facility is in near constant use six days a week by students who are studying, collaborating with other students, interacting with faculty, or engaging in ACCESO’s Student Success services. CI’s Peer-Led Team Learning (PLTL) is a student success approach that complements STEM tutoring by engaging students in collaborative group work as opposed to the one-on-one or small groups involved in STEM tutoring. PLTL has been fully built-out with workshops being offered for the majority of the bottleneck gateway STEM classes. In a pilot study, we found that students who participate in PLTL workshops exhibit a higher course pass rate in the course associated with the workshop than students who do not participate in PLTL.

** Developed and Expanded the Summer Scholars Institute

The Summer Scholars Institute (SSI) provides incoming freshmen with three weeks of math-intensive programming and interdisciplinary STEM experiences that prepares them for their freshman year. During Grant Year 3, we shortened the SSI to three weeks resulting in greater attendance in the program. Future plans for this program include increasing the math readiness component of the program and recruiting STEM students who were placed in remedial math courses to participate in SSI. Students who participate in the Summer Scholars Institute have a high persistence rate on campus with over 86% of the summer 2012 and 2013 SSI students being still enrolled at CI and maintaining a GPA of 2.0 or better. Many of the students who participated in the program started in a math class one step higher than they had originally planned as a result of participating in the SSI.

** Increased Capacity for Students to Engage in STEM Research

Student interest and engagement in STEM research has grown substantially since Project ACCESO has been funded, ACCESO’s Summer Research Institute, Academic Research, and Embedded Research Programs are, in part, responsible for an increased awareness by students in participating in summer research. The SRI grew by 50% in Summer 2014 from the previous summer, engaging a total of 45 students from CI and our partner community colleges in a paid, three-week research experience. The number of applicants for the SRI and academic research far exceed the number of positions available through ACCESO. Community college students also benefit from increased exposure to research through our embedded research collaboration with the community colleges that creates authentic research experiences in gateway STEM classes.

** Implemented STEM Academic Success Coaching

This grant year, a new approach to student success was launched through the hiring of a STEM Academic Success Coach. This individual meets one-on-one with STEM students and helps them plan for their future, develop time-management skills, and examine how to best use office hours/interactions with their instructors.

** Implemented Early Assessment in Gateway STEM Classes

The Early Assessment Project was implemented in Spring 2014. STEM faculty were provided with a stipend to develop and administer a graded assessment and provide performance feedback to students within the first three weeks of the semester. The goal is to identify “at-risk” STEM students early in the semester so that these students can be connected with academic support services.

** Launched the Great Inventors STEM Outreach Program

ACCESO launched a new STEM Outreach program during Grant Year 3. This new Great Inventors Program engages high school students with Computer Assisted Drawing (CAD) and 3D printing. This program, run in collaboration with the Naval Air Warfare Center Weapons Division Point Mugu, introduces students to the engineering design process and cultivates 21st century critical thinking skills.

** Expanded and Developed an Institutional Commitment to the Science Carnival

The annual Science Carnival, a hands-on science event that is free to the community, has become a signature event for the campus, attracting nearly 2000 K-8 students and their parents. The campus has committed to this event and several CI divisions have committed to helping ACCESO institutionalize the event by helping ACCESO to staff it and implement this major STEM Outreach event.

** Increased CI’s Commitment to Institutionalize Project ACCESO

During Grant Year 3, Project ACCESO staff worked with campus administrators to increase the campus’ awareness of the research needs for institutionalizing Project ACCESO programming. A timeline and budget for institutionalizing grant staff and programs were presented at various levels at the campus, including the President’s Cabinet.

** Secured External Funding for Increased STEM Excellence

Largely as a result of Project ACCESO’s successes, CI has been awarded four new grants totaling $1,073,472 that directly relate to Project ACCESO programming and initiatives started under this grant. One of these grants, from the CSU Chancellor’s Office, leverages the Summer Scholars Institute and expands its scope to include STEM students who are placed in remedial math (intermediate algebra). Recently, CI was awarded a $75K grant from Amgen Foundation to work with the Ventura County P-20 Council to launch a STEM regional network (VC STEM) in Ventura County during 2015. VC STEM will integrate efforts across the county with the goal of supporting our pre-school to graduate school students (P-20) in attaining STEM excellence. The other two grants emerged as a result of ACCESO’s STEM Outreach at the elementary and middle school level.

In conclusion, Project ACCESO continues to make excellent progress in expanding and evaluating its programs directed at developing CI’s capacity to support Hispanic and low-income students. We look forward to continuing our programs and institutionalizing them in subsequent years of our grant.
Section A: Performance Objectives

Project Objective: 1. Develop and implement best practices interventions for helping at-risk Hispanic and low-income students to succeed in gateway STEM classes. Reduce the gap in student success for these students 5% annually from the baseline levels.

Check if this is a status update for the previous budget period.

<table>
<thead>
<tr>
<th>Performance Measure</th>
<th>Measure Type</th>
<th>Quantitative Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>The 6.3% gap in course pass rates between target (Hispanic and low-income) and non-target students will decrease 5% per annum from the initial baseline. This would lower the gap approximately 0.3% per annum in absolute terms, leading to gap targets of 6.0%, 5.7%, 5.4%, and 5.1% for grant years 2, 3, 4, and 5, respectively.</td>
<td>Project</td>
<td>Target Raw Number %</td>
</tr>
<tr>
<td>The gap in semester grade point averages (GPA) between targeted (Hispanic OR low-income; 2.714 GPA) and non-targeted students (2.848 GPA) will decrease 5% per annum from the initial baseline of 0.134 GPA. This would lower the gap approximately 0.007 GPA per annum in absolute terms, leading to GPA gap targets of 0.127, 0.120, 0.113, and 0.106 for grant years 2, 3, 4, and 5, respectively.</td>
<td>Project</td>
<td>Target Raw Number %</td>
</tr>
</tbody>
</table>

Explanation of Progress (Include qualitative data and data collection information)

Data Collection Information

We were not sure how to enter data for this performance measure since the metrics are not in terms of whole numbers. When our targets were entered into the target and performance data raw number cells, the values were converted into “zero” if they were less than one and they were rounded in the case of decimal values. In addition, the changes in the measures were not in whole numbers. An error message was generated when a decimal denominator was entered into the target and actual performance measures calculation. As a result of this problem, we left the cells for calculation of ratios for the target and performance data empty. The data that should be reflected in these cells is provided below:

Measure 1 Calculation
Target: Raw number = 0.6% change and target ratio = 100% (0.6 divided by 0.6 x 100)
Actual performance data: Raw number = -0.1% change and actual performance data ratio = -17% (-0.1% divided by 0.6% x 100)

Measure 2 Calculation
Target: Raw number = 0.014 change and target ratio = 100% (0.014 divided by 0.014 x 100)
Actual performance data: Raw number = -0.062 change and actual performance data ratio = -442% (-0.062 divided by 0.014 x 100)

It was necessary to change the wording of these measures and the targets. Ethnicity data used in our Year 1 and 2 APR reports under-estimated the Hispanic population on the CSU Channel Islands campus because the campus only started implementing the Integrated Postsecondary Education Data System (IPEDS) ethnicity codes in the Fall 2014 semester. The data included in this measure and the entire Year 3 APR are correct and reflect these new IPEDS definitions. The net effect of this change in the definition of a Hispanic student was that our baseline and prior grant year APR data needed to be updated to the actual values.

For the purposes of these measures we define gateway STEM courses as a subset of courses with a STEM prefix (BIOL, CHEM, COMP, ESRM, GEOIL, MATH, or PHYS) that are taken by freshmen, sophomores, or incoming transfer students at the 100, 200, or 300 level and are a required course in one or more STEM majors. We define passing a course as a student having received a grade of C or better; this grade is used since several STEM majors require a grade of "C" or better for students to meet the course prerequisite for a subsequent course. The target population of Project ACCESO is defined as any student who either declared that they were Hispanic according to IPEDS ethnicity codes OR were low-income as evidenced by their being Pell grant eligible during a given semester.

Measure 1 Discussion.
Measure 1 relates to the course pass rates for students taking gateway STEM courses. Using the IPEDS ethnicity codes, we obtained the baseline data for Measure 1 for course pass rates in gateway STEM classes, as shown in Table 1.

Table 1. Course Pass Rates in Gateway STEM Classes During the Baseline Academic Years (2009-2010 and 2010-2011)
Data format for Table 1: Population: number of students with a grade of C or better (total number of students in the population), percentage of students with a C or better.
All STEM Students: 2586 (3307), 78.2%
Target Students (Hispanic OR Low-Income): 1171 (1564), 74.9%
Non-Target Students: 1415 (1743), 81.2%
Table 1 indicates that Project ACCESO’s target population has a 6.3% (81.2% - 74.9%) lower pass rate than the non-target population. A 5% decrease in this gap annually would mean a decrease of 0.3% (5% of 6.3% = 0.3%) each year. We have updated Measure 1, as shown below, to reflect the new targets based on IPEDS ethnicity code corrected data.

Updated Measure 1: The 6.3% gap in course pass rates between target (Hispanic and low-income) and non-target students will decrease 5% per annum from the initial baseline. This would lower the gap approximately 0.3% per annum in absolute terms, leading to gap targets of 6.0%, 5.7%, 5.4%, and 5.1% for grant years 2, 3, 4, and 5, respectively.

Data related to Measure 1 for this reporting period as well as the Year 2 reporting period are shown below in Table 2.

Table 2. Course Pass Rates in Gateway STEM Classes During Grant Year 2 (Academic Year 2012-2013) and Grant Year 3 (Academic Year 2013-2014)
Data format for Table 2: Grant Year; Population: number of students with a grade of C or better (total number of students in the population), percentage of students with a C or better.
Year 2, All STEM Students: 1828 (2350), 77.8%
Year 2, Target Students (Hispanic OR Low-Income): 989 (1331), 74.3%
Year 2, Non-Target Students: 839 (1019), 82.3%

Year 3, All STEM Students: 2017 (2624), 76.9%
Year 3, Target Students (Hispanic OR Low-Income): 1224 (1644), 74.5%
Year 3, Non-Target Students: 793 (980), 89.9%

Based on the data in Table 2, the Grant Year 2 gap was 8.0% (82.3% - 74.3% = 8.0%) and in Grant Year 3 the gap was 6.4% (80.9% - 74.5% = 6.4%). The targets for these two grant years were gaps of 6.0% and 5.7%. Neither of these target gaps were achieved.

For the reporting purposes, the change in the gap from the baseline of 6.3% was -0.1% (6.3% - 6.4% = -0.1% change) for Grant Year 3; in other words, the gap in course pass rates is somewhat wider in Grant Year 3 compared with the baseline year by 0.1%. A narrowing of the gap by 0.6% was the target (0.3% per year x 2 years = 0.6%). The values of -0.1% for Grant Year 3 Actual Performance Data and 0.6% for Grant Year 3 Target Data were used in our reporting on Measure 1 for this objective, as indicated in the Measure #1 Calculation at the beginning of the Data Collection Information section.

Measure 2 Discussion.

Measure 2 relates to the grade point averages for STEM majors. Using the IPEDS ethnicity codes, we obtained the baseline data for Measure 2 for grade point averages in gateway STEM classes, as shown in Table 3.

Table 3. Grade Point Averages in Gateway STEM Courses During the Baseline Academic Years (2009-2010 and 2010-2011)
Data format for Table 3= Population: Grade Point Average.
All STEM Students: 2.785
Target Students (Hispanic OR Low-Income): 2.714
Non-Target Students: 2.848

Table 3 indicates that Project ACCESO’s target population has a 0.134 (2.848 - 2.714 = 0.134) lower GPA in gateway STEM courses than the non-target population. A 5% decrease in this gap annually would mean a decrease of 0.007 (5% of 0.134 = 0.007) each year. We have updated Measure 2, as shown below, to reflect the new targets based on IPEDS ethnicity code corrected data.

Updated Measure 2: The gap in semester grade point averages (GPA) between targeted (Hispanic OR low-income; 2.714 GPA) and non-targeted students (2.848 GPA) will decrease 5% per annum from the initial baseline of 0.134 GPA. This would lower the gap approximately 0.007 GPA per annum in absolute terms, leading to GPA gap targets of 0.127, 0.120, 0.113, and 0.106 for grant years 2, 3, 4, and 5, respectively.

Data related to Measure 2 for this reporting period as well as the Year 2 reporting period are shown below in Table 4.

Table 4. Grade Point Averages in Gateway STEM Courses During Grant Year 2 (Academic Year 2012-2013) and Grant Year 3 (Academic Year 2013-2014)
Data format for Table 4= Grant Year, Population: Grade Point Average.
Year 2, All STEM Students: 2.731
Year 2, Target Students (Hispanic OR Low-Income): 2.643
Year 2, Non-Target Students: 2.846
Year 3, All STEM Students: 2.649
Year 3, Target Students (Hispanic OR Low-Income): 2.576
Year 3, Non-Target Students: 2.772

Based on the data in Table 4, the Grant Year 2 gap in GPA was 0.203 (2.846 - 2.643 = 0.203) and the Grant Year 3 gap in GPA was 0.196 (2.772 - 2.576 = 0.196). The targets for these two grant years were GPA gaps of 0.127 and 0.120, respectively. Neither of these target gaps were achieved.

For the reporting purposes, the change in the GPA gap from the baseline of 0.134 was -0.062 (0.134 - 0.196 = -0.062 GPA unit change) for Grant Year 3; in other words, the gap is significantly wider in Grant Year 3 compared with the baseline year by 0.062 GPA units. A narrowing of the GPA gap by 0.014 GPA units was the target (0.007 GPA units per year x 2 years = 0.014 GPA units). The values of -0.062 GPA units for Grant Year 3 Actual Performance Data and 0.014 GPA unit Target Data were used in our reporting on Measure 2 for this objective, as indicated in the Measure #2 Calculation at the beginning of the Data Collection Information section.

Additional Information about this objective as well as Qualitative Data are provided as a separate document attached to this APR.
Project Objective: 2. Develop and implement best practices interventions for retaining at-risk Hispanic and low-income students in STEM majors at CI. Increase their retention rate by 5% annually.

Check if this is a status update for the previous budget period.

<table>
<thead>
<tr>
<th>Performance Measure</th>
<th>Measure Type</th>
<th>Quantitative Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>The persistence rate of target population (Hispanic OR low-income) STEM students will increase by 1.6% annually over the baseline two-year retention rate of 82%. This would amount to retention rates of 83.3%, 84.9%, 86.5%, and 88.1% for grant years 2 – 5, respectively.</td>
<td>Project</td>
<td>Target</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Raw Number</td>
</tr>
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<td>3</td>
</tr>
<tr>
<td>The size of the baseline gap in yearly persistence rates between the target population (Hispanic OR low-income) vs. non-target population STEM students will decrease by 5% annually. This leads to an annual decrease of 0.5% in the 9.2% gap between target and non-target populations resulting in target gaps of 8.7%, 8.2%, 7.7%, and 7.2% for grant years 2 – 5, respectively.</td>
<td>Project</td>
<td>Target</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1</td>
</tr>
</tbody>
</table>

Explanation of Progress (Include qualitative data and data collection information)

Data Collection Information

As mentioned in our discussion of Objective 1, we were not sure how to enter data for the performance measure since the metrics are not in terms of whole numbers. When our data was entered into the target and performance data raw number cells, the values were converted into “zero” if they were less than one and they were rounded in the case of decimal values. In addition, the changes in the measures were not in whole numbers. The data that should be reflected in these cells is provided below:

Measure 1
Target: Raw number = 3.2% change and target ratio = 100% (3.2% divided by 3.2% x 100)
Actual performance data: Raw number = 1.2% and actual performance data ratio = 38% (1.2% divided by 3.2% x 100)

Measure 2
Target: Raw number = 1.0% change and target ratio = 100% (1.0% divided by 1.0% x 100)
Actual performance data: Raw number = 0.3% change and actual performance data ratio = -30% (-0.3% divided by 1.0% x 100)

In Objective 1, we indicated that the campus has now fully implemented the 2009 IPEDS ethnicity definitions and is in the process of retroactively applying these definitions to current data projects. The Year 1 and Year 2 APRs were based on the pre-IPEDS ethnicity codes. The current data in this APR are correct and reflect these new IPEDS definitions. As a result of this change, the data now more accurately reflects the true Hispanic AND Low-Income target population on campus.

Measure 1 Discussion

Measure 1 relates to the persistence of target population STEM students at CSU Channel Islands. Table 1 displays the baseline persistence rates for various subpopulations on the CI campus. We define persistence as a student having returned to take courses the following Fall semester or having graduated from CI. In other words, the Fall 2013 persistence data reflects the percentage of students who returned from Fall 2012 to take classes in Fall 2013 or graduated at the end of Fall 2012 or Spring 2013.

Table 1: Persistence Data for Various Subpopulations Declaring STEM as a Major for Baseline Years (Fall 2009 and Fall 2010)

Data Format in Table 1 = Subpopulation: 1 Year Persistence

All Students: 86.3%
Target Population (Hispanic OR Low-Income): 81.7%
Non-Target Population: 90.9%

According to Measure 1, the goal is to increase the persistence rate for the target population by 2% annually. Since the baseline persistence rate was 81.7% for the target population, this translates into a 1.6% increase (2% of 82% = 1.6%) in persistence rates each year of the grant and goals of 83.3%, 84.9%, 86.5%, and 88.1% for grant years 2 – 5, respectively. Measure 1 has been updated to reflect these corrected targets that resulted from the new IPEDS ethnicity data.

UPDATED MEASURE 1: The persistence rate of target population (Hispanic OR low-income) STEM students will increase by 1.6% annually over the baseline two-year retention rate of 82%. This would amount to retention rates of 83.3%, 84.9%, 86.5%, and 88.1% for grant years 2 – 5, respectively.

The actual performance data for Grant Years 2 and 3 using the new IPEDS data are provided below in Table 2.

Table 2: Persistence Data for Various Subpopulations Declaring STEM as a Major for Grant Years 2 and 3 (Fall 2012 and Fall 2013)

Data Format in Table 1 = Grant Year, Subpopulation: 1 Year Persistence

Grant Year 2, All Students: 80.2%
Grant Year 2, Target Population (Hispanic OR Low-Income): 76.1%
Grant Year 2, Non-Target Population: 85.3%
Grant Year 3, All Students: 86.8%
Grant Year 3, Target Population (Hispanic OR Low-Income): 82.9%
Grant Year 3, Non-Target Population: 92.4%

Since the target persistence rates were 83.3% and 84.9% for grant Years 2 and 3, respectively, we did not achieve these two targets.

The persistence rates for both the target and non-target populations are quite variable from year to year with persistence rates between 85% to 92% for the non-target population and 76% to 86% for the target population. No consistent trends were seen in the persistence rates as the campus has grown over the past five years (two years of baseline and three years of Project ACCESO).

The actual performance data for this measure show that the persistence rate increased by 1.2% (82.9% - 81.7%) over the baseline persistence rate of 81.7% in Grant Year 2.
Year 3. The target increase during this same period was 3.2% (2 x 1.6% = 3.2%). The values of 1.2% for Grant Year 3 Actual Performance Data and 3.2% for Grant Year 3 Target Data were used in our reporting on Measure 1 for this objective, as indicated in the Measure #1 Calculation at the beginning of the Data Collection Information section. The target was rounded in the calculation when we entered this information in the data boxes for this objective.

Measure 2 Discussion.

Measure 2 relates to the gap in persistence rates between target and non-target students at CSU Channel Islands. As discussed above, Table 1 displays persistence data for the baseline years of the grant (Fall 2010 and Fall 2011) and Table 2 displays persistence data for Grant Years 2 (Fall 2012) and 3 (Fall 2013). Based on this data, the baseline persistence gap between target and non-target students was 9.2% (90.9% - 81.7% = 9.2%). We proposed to reduce the size of this baseline gap by 5% annually which means the gap would decrease by 0.5% (9.2% x 5% = 0.46%) annually leading to target gaps of 8.7%, 8.2%, 7.7%, and 7.2% for grant years 2 – 5, respectively. As a result of the implementation of the IPEDS ethnicity codes, we have had to update Measure 2 to reflect the actual gap in persistence rates and to update the targets.

UPDATED MEASURE 2: The size of the baseline gap in yearly persistence rates between the target population (Hispanic OR low-income) vs. non-target population STEM students will decrease by 5% annually. This leads to an annual decrease of 0.5% in the 9.2% gap between target and non-target populations resulting in target gaps of 8.7%, 8.2%, 7.7%, and 7.2% for grant years 2 – 5, respectively.

The calculated persistence gaps in Grant Years 2 and 3 were 9.2% (85.3% - 76.1% = 9.2%) and 9.5% (92.4% - 82.9% = 9.5%), respectively. Unfortunately, we did not achieve the target persistence gaps for Grant Years 2 or 3 of 8.7% and 8.2%, respectively. For the reporting purposes, the change in the gap from the baseline of 9.2% was -0.3% (9.2% - 9.5% = -0.3% change) for Grant Year 3; in other words, the gap in persistence rates is somewhat wider in Grant Year 3 compared with the baseline year by 0.3%. A narrowing of the gap by 1.0% was the target (0.5% per year x 2 years = 1.0%). The values of -0.3% for Grant Year 3 Actual Performance Data and 1.0% for Grant Year 3 Target Data were used in our reporting on Measure 1 for this objective, as indicated in the Measure #1 Calculation at the beginning of the Data Collection Information section.

The magnitude of the gap in persistence rates for target and non-target students remained unchanged between the baseline years and Grant Years 2 and 3 despite the fact that actual persistence rates changed significantly for the two subpopulations between these periods.

Objective 2 Discussion

This objective relates to the persistence of STEM students at CSU Channel Islands (CI) where persistence is defined as a student continuing to be enrolled from one Fall semester to another or having graduated at the end of the Fall or subsequent Spring semesters prior to the reporting Fall semester. Table 3 displays the baseline and the three Grant Year persistence rates for various subpopulations. We note that one of our baseline years (Fall 2010) had significantly higher persistence rates and little variation between subpopulations compared with the other baseline year (Fall 2009). Fall 2013 persistence rates were similarly clustered together and significantly higher than the previous two grant years (Fall 2011 and Fall 2012). The persistence rates vary significantly between years which complicates the interpretation of progress toward the measures for this objective. No consistent trends were seen in the data.

Table 3: Persistence Data for Various Subpopulations Declaring STEM as a Major during Baseline Years (Fall 2009 and Fall 2010) and Grant Years 1, 2 and 3 (Fall 2011, Fall 2012 and Fall 2013)

| Data Format in Table 1 = BASELINE/GRANT YEAR, Subpopulation: 1 Year Persistence |
|-----------------|-----------------|-----------------|-----------------|-----------------|
| BASELINE (Fall 2009) | All Students: 84.0% | Not Target: 90.3% | Target (Hispanic OR Low Income): 77.9% | Hispanic: 67.1% |
| Low Income: 85.5% | Hispanic AND Low Income: 72.3% | Hispanic Female: 65.8% | Hispanic Male: 68.4% |
| BASELINE (Fall 2010) | All Students: 88.5% | Not Target: 91.6% | Target (Hispanic OR Low Income): 85.6% | Hispanic: 85.6% |
| Low Income: 85.5% | Hispanic AND Low Income: 85.3% | Hispanic Female: 83.0% | Hispanic Male: 88.3% |
| GRANT YEAR 1 (Fall 2011) | All Students: 83.0% | Not Target: 86.4% | Target (Hispanic OR Low Income): 79.8% | Hispanic: 76.0% |
| Low Income: 77.9% | Hispanic AND Low Income: 69.3% | Hispanic Female: 75.6% | Hispanic Male: 76.5% |
| GRANT YEAR 2 (Fall 2012) | All Students: 80.2% | Not Target: 85.3% | Target (Hispanic OR Low Income): 76.1% | Hispanic: 75.6% |
| Low Income: 77.6% | Hispanic AND Low Income: 78.5% | Hispanic Female: 77.8% | Hispanic Male: 72.8% |
| GRANT YEAR 3 (Fall 2013) | All Students: 86.8% | Not Target: 92.4% | Target (Hispanic OR Low Income): 82.9% | Hispanic: 82.6% |
| Low Income: 82.6% |
Hispanic AND Low Income: 81.9%
Hispanic Female: 83.5%
Hispanic Male: 81.2%

Qualitative Data

The activities directed at this measure are identical to those discussed under Objective 1. In addition to our STEM Tutoring and Peer-Led Team Learning student success activities, two new programs were implemented during grant year 3: Early Assessment and STEM Academic Success Coaching. Qualitative data related to all of these activities were reported in the discussion of Objective 1.
Project Objective: 3. Augment existing CI outreach programs for regional high schools and community colleges that will result in an increase of 10% over baseline numbers of Hispanic and low-income students reached by these existing programs with an emphasis on STEM disciplines.

Check if this is a status update for the previous budget period.

<table>
<thead>
<tr>
<th>Performance Measure</th>
<th>Measure Type</th>
<th>Quantitative Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>STEM informational sessions will be provided to 50 high school students through campus outreach events during grant Yr 2. The number of STEM students provided with STEM informational sessions will increase annually by 10% over Yr 2 baseline figures. Note: Target is for Grant Year 2.</td>
<td>Project</td>
<td>Target Raw Number Ratio % Actual Performance Raw Number Ratio %</td>
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<td>100 / 100</td>
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</table>

Provide STEM informational sessions to 50 community college students through campus outreach events during grant year 2. The number of STEM students provided with STEM informational sessions will increase annually by 10% annually over year 2 baseline figures. Note: Target is for Grant Year 2.

<table>
<thead>
<tr>
<th>Measure Type</th>
<th>Quantitative Data</th>
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<tr>
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<td>Project</td>
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<tr>
<td>Raw Number</td>
<td>Ratio %</td>
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<td>100 / 100 / 100</td>
<td>100 / 100 / 100</td>
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</table>

Explanation of Progress (Include qualitative data and data collection information)

Data Collection Information

This measure relates to providing STEM outreach to high school and community college students with the goal of encouraging them to pursue STEM as a major in college. Data was collected using sign-in sheets at events/meetings with student participants. The Year 3 targets are provided below:

Measure #1:
Year 2 Baseline Target: 50 high school students
Year 3 Target: 100 high school students
Actual Year 2: 120 high school students
Actual Year 3: 741 high school students

Measure #2:
Year 2 Baseline Target: 50 community college students
Year 3 Target: 100 community college students
Actual Year 2: 77 community college students
Actual Year 3: 146 community college students

Measure 1 Discussion:
During Year 3, a total of 340 high school students have been engaged in STEM informational sessions. The specific programming is outlined under the qualitative section. Measure 1 had a Year 3 target of 100 high school students receiving STEM informational sessions; this target was exceeded.

Measure 2 Discussion:
During the first two years of Project ACCESO, CSU Channel Islands (CI) students were hired as Transfer Mentors and these individuals traveled to the campuses of our three community college partners (Ventura College, Oxnard College, and Santa Barbara City College). In addition to providing workshops, these transfer mentors met with individual students to talk with them about STEM careers and transfer to a CSU or UC campus in a STEM major. Limited interest from the community college students caused us to shift our focus to high school students. The only major programming that provides STEM information to community college students has been our presentations regarding the Summer Research Institute (SRI). A total of 154 community college students at the three community college campuses participated in workshops that were provided by Project ACCESO. Measure 2 had a Year 3 target of 100 community college students receiving STEM informational sessions; this target was exceeded.

Qualitative Data

Three Project ACCESO activities have been implemented to address this objective.

1. STEM Outreach to High School Students
2. STEM Outreach to Community College Students
3. STEM Course Articulation with Community Colleges

These activities are discussed in detail below.

1. STEM Outreach to High School Students

** University Prep Academy
Project ACCESO participated in the University Prep Academy, held on November 9, 2013 for high school students and their parents, and for community college students. Project ACCESO worked in collaboration with CI’s University Outreach and Project ISLAS at CI (Title V grant). Project ACCESO provided a workshop to the students about STEM Preparation and STEM Pathways. Enrollment for this event included 171 high school students, 4 community college students, 49 parents, and 11 chaperones.

** College: Making It Happen
Project ACCESO provided a STEM Preparation for Student Success workshop at College: Making It Happen, held on the CI campus in collaboration with Oxnard Union High School District. This event was held on March 1, 2014. Project ACCESO provided a workshop to high school students and their parents about STEM pathways. The total number of participants in the workshop was 96 adults and 144 high school students.

** Future Leaders of America, STEM Panel
Project ACCESO collaborated with Oxnard Union High School District and the Future Leaders of America in Oxnard and participated in a STEM student panel, Four Project ACCESO student assistants participated in the panel and provided information to 25 high school students about STEM pathways from the college student...
**STEM Expo**

Project ACCESO sponsored and hosted the 5th Annual STEM Expo: Exploration of Science, Technology, Engineering, and Math (STEM) Careers, held at the Ventura County Fairgrounds on March 19, 2014, in conjunction with the Ventura County Science Fair. The STEM Expo shows middle school and high school students attending the Science Fair how their interest in STEM can lead to career opportunities with regional companies and organizations. A total of 23 local STEM companies/organizations had interactive booths where they engaged 763 students (362 middle school and 401 high school students) who attended the STEM Expo. CI STEM faculty highlighted the adventurous and fun facets of learning STEM. The feedback from educators and students regarding the STEM Expo was extremely positive.

**Great Inventors Program**

In Spring 2014, Project ACCESO launched a new high school outreach program called the Great Inventors program. This program cultivates 21st century critical thinking skills and was developed and implemented in partnership with Naval Air Warfam Center Weapons Division Point Mugu (NAVAIR). NAVAIR recruited and paid for an engineer to help develop and implement this program which focused on engineering concepts, computer-assisted drawing (CAD), and 3D printing. Undergraduate CI STEM students were hired as student assistants to provide a “near-peer” mentoring of the high school students. The program was launched in Hueneme High School's MESA Program which provided the space, students, and teacher support to ensure the success of the program. As part of the program, the CI student assistants participated in a panel discussion about STEM pathways. A total of 20 high school students were engaged in the eight week program.

The high school students were assigned to teams and chose to build either a catapult or a safe egg drop mechanism through 3D printing. Students were limited to a particular budget for materials and went through several iterations before the final competitions. At the completion of the program, students were guided through a self-reflection. Many students confirmed that they felt a sense of surprise and accomplishment in finishing their projects and identified themselves as being more capable STEM students who could be college-bound.

This program will be implemented again in Spring 2015 at another high school.

2. STEM Outreach to Community College Students

One of the major activities directed at Community College students during the first two years of the grant was the Transfer Mentor program. The goal of the Transfer Mentor program was to increase student interest in STEM as a subject in college and to encourage students to consider STEM as a future career with the overall goal of increasing the number of Hispanic and low-income students who are transferring to a STEM major at a four-year university. This program placed CI student assistants at each of the three regional community colleges (Oxnard College, Ventura College, and Santa Barbara City College). We found that there was very low interest by community college students in meeting with the transfer mentors and, as a result, we discontinued this program in Year 3 of the grant and turned our focus and energies on STEM Outreach to high school students. Three programs were continued in grant year 3 related to Measure 2 of this objective; these programs are described below.

**STEM Preparation for Student Success, Community College Workshop**

Project ACCESO collaborated with Project ASCENSION, Oxnard College's Department of Education Hispanic-Serving Institution STEM grant, to schedule and present a workshop for community college students entitled, "STEM Preparation for Student Success," This workshop was held at Oxnard College on April 24, 2014; however, only two students came to the workshop.

**Project ACCESO Summer Research Institute (SRI) Informational Sessions**

Each of the past three years, Project ACCESO has run a summer research program that engages community college and CI students in the three week summer research program. A total of 45 students were engaged in the 2014 SRI of which 22 were from Oxnard College, Ventura College, and Santa Barbara City College. Project ACCESO provided workshops and presentations in select STEM classes at the regional community colleges where students could learn about the SRI and research in STEM at CI with 149 students attending these workshops/presentations.

**Discover CI Presentations and Tabling**

Both admitted freshmen and transfer students are invited each year to attend an event called Discover CI (April 11 and 12, 2014) which allows these future students to visit the campus and explore its academic programs and resources. Project ACCESO provided a total of four informational sessions regarding student success services and STEM outreach programming offered by Project ACCESO, and student assistant positions that are available through the grant. A separate table was provided for STEM Academic Success Coaching at this event.

3. STEM Course Articulation with Community Colleges

A major barrier to transfer students is coursework not transferring to a four-year institution and meeting requirements for a major. At the same time that Project ACCESO was funded, the State of California passed legislation (Senate Bill 1440) that mandated the creation of transfer associates (AA) degrees at the community colleges with a minimum of 18 units of courses in the AA degree being accepted by California State University campuses for transfer into a major. Project ACCESO planned and facilitated a series of STEM Summits in years 1 and 2 of the grant that were designed to examine both lower- and upper-division course requirements for STEM majors at CSU Channel Islands and compare these requirements with courses offered at the community colleges. These face-to-face meetings between community college and CI faculty not only resulted in 19 new course-to-course articulations, they also built relationships between faculty that continue to this day. We anticipate two new articulations of Computer Science courses in Fall 2015.
Project Objective: Enhance the STEM pipeline to increase the number of Hispanic and low-income students applying for admission to CI by 5% annually and the overall number of Hispanic and low-income students STEM majors at CI by 5% annually.

Check if this is a status update for the previous budget period.

<table>
<thead>
<tr>
<th>Performance Measure</th>
<th>Measure Type</th>
<th>Quantitative Data</th>
</tr>
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<tbody>
<tr>
<td>There will be a 5% annual increase over baseline in the target population (Hispanic OR low-income students) enrolled in STEM majors at CI from a baseline of 47.2% Hispanic OR low-income students in the Fall 2010 semester. This would increase the number of target population students enrolled in STEM majors by 2.4% annually resulting in targets of 49.8%, 52.0%, 54.4%, and 56.8% for grant years 2 – 5, respectively.</td>
<td>Project</td>
<td>Target: Raw Number / 66 / 66 Actual Performance Data: Raw Number / 666 / 66</td>
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<td>Raw Number / Target Ratio / %</td>
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</tbody>
</table>

There will be a 5% annual increase over baseline in the target population (Hispanic OR low-income applicants) applying to enroll in STEM majors at CI from a baseline of 667 students. This would increase the number of target (Hispanic OR low-income) students applying to CI in a STEM major annually by 33 students resulting in targets of 700, 733, 766, and 798 target student applications in Grant Years 2 – 5, respectively.

| Measure Calculation                                                                 |
|----------------------------------------------------------------------------------|--------------------------------------------------------|
| Measure 1 relates to the percentages of students from our target population (Hispanic OR low-income) who are enrolled in STEM majors compared with the non-target population, and Measure 2 relates to numbers of target population students admitted to CSU Channel Islands (CI). |

| Measure Calculations                                                                 |
|----------------------------------------------------------------------------------|--------------------------------------------------------|
| Measure 1 Calculations: Target: Raw number = 4.8% change and target ratio = 100% (4.8% divided by 4.8% x 100) Actual performance data: Raw number = 15.5% change and actual performance data ratio = 323% increase (15.5% divided by 4.8% x 100) |

| Measure Calculations                                                                 |
|----------------------------------------------------------------------------------|--------------------------------------------------------|
| Measure 2 Calculations: Target: Raw number = 66 change and target ratio = 100% (66 divided by 66 x 100) Actual performance data: Raw number = 666 change and actual performance data ratio = 1039% increase (666 divided by 66 x 100) |

As mentioned in Objective 1, ethnicity data used in our Year 1 and 2 APR reports under-estimated the Hispanic population on the CSU Channel Islands campus because the campus only started implementing the Integrated Postsecondary Education Data System (IPEDS) ethnicity codes in the Fall 2014 semester. The data included in this objective and the entire Year 3 APR are correct and reflect these new IPEDS definitions. The net effect of this change in the definition of a Hispanic student was that our baseline and prior grant year APR data needed to be updated to the actual values.

| Measure 1 Discussion                                                                 |
|----------------------------------------------------------------------------------|--------------------------------------------------------|
| For the purposes of this measure, we define a STEM major as a student who is majoring in Applied Physics, Biology, Chemistry, Computer Science, Environmental Science and Resource Management, Information Technology, or Mathematics. STEM major enrollments are determined only for the Fall semester of each year. Table 1 shows data for the number of new and continuing students enrolled in STEM majors at CI for the Baseline Years (Fall 2009 and 2010) and Grant Years 1 – 3 (Fall 2011, Fall 2012, and Fall 2013) of Project ACCESS. |

| Table 1. New and Continuing Students Enrolled in STEM Majors for Fall 2010 – Fall 2013. Data format for Table 1= SEMESTER/ YEAR, Population: Number of STEM Majors from that Subpopulation (Percent of the Total STEM Student Population) |
|----------------------------------------------------------------------------------|--------------------------------------------------------|
| FALL 2010 (BASELINE)                                                           | All STEM Students: 1743                               |
| Not Target: 920 (52.8%)                                                       |                                                      |
| Target (Hispanic OR Low Income): 823 (47.2%)                                   |                                                      |
| Hispanic: 507 (29.1%)                                                         |                                                      |
| Low Income: 622 (35.7%)                                                       |                                                      |
| Hispanic AND Low Income: 306 (17.6%)                                          |                                                      |
| Hispanic Female: 327 (18.8%)                                                  |                                                      |
| Hispanic Male: 180 (10.3%)                                                    |                                                      |
| FALL 2011 (GRANT YEAR 1)                                                       | All STEM Students: 1913                               |
| Not Target: 935 (48.9%)                                                       |                                                      |
| Target (Hispanic OR Low Income): 978 (51.1%)                                   |                                                      |
| Hispanic: 662 (34.8%)                                                         |                                                      |
| Low Income: 724 (37.8%)                                                       |                                                      |
| Hispanic AND Low Income: 408 (21.3%)                                          |                                                      |
| Hispanic Female: 462 (24.2%)                                                  |                                                      |
| Hispanic Male: 200 (10.5%)                                                    |                                                      |
| FALL 2012 (GRANT YEAR 2)                                                       | All STEM Students: 2350                               |
| Not Target: 1019 (43.4%)                                                      |                                                      |
| Target (Hispanic OR Low Income): 1331 (56.6%)                                  |                                                      |
| Hispanic: 867 (36.9%)                                                         |                                                      |
| Low Income: 993 (42.3%)                                                       |                                                      |
Hispanic AND Low Income: 529 (22.5%)
Hispanic Female: 627 (26.7%)
Hispanic Male: 240 (10.2%)

FALL 2013 (GRANT YEAR 3)
All STEM Students: 2624
Not Target: 980 (37.3%)
Target (Hispanic OR Low Income): 1644 (62.7%)
Hispanic: 1140 (43.4%)
Low Income: 1239 (47.2%)
Hispanic AND Low Income: 735 (28.0%)
Hispanic Female: 751 (28.6%)
Hispanic Male: 389 (14.8%)

We proposed an annual increase of 5% from the baseline percentage of target population students as part of this measure. In our baseline year (Fall 2010), Hispanic AND Low-Income students represented 47.2% of the students enrolled in STEM majors. A 5% increase represents an increase of 2.4% in the percentage of target students leading to targets of 49.6%, 52.0%, 54.4%, and 56.8% for grant years 2 – 5, respectively. The actual percentages in Grant Years 2 and 3 were 56.6% and 62.7%. Measure 1 has been updated to reflect this new baseline and new targets resulting from the implementation of the IPEDS ethnicity codes.

UPDATED MEASURE #1: There will be a 5% annual increase over baseline in the target population (Hispanic OR low-income students) enrolled in STEM majors at CI from a baseline of 47.2% Hispanic OR low-income students in the Fall 2010 semester. This would increase the number of target population students enrolled in STEM majors by 2.4% annually resulting in targets of 49.6%, 52.0%, 54.4%, and 56.8% for grant years 2 – 5, respectively.

For the reporting purposes, the change in the gap from the baseline of 47.2% was a 9.4% increase (56.6% - 47.2% = 9.4%) for Grant Year 2 and a 15.5% increase (62.7% - 47.2% = 15.5%) for Grant Year 3. The target increases were 2.4% and 4.8% (2 x 2.4% = 4.8%) in Grant Years 2 and 3. We met and exceeded our targets for this measure in both Grant Years 2 and 3. The values of 15.5% for Grant Year 3 Actual Performance Data and 4.8% for Grant Year 3 Target Data were used in our reporting on Measure 1 for this objective, as indicated in the Measure #1 Calculation at the beginning of the Data Collection Information section.

Since Fall 2010, the non-target enrollment in STEM majors at CI has remained essentially unchanged (920 in Fall 2010 and 980 in Fall 2013, a 6.5% increase) while our target population has doubled (823 in Fall 2010 and 1644 in Fall 2013). This doubling has resulted from both a doubling of the Hispanic student population and the low-income student population. Until Fall 2013, the bulk of the increase in Hispanic student enrollment came from increasing numbers of Hispanic Female students on campus. Hispanic Male student enrollments increased substantially in Fall 2013; however, Hispanic Female students still outnumber Hispanic Male students by nearly a 2:1 ratio.

Measure 2 Discussion:

This measure relates to the number of target (Hispanic OR Low-Income) students applying to enroll in STEM majors at CI. Table 2 displays the total number of freshmen and transfer student applications from various subpopulations between Fall 2009 and Fall 2013.

Table 1. Freshmen and Transfer Student Applications for STEM Majors between Fall 2010 - Fall 2013.
Data format for Table 1 = SEMESTER/ YEAR, Population: Number of STEM Majors from that Subpopulation (Percent of the Total STEM Applications)

FALL 2010 (BASELINE)
All STEM Students: 1390
Not Target: 723 (52.0%)
Target (Hispanic OR Low Income): 667 (48.0%)
Hispanic: 520 (37.4%)
Low Income: 337 (24.2%)
Hispanic AND Low Income: 190 (13.7%)
Hispanic Female: 293 (21.1%)
Hispanic Male: 227 (16.3%)

FALL 2011 (GRANT YEAR 1)
All STEM Students: 1573
Not Target: 758 (48.2%)
Target (Hispanic OR Low Income): 815 (51.8%)
Hispanic: 664 (42.2%)
Low Income: 415 (26.4%)
Hispanic AND Low Income: 264 (16.6%)
Hispanic Female: 354 (22.5%)
Hispanic Male: 310 (19.7%)

FALL 2012 (GRANT YEAR 2)
All STEM Students: 1955
Not Target: 851 (43.5%)
Target (Hispanic OR Low Income): 1104 (56.5%)
Hispanic: 810 (41.4%)
Low Income: 650 (33.2%)
Hispanic AND Low Income: 356 (18.2%)
Hispanic Female: 504 (25.8%)
Hispanic Male: 356 (18.2%)

FALL 2013 (GRANT YEAR 3)
All STEM Students: 2175
Not Target: 822 (37.8%)
Target (Hispanic OR Low Income): 1353 (62.2%)
Hispanic: 1038 (47.7%)
Low Income: 815 (37.5%)
Hispanic AND Low Income: 500 (23.0%)
Hispanic Female: 601 (27.6%)
Hispanic Male: 437 (20.1%)

The target for Measure 2 was a 5% annual increase over the baseline in the number of target population students applying to become STEM majors at CI. In the baseline year of Fall 2010, a total of 667 target students applied to CI for one of our seven STEM majors. A 5% increase on this baseline represents an increase annually of 33 target students resulting in targets of 700, 733, 766, and 799 target student applications in Grant Years 2 – 5, respectively. The actual number of target
student applications in Grant Years 2 and 3 were 1104 and 1353, respectively. Measure 2 has been updated to reflect this new baseline and new targets resulting from the implementation of the IPEDS ethnicity codes. We noted that the numbers of Hispanic AND Low-Income students nearly doubled as a result of implementing the IPEDS codes.

UPDATED MEASURE #2: There will be a 5% annual increase over baseline in the target population (Hispanic OR low-income applicants) applying to enroll in STEM majors at CI from a baseline of 667 students. This would increase the number of target (Hispanic OR low-income) students applying to CI in a STEM major annually by 33 students resulting in targets of 700, 733, 766, and 799 target student applications in Grant Years 2 — 5, respectively.

For the reporting purposes, the change in the gap from the baseline of 667 target students was a 437 student increase (1104 - 667 = 437) for Grant Year 2 and a 686 student increase (1353 - 667 = 686) for Grant Year 3. The target increases were 33 and 66 (2 x 33= 66) in Grant Years 2 and 3. We met and exceeded our targets for this measure in both Grant Years 2 and 3. The values of 686 target students for Grant Year 3 Actual Performance Data and 66 target students for Grant Year 3 Target Data were used in our reporting on Measure 2 for this objective, as indicated in the Measure #2 Calculation at the beginning of the Data Collection Information section.

Qualitative Data

This goal has been addressed by activities that are related to STEM student success on the CI campus (discussed in Objectives 1 and 2), student engagement in research as a best practice for engaging underrepresented students (discussed under Objective 6), STEM Pipeline (discussed in Objective 3), and STEM Outreach (discussed in Objective 5).
Project Objective: 5. Develop new STEM outreach programs to communicate information about STEM disciplines and careers at the P-14 level. Increase the number of P-14 students impacted by these STEM outreach efforts by 5% annually.

Check if this is a status update for the previous budget period.

<table>
<thead>
<tr>
<th>Performance Measure</th>
<th>Measure Type</th>
<th>Quantitative Data</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Project</td>
<td></td>
</tr>
<tr>
<td>STEM outreach will be provided to a total of 500 P-12 students during grant year 1. Annually increase STEM outreach over baseline year 1 numbers by 5%. Note: the Year 1 target was 500 students and the actual number of students impacted were 2050, which was 410% of our target.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Target Raw Number</td>
<td>50</td>
</tr>
<tr>
<td></td>
<td>Ratio</td>
<td>50 / 50</td>
</tr>
<tr>
<td></td>
<td>%</td>
<td>100</td>
</tr>
<tr>
<td></td>
<td>Actual Performance Raw Number</td>
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</tr>
<tr>
<td></td>
<td>Ratio</td>
<td>4161 / 50</td>
</tr>
<tr>
<td></td>
<td>%</td>
<td>8322</td>
</tr>
</tbody>
</table>

Explanation of Progress (Include qualitative data and data collection information)

Data Collection Information

This measure indicated that STEM outreach would be provided to a total of 500 K-12 students during grant year 1 and that the number of students would increase annually by 5% (5% x 500 = 25 students per year). Based on this measure, the targets for grant years 1, 2, and 3 were 590, 525, and 560. The actual number of students was 4661 which is a 4161 increase over the Year 1 target of 500 students. We have met and substantially exceeded these targets.

The numbers of attendees at various K-12 outreach events were collected through sign-in sheets or visual/ manual count and are listed below for the baseline year as well as grant years 1, 2, and 3. The number of students impacted in grant year 3 reflects an increase of 2651 students (4661-2050) over year 1, and an increase of 3561 students (4661-1100) over the baseline; in percentage terms, we saw a 127% increase in the number of K-12 students impacted from grant year 1 to grant year 3, and a 323% increase in the number of K-12 students impacted by STEM outreach in year 3 over the baseline year.

BASELINE (AY 2010-2011) STUDENTS IMPACTED BY STEM OUTREACH PROGRAMS

500 Science Carnival
600 STEM Expo
0 STEM Skills and Development Enrichment Pathways Program (SSDEP)
0 Idea to Impact Program
0 STEM Interactive Pathways to College
0 Other STEM Outreach

Baseline total of 1100 students

GRANT YEAR 1 (AY 2011-2012) STUDENTS IMPACTED BY STEM OUTREACH PROGRAMS

750 Science Carnival
650 STEM Expo
40 STEM Skills and Development Enrichment Pathways Program (SSDEP)
40 Idea to Impact Program
120 STEM Interactive Pathways to College
500 Other STEM Outreach

Grant year 1 total of 2050 students

GRANT YEAR 2 (AY 2012-2013) STUDENTS IMPACTED BY STEM OUTREACH PROGRAMS

1000 Science Carnival
650 STEM Expo
200 STEM Skills and Development Enrichment Pathways Program (SSDEP)
60 Idea to Impact Program
600 STEM Interactive Pathways to College
325 Other STEM Outreach

Grant year 2 total of 2835 students

GRANT YEAR 3 (AY 2013-2014) STUDENTS IMPACTED BY STEM OUTREACH PROGRAMS

1650 Science Carnival
763 STEM Expo
20 Great Inventors
40 STEM Skills and Development Enrichment Pathways Program (SSDEP)
600 STEM Interactive Pathways to College
889 Super STEM Saturday
171 University Prep Academy
25 Future Leaders of America, STEM Panel
147 Earth Day at the Park, Fillmore Middle School
144 College Making It Happen
262 MERITO and MSTI Collaboration

Grant year 3 total of 4661 students

Additional Information about this objective as well as Qualitative Data are provided as a separate document attached to this APR.
Project Objective 6: Develop and implement best practices interventions for assisting Hispanic and low-income students in their development of critical STEM skill sets including: critical thinking, analytical reasoning, scientific literacy, and interdisciplinary communication. Increase the number of Hispanic and low-income students participating in research experiences in STEM majors at CI by 5% annually.

Check if this is a status update for the previous budget period.

<table>
<thead>
<tr>
<th>Performance Measure</th>
<th>Measure Type</th>
<th>Quantitative Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>A total of 10 under-served students (Hispanic or low-income) will be engaged in paid academic year research experiences through Project ACCESO in grant years 1 and 2, and 14 in grant years 3 – 5.</td>
<td>Project</td>
<td>Raw Number</td>
</tr>
<tr>
<td></td>
<td></td>
<td>14</td>
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<td>Raw Number</td>
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</tbody>
</table>

Explanation of Progress (Include qualitative data and data collection information)

Data Collection Information

Undergraduate research is widely recognized as a best practice for engaging and retaining underrepresented minority students in STEM disciplines. The undergraduate research experience enriches learning and the development of critical STEM skill sets, including critical thinking, analytical reasoning, scientific literacy, and interdisciplinary communication. Project ACCESO has committed to increasing the number of Hispanic and low-income students who participate in undergraduate STEM research both on our campus and at our regional community college partners.

Measure 1 Calculation

Target: Raw number = 14% change and target ratio = 100% (14 divided by 14 x 100)
Actual performance data: Raw number = 21 change and actual performance data ratio = 150% increase (21 divided by 14 x 100)

Measure 2 Calculation

Target: Raw number = 9 change and target ratio = 100% (9 divided by 9 x 100)
Actual performance data: Raw number = 29 change and actual performance data ratio = 322% increase (29 divided by 9 x 100)

Measure 1 Discussion:

This measure relates to the number of students engaged in paid research opportunities through Project ACCESO. The numbers of target population students to be engaged in paid academic-year research were 10 students in grant years 1 and 2, and 14 in grant years 3 – 5. The below numbers of target and total numbers of students have been engaged in research since the inception of the grant.

Grant Year 1: 17 paid research assistants, 14 (82%) Hispanic and 17 (100%) Hispanic OR Low-Income
Grant Year 2: 17 paid research assistants, 12 (71%) Hispanic and 16 (94%) Hispanic OR Low-Income
Grant Year 3: 24 paid research assistants, 16 (67%) Hispanic and 21 (88%) Hispanic OR Low-Income

We have met and exceeded our targets for each of the years of the grant. For the reporting purposes, the target was 14 Hispanic OR Low-Income students and the actual number was 21 students. The values of 21 students for Grant Year 3 Actual Performance Data and 14 students for Grant Year 3 Target Data were used in our reporting on Measure 1 for this objective, as indicated in the Measure #1 Calculation at the beginning of the Data Collection Information section.

Measure 2 Discussion:

Student enrollments in independent research courses (BIOI 494, CHEM 494, COMP 494, ESRM 494, MATH 494 and 497, and PHYS 494 and 497) were obtained from PeopleSoft along with ethnicity and low-income status of the students enrolled in these classes. The implementation of IPEDS ethnicity codes impacted the baseline and targets for this measure. We proposed to increase the number of students enrolled in these research courses by 5% annually from a baseline of 56 target (Hispanic OR low-income) students in Fall 2010 and Spring 2011. This represents 3 additional target students (56 x 5% = 3) each year of the grant resulting in targets of 59, 62, 65, 68, and 71 students in grant years 1 – 5, respectively. The actual data were 60, 85, and 85 target students enrolled in these classes in Grant Years 1, 2, and 3, respectively. We have updated Measure 2 to reflect this new baseline and targets derived from implementation of IPEDS.

UPDATED MEASURE 2: In each grant year (Yr 2 – 5) there will be 3 more target population STEM students (Hispanic or low-income) enrolled in independent research. This represents a 5% per annum increase over the pre-ACCESO baseline of 56 under-served students enrolled in independent research courses in the STEM programs, resulting in targets of 59, 62, 65, 68, and 71 students in grant years 1 – 5, respectively.

For the reporting purposes, the change in the number of target students enrolled in research from the baseline of 56 students was a 27 student increase (83 - 56 = 27) for Grant Year 2 and a 29 student increase (85 - 56 = 29) for Grant Year 3. The target enrollments were 62 and 85 target students enrolled in research in Grant Years 2 and 3. We met and exceeded our targets for this measure in both Grant Years 2 and 3. The values of 29 students for Grant Year 3 Actual Performance Data and 9 students (3 years x 3 = 9) for Grant Year 3 Target Data were used in our reporting on Measure 2 for this objective, as indicated in the Measure #2 Calculation at the beginning of the Data Collection Information section.

Additional Information about this objective as well as Qualitative Data are provided as a separate document attached to this APR.
Section B: Budget Information

BUDGET EXPENDITURES AND DRAW DOWN FROM THE GS SYSTEM:

All funds have been drawn down in the GS system for year 3 of the grant.

PROVIDE AN EXPLANATION IF YOU DID NOT EXPEND FUNDS AT THE EXPECTED RATE DURING THE REPORTING PERIOD:

As of the September 30, 2014, we have spent a total of $1,179,043.57 of our $1,318,196.36 budget for year 2 of the grant ($1,193,632 Year 3 budget plus $124,564.36 Carry-Over from Year 2). This spending represents 89.4% of the total grant funding available for this grant year. Our carry-over from year 3 to year 4 will be $139,152.79, which is considerably lower than our carry-over from year 1 ($178,132.34) and only somewhat higher than our carry-over from year 2 to year 3 ($124,564.36). Overall, we are making excellent progress towards expending funds that we were unable to spend in year 1 of the grant as a result of the late hire of project staff and the concomitant delayed start-up of activities that they coordinate, and the delay (June 2012) in setting up of the subawards to our partner community colleges.

DESCRIBE ANY SIGNIFICANT CHANGES TO YOUR BUDGET RESULTING FROM MODIFICATION OF PROJECT ACTIVITIES:

No significant changes were made to our budget as a result of the modification of project activities beyond what was reported in our approved year 2 Annual Performance Report (APR). During this grant year, we added a new activity, STEM Academic Success Coaching, and hired a staff member (Aracely Flores) in November 2013 to coordinate this activity.

DESCRIBE ANY CHANGES TO YOUR BUDGET THAT AFFECTED YOUR ABILITY TO ACHIEVE YOUR APPROVED PROJECT ACTIVITIES AND/OR PROJECT OBJECTIVES.

No changes to our budget affected our ability to achieve our project activities or objectives.

DO YOU EXPECT TO HAVE ANY UNEXPENDED FUNDS AT THE END OF THE CURRENT BUDGET PERIOD? IF YOU DO, EXPLAIN WHY, PROVIDE AN ESTIMATE, AND INDICATE HOW YOU PLAN TO USE THE UNEXPENDED FUNDS (CARRYOVER) IN THE NEXT BUDGET PERIOD:

Our carry-over from year 3 to year 4 will be $139,152.79 which is budgeted as follows:

- $89,259.47 Personnel
- $5,000 Travel
- $12,791.62 Equipment
- $19,439.80 Supplies
- $12,661.90 Contractual

$139,152.79 Total

DESCRIBE ANY ANTICIPATED CHANGES IN YOUR BUDGET FOR THE NEXT BUDGET PERIOD THAT REQUIRE PRIOR APPROVAL FROM THE DEPARTMENT:

None

Section C: Additional Information

CURRENT PARTNERS ON GRANT:

A total of four partners were included in Project ACCESO activities during the first year of the grant; three of these institutions qualify as HSI institutions and, as a result, received subawards from this grant.

The partners receiving a subaward include:

- Oxnard College, Oxnard, CA
- Santa Barbara City College, Santa Barbara, CA
- Ventura College, Ventura, CA

The fourth partner on this grant, Moorpark College in Moorpark, CA, did not receive a subaward since it has not been identified as a Hispanic-Serving Institution. Their participation in this grant was limited to participation in the STEM articulation summits held in the first two years of the grant. These summits were designed to identify gaps in the articulation of entry-level courses required in STEM courses at CSU Channel Islands (CI). Many of the transfer students in our region take courses from multiple campuses. It is not uncommon for an Oxnard College student to also be enrolled in courses at Moorpark College, for example. As a result, we felt it was important to include not only our regional community colleges recognized as being Hispanic-Serving Institutions but also Moorpark College. In addition, nearly a third of our transfer students come from Moorpark College and some of these students are within our target population (Hispanic or low-income).

No changes were made in the partners during the reported period and no changes will be made in the next budget period.

DESCRIBE ANY CHANGES THAT YOU WISH TO MAKE IN THE GRANT’S ACTIVITIES FOR THE NEXT BUDGET PERIOD THAT ARE CONSISTENT WITH THE SCOPE AND OBJECTIVES OF YOUR APPROVED APPLICATION:

No significant changes to grant activities are requested. In grant year 3, we added a STEM Academic Success Coach (60% effort) as of November 1, 2013, and hired an exceptional person, Aracely Flores, who has considerable student counseling experience into this position.

CHANGES TO THE APPROVED PROJECT DIRECTOR:

No changes were made to the approved Project Director.

PROVIDE ANY OTHER APPROPRIATE INFORMATION ABOUT THE STATUS OF YOUR PROJECT INCLUDING ANY UNANTICIPATED OUTCOMES OR BENEFITS FROM YOUR PROJECT:

An oral presentation was given by Prof. Phil Hampton, Director of Project ACCESO, and Prof. Harley Baker, ACCESO Internal Evaluator, on the Summer 2013 CI Migrant Student Leadership Institute (MSLI) at the AHSIE Best Practices Conference in March 2014. Project ACCESO supported the assessment of the MSLI program with the goal of building capacity on the CI campus for encouraging migrant high school students from across Southern California to pursue studies in STEM in college.
One unanticipated outcome of Project ACCESO’s successful outreach and student success work has been a growing recognition of ACCESO staff as regional leaders in STEM. This is evident based on requests for ACCESO staff to serve as collaborators on grants submitted by community organizations and by requests for ACCESO staff to consult on STEM-related projects in the community.

In Fall 2013, Project ACCESO’s Director, Prof. Phil Hampton, was notified of the funding of two subawards on successful U.S. Department of Education Magnet School Assistance Program (MSAP) grants to Ventura Unified School District (VUSD) and Oxnard School District (OSD). As a result of this funding, Project ACCESO’s Outreach Coordinator, Sandy Birmingham, was hired into a new Associate Director of STEM Educational Outreach position that is split between Project ACCESO (40%) and the two MSAP grants (20% each). During year 3 of Project ACCESO, Prof. Hampton and Ms. Birmingham hired a staff member and developed programming for day STEM instruction enrichment at the middle school level (OSD) and afterschool STEM enrichment at the elementary school level (VUSD). The two grants will enhance the STEM preparation of local K-8 grade students resulting in a pipeline of future STEM college students.

In the year 2 APR, we noted that CI was approached by California STEM Learning Network (CSLNet) to be the lead of a new STEM Regional Network centered in Ventura County (VC STEM). In November 2014, Prof. Phil Hampton, Director of Project ACCESO, wrote a grant to Amgen Foundation to secure seed funding to launch the VC STEM network. Amgen Foundation funded this $75K proposal that will lead to a STEM regional network in Ventura County to be coordinated under the Ventura County P-20 Council. VC STEM will launch in November 2015 at the conclusion of a nine-month strategic planning process that will be facilitated by consultants hired from the Gateways East Bay STEM Regional Network. Through the strategic planning process, we anticipate that 2 – 4 strategic initiatives will be identified as a result of gap analysis. One clear gap that exists in Ventura County is the disparity in the STEM readiness of low-income Hispanic middle and high school students compared with non-Hispanic/ higher-income students. Overall, 60% of Ventura County 5th graders and 68% of 8th graders scored as Proficient or Advanced on the Life Science standardized examination. In contrast, low-income Hispanic students have much lower proficiency with 35% of 5th graders and 49% of 8th graders scoring as Proficient or Advanced on this same examination. This gap points to a problem in the preparation of students in STEM that adversely impacts the pipeline of future college STEM students. Over the time period of Project ACCESO, the CSU Channel Islands campus has grown in population from 1743 (Fall 2010) to 2624 (Fall 2014) STEM undergraduates. This 46% increase largely came as a result of a doubling in the population of students from ACCESO’s target population of Hispanic OR Low-Income students (823 to 1644 students) with very little growth in non-target students (920 to 980 students). CI is expected to double its enrollment over the next ten years (5,909 in Fall 2014 to approximately 11,500 students in 2025, a 195% increase). Based on this past history, we anticipate that a majority of these new students will come from our target population with many of them from Ventura County. For this reason, it is critical that CI engage with the community in examining the STEM preparation of Ventura County students in the PK-12 pipeline.

In Fall 2014, the Project Director submitted a successful STEM Collaboratives grant to the California State University (CSU) Chancellor’s Office. This new grant will complement Project ACCESO activities with the goal of increasing retention of freshmen STEM majors. This $374,381 grant is funded through a generous grant to the CSU Chancellor’s Office from The Leona M. and Harry B. Helmsley Charitable Trust.
Objective 1 Discussion:

CSU Channel Islands (CI) opened as a university in Fall 2002 and it has experienced varying growth rates since opening as a campus. Fall enrollment data is provided in Table 1 for the past five years along with a percentage increase from the previous year. Table 2 displays STEM student enrollments for that same period with a breakdown of how many of these students represent target (Hispanic OR Low-Income) and non-target STEM enrollments, and the percentage that the target population represents of the total STEM student enrollment.

Table 1: CSU Channel Islands Fall Semester Undergraduate Enrollment
Data format for Table 1= Academic Year: Undergraduate Enrollment, Percent Increase from Previous Fall Semester

<table>
<thead>
<tr>
<th>Year</th>
<th>Enrollment</th>
<th>Percent Increase</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fall 2009</td>
<td>3585</td>
<td></td>
</tr>
<tr>
<td>Fall 2010</td>
<td>3593</td>
<td>0.2% increase</td>
</tr>
<tr>
<td>Fall 2011</td>
<td>3994</td>
<td>11% increase</td>
</tr>
<tr>
<td>Fall 2012</td>
<td>4717</td>
<td>18% increase</td>
</tr>
<tr>
<td>Fall 2013</td>
<td>4939</td>
<td>4.7% increase</td>
</tr>
<tr>
<td>Fall 2014</td>
<td>5881</td>
<td>19.1% increase</td>
</tr>
</tbody>
</table>

Table 2: CSU Channel Islands STEM Student Enrollment, Target vs. Non-Target STEM Enrollments, and Percent Target
Data format for Table 2= Academic Year (AY): Undergraduate Target STEM Student Enrollment & Non-Target STEM Student Enrollment (Total undergraduate STEM Enrollment), Percent of Target STEM Students in STEM population

<table>
<thead>
<tr>
<th>Year</th>
<th>Target</th>
<th>Non-Target</th>
<th>Total</th>
<th>Target Enrollments</th>
</tr>
</thead>
<tbody>
<tr>
<td>AY 2009-10</td>
<td>741</td>
<td>823</td>
<td>1564</td>
<td>47%</td>
</tr>
<tr>
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<td>920</td>
<td>1743</td>
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<td>AY 2011-12</td>
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</tr>
<tr>
<td>AY 2012-13</td>
<td>1331</td>
<td>1019</td>
<td>2350</td>
<td>57%</td>
</tr>
<tr>
<td>AY 2013-14</td>
<td>1644</td>
<td>980</td>
<td>2624</td>
<td>63%</td>
</tr>
</tbody>
</table>

The Fall 2009/ Spring 2010 and Fall 2010/ Spring 2011 academic years formed the baseline for each of the objectives on Project ACCESO. Limited funding during these academic years for building of the CI campus resulted in no significant overall campus growth; however, STEM enrollments increased by 11% (1743 vs. 1564) during this time period. From the time that Project ACCESO was funded in Fall 2011 to the Fall 2013 semester, the campus has grown 24% (4939 vs. 3994) and STEM enrollments have increased 37% (2624 vs. 1913). This indicates that an increasing percentage of students enrolling at CI are electing to major in STEM. The growth in the target vs. non-target STEM student enrollments has not been parallel since the funding of Project ACCESO with a 68% (1644 vs. 978) increase in target STEM enrollments from Fall 2011 to Fall 2013 vs. a 5% increase (980 vs. 935) in non-target STEM enrollments in this same period. CI’s STEM enrollment growth has largely been the result of the enrollment of increasing numbers of students from our target population while the non-target STEM enrollments have remained fairly flat during this period. For the past two years, target students have been the
majority student on the CI campus with target students now representing three out of every five students in our STEM majors.

Over the past three years, the percentage of students on campus who have a STEM GPA of C or lower has increased from 13 – 16% during the baseline years and in the first two years of Project ACCESO, to one out of five (20%) students having a STEM GPA below a C in the current year of the grant (Academic Year 2013-2014).

Hispanic students and, in particular, Hispanic female students and low-income Hispanic students, exhibit an even lower course pass rate, and Hispanic and especially low-income Hispanic students have a lower gateway STEM course GPA compared with our non-target student population, as shown below in Table 7.

Table 3. Subpopulation Course Pass Rates and Gateway STEM GPA for Various Subpopulations in Grant Year 3 (2013-2014 Academic Year).

<table>
<thead>
<tr>
<th>Subpopulation</th>
<th>Course Pass Rate</th>
<th>Gateway STEM GPA</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Students</td>
<td>76.9%</td>
<td>2.649</td>
</tr>
<tr>
<td>Not Target</td>
<td>80.9%</td>
<td>2.772</td>
</tr>
<tr>
<td>Target (Hispanic OR Low Income)</td>
<td>74.5%</td>
<td>2.576</td>
</tr>
<tr>
<td>Hispanic</td>
<td>72.2%</td>
<td>2.515</td>
</tr>
<tr>
<td>Low Income</td>
<td>74.1%</td>
<td>2.563</td>
</tr>
<tr>
<td>Hispanic AND Low Income</td>
<td>70.3%</td>
<td>2.459</td>
</tr>
<tr>
<td>Hispanic Female</td>
<td>70.8%</td>
<td>2.539</td>
</tr>
<tr>
<td>Hispanic Male</td>
<td>74.8%</td>
<td>2.469</td>
</tr>
</tbody>
</table>

We believe that the rapid growth trajectory of the CI campus and the increasing percentage of our target student population who are at-risk academically has resulted in a student population now at CI that is very different academically than in our baseline years. Although we did not meet these two performance measures for Objective #1, we have seen dramatic increases in student demand for STEM tutoring and Peer-Led Team Learning and Project ACCESO has met this demand by increasing the capacity for STEM Student Success services on the CI campus. We believe this increased institutional capacity has reduced what might have been an even larger gap between our target and non-target populations and that this will lead to both increased student gateway STEM course pass rates and student grade point averages in the future.

Qualitative Data

Project ACCESO has implemented a number of STEM Student Success activities to address this objective. Data that is being collected from these activities supports the positive impact that ACCESO is making on STEM Student Success at CI. These activities include:

1. Providing STEM students with a facility where they can study and receive STEM Student Success Services
2. Providing STEM Student Success Services
a. STEM Tutoring  
b. Peer-Led Team Learning Workshops  
c. Summer Scholars Institute  
d. STEM Posses/ Peer Mentoring  

3. Providing STEM Student Success Interventions  
a. STEM Academic Success Coaching  
b. Early Assessment in Gateway STEM Courses  

4. Providing Students with Paid Student Assistant Positions  

Each of these activities will be discussed in the following sections.

1. Providing STEM Students with a facility where they can study and receive STEM Student Success Services

The most important accomplishment of Project ACCESO has been the creation of a STEM Center and associated space in El Dorado Hall where STEM students can study and receive STEM student success services. This space was renovated through a collaboration between Project ACCESO and Project Vista, CI’s Title V PPHOA grant, and the space serves both programs with dedicated spaces for a Graduate Studies Center and a STEM Center. Renovation of El Dorado Hall was complete at the beginning of February 2012, and student success services were offered starting in Spring 2012. The STEM Center is a 670 square foot room with 13 computer stations and tables where STEM tutoring can occur. There is also a large whiteboard painted wall where students can collaborate and interact with tutors. In addition to heavy use of the STEM center, STEM students use each of the other four rooms renovated within El Dorado Hall, including the Learning Studio, Multipurpose Room, Conference Room, and Kitchen area. At all times of the day, El Dorado Hall has students studying at tables as individuals or in groups. The Multipurpose Room has provided a much-needed event space where guest speakers for Project ACCESO and Project Vista can present and where workshops can be held.

In Fall 2013, we renovated a portion of the kitchen area into a dedicated office where our STEM Academic Success Coach, Aracely Flores (hired 11/13), could meet privately with students. This project expended the construction funds remaining as carry-over into Year 3 of the grant.

2a. Providing STEM Student Success Services: STEM Tutoring

Tutoring is provided at no charge by Project ACCESO at the STEM Center in El Dorado Hall for all gateway STEM Courses as well as upper-division courses in STEM majors. Student tutors are selected so that they can tutor across disciplines, where appropriate. In addition to the tutoring services offered at the STEM Center, STEM tutoring is also provided for select STEM courses by the Learning Resources Center located in the library. The Biology, Chemistry, and Computer Science programs offer a limited number of tutoring hours for students as well.

Data on student use of STEM Tutoring has been collected since the opening of the STEM Center and El Dorado Hall in Spring 2012. When students arrive for tutoring, they sign-in using
computers in the STEM Center; this allows their identity, purpose of visit, and frequency of use to be correlated with student information obtained from PeopleSoft. We define “served students” as students who received ACCESO services specifically, in this case, STEM tutoring services offered through the STEM Center. “Non-served students” are defined as students who did not receive ACCESO services.

Table 4 provides data regarding the number of student visits for tutoring services there were each semester since the opening of the STEM Center in Spring 2012.

Table 4: Number of Student Visits for STEM Tutoring at the STEM Center per Semester

<table>
<thead>
<tr>
<th>Semester</th>
<th>Visits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spring 2012</td>
<td>648 visits</td>
</tr>
<tr>
<td>Fall 2012</td>
<td>1945 visits</td>
</tr>
<tr>
<td>Spring 2013</td>
<td>1878 visits</td>
</tr>
<tr>
<td>Fall 2013</td>
<td>2538 visits</td>
</tr>
<tr>
<td>Spring 2014</td>
<td>2622 visits</td>
</tr>
</tbody>
</table>

Visits for tutoring services in the STEM Center increased 156% from grant year 1 when the STEM Center opened (648 visits in Spring 2012), to grant year 2 (1911 average visits per semester in Fall 2012/Spring 2013); this use increased again by 154% in grant year 3 (2574 average visits per semester in Fall 2013/ Spring 2014). It is clear from this data that ACCESO services are in demand from STEM students at CI and that ACCESO has substantially increased the capacity for STEM tutoring at CI. In Fall 2013, 451 distinct students took advantage of tutoring services compared with 320 distinct students in Fall 2012. This represents a 41% growth in the number of students who are utilizing STEM tutoring services. At the same time, the STEM enrollment at CI only increased 12% (Table 6: 2350 STEM students in AY 2012-13 and 2624 STEM students in AY 2013-2014). Over 4500 tutoring hours were offered during grant year 3 and 846 distinct students (646 of which are majoring in a STEM discipline) were able to benefit from STEM Tutoring in a total of 5160 visits to the STEM Center. Clearly, student use of and demand for Project ACCESO tutoring services has increased dramatically since the grant was funded. Demand for tutoring has increased so substantially that STEM tutoring is offered Monday – Saturday during the day and in the evening.

Tables 5, 6, and 7 provide data related to the academic performance of “served” and “non-served” students during the Fall 2013 and Spring 2014 semesters. The course grade data in the below tables displays information in the format of “Served Student” data followed by the course data for the overall STEM student population (Served AND Non-Served) in parentheses.

Table 5: Mean Gateway STEM Course Grades for Various Student Subpopulations Participating in STEM Tutoring

Data format for Table 5 = Subpopulation: Served (Served AND Non-Served)

<table>
<thead>
<tr>
<th>Subpopulation</th>
<th>Mean</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Students</td>
<td>1.725</td>
<td>(2.096)</td>
</tr>
<tr>
<td>Hispanic Students</td>
<td>1.750</td>
<td>(1.935)</td>
</tr>
<tr>
<td>Low-Income Students</td>
<td>2.067</td>
<td>(2.140)</td>
</tr>
</tbody>
</table>
Hispanic OR Low-Income (ACCESCO target population): 1.863 (2.072)
Non-Target Population Students: 1.408 (2.128)
Hispanic AND Low-Income: 1.950 (1.958)
Hispanic Female Students: 1.651 (1.899)
Hispanic Male Students: 1.981 (2.004)

Table 6: Mean CSU Channel Islands (CI) GPA of Students Enrolled in Gateway STEM Classes Participating in STEM Tutoring
Data format for Table 6 = Subpopulation: Served (Served AND Non-Served)

All Students: 2.861 (2.721)
Hispanic Students: 2.792 (2.593)
Low-Income Students: 2.835 (2.646)
Hispanic OR Low-Income (target population definition): 2.837 (2.651)
Non-Target Population Students: 2.925 (2.833)
Hispanic AND Low-Income: 2.764 (2.550)
Hispanic Female Students: 2.801 (2.625)
Hispanic Male Students: 2.773 (2.536)

Table 7: STEM Course Pass Rates of Students Enrolled in Gateway STEM Classes Participating in STEM Tutoring
Data format for Table 7 = Subpopulation: Served (Served AND Non-Served)

All Students: 61.9% (67.6%)
Hispanic Students: 62.4% (61.8%)
Low-Income Students: 71.9% (65.8%)
Hispanic OR Low-Income (target population definition): 64.1% (65.3%)
Non-Target Population Students: 57.7% (70.8%)
Hispanic AND Low-Income: 72.1% (60.5%)
Hispanic Female Students: 61.7% (67.4%)
Hispanic Male Students: 65.6% (66.3%)

The fact that the mean gateway STEM GPA is 0.371 point lower and the overall gateway STEM course pass rate is 5.7% lower for students receiving STEM tutoring (“served” students) indicates that STEM tutoring is being sought out largely by students who are “at-risk” of not succeeding in their STEM courses. Students who were enrolled in STEM gateway courses had a higher overall CI GPA (Table 10) than their GPA in their gateway STEM courses (Table 9). A recent report on STEM attrition (STEM Attrition: College Students’ Paths Into and Out of STEM Fields, U.S. Department of Education, IES National Center for Education Statistics, 2013) noted that one characteristic of students who leave STEM majors for non-STEM majors was that their grades in STEM courses were lower than their grades in non-STEM courses. The higher mean CI GPA indicates that non-gateway STEM course grades must be higher for these students resulting in a higher mean CI GPA than the mean GPA in gateway STEM courses. Hispanic female
students who utilized STEM tutoring had a considerably lower mean GPA in gateway STEM courses and a higher mean CI GPA than Hispanic male students.

Students who seek STEM tutoring services through Project ACCESO also represent at-risk students based on course pass rates (Table 11). In addition to having lower mean gateway STEM course grades, Hispanic female students also have significantly lower course pass rates than Hispanic males.

While high school GPAs are imperfect measures of student readiness for college study, examining high school GPAs reinforces our interpretation that a higher percentage of “at-risk” students are seeking the support provided by STEM Tutoring. Table 8 shows that across all subpopulations, mean high school GPAs are significantly lower for the students “served” as compared with those who are “not served” by STEM Tutoring.

Table 8: Mean HS GPAs for Various Student Subpopulations Participating in STEM Tutoring and Taking Gateway STEM Courses
Data format for Table 8 = Subpopulation: Served (Served AND Non-Served)

<table>
<thead>
<tr>
<th>Subpopulation</th>
<th>Served  (AND Non-Served)</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Students</td>
<td>1.947 (2.285)</td>
</tr>
<tr>
<td>Hispanic Students</td>
<td>2.177 (2.447)</td>
</tr>
<tr>
<td>Low-Income Students</td>
<td>1.576 (2.147)</td>
</tr>
<tr>
<td>Hispanic OR Low-Income (ACCESO target population)</td>
<td>1.904 (2.271)</td>
</tr>
<tr>
<td>Non-Target Population Students</td>
<td>2.050 (2.309)</td>
</tr>
<tr>
<td>Hispanic AND Low-Income</td>
<td>1.943 (2.355)</td>
</tr>
<tr>
<td>Hispanic Female Students</td>
<td>2.441 (2.690)</td>
</tr>
<tr>
<td>Hispanic Male Students</td>
<td>1.561 (1.988)</td>
</tr>
</tbody>
</table>

Both the students being tutored and the tutors themselves benefit from tutoring with tutors gaining greater mastery of the material, especially at the conceptual level, and greater student connectedness to the college or university.

One of our original 18 objectives in our grant proposal was, “A minimum of 1200 hours of tutoring, STEM mentoring (STEM Posses), and peer-led team learning services have been provided in grant year 1 and a minimum of 3000 hours in grant years 2 – 5.” The number of hours of tutoring (4515 hours) and peer-led team learning (3248 hours) combined together total 7763 hours, which vastly exceeds the goal of 3000 hours for our student success services. Although we have not yet seen a change in the gap between our target and non-target student populations, this use data shows that Project ACCESO services are positively impacting the capacity of CI to increase the number of students, especially target population students, who are succeeding in STEM majors and graduating with STEM degrees from CI.

2b. Providing STEM Student Success Services: Peer-Led Team Learning (PLTL) Workshops

Peer-Led Team Learning (PLTL) is a student success approach that complements STEM tutoring by engaging students in collaborative group work as opposed to the one-on-one or small groups involved in STEM tutoring. This approach was originally developed in the discipline of
Chemistry through National Science Foundation-funded research at the City College of New York. It is now widely recognized as a best practice in facilitating student success. PLTL workshop sessions engage up to 15 students who elect to participate in a PLTL session in working problems related to a gateway STEM course with facilitation by a student who recently took that course and did well in the course. These “near-peer” workshop leaders (Peer Leaders) are responsible for conducting the weekly two-hour workshops and work alongside the workshop participants to help them solve the problem set problems. This approach is in contrast with recitation sessions and supplemental instruction which tend to have the facilitator delivering content or demonstrating how a problem is worked. Peer Leaders receive training in group study skills including approaches to engaging students, encouraging multiple approaches to problems, and facilitating the group’s collaboration focused on conceptual learning.

The number of courses with PLTL workshops has increased steadily since this program was initiated in Fall 2012. We now offer PLTL workshops in a total of twelve gateway STEM courses (19 workshops in Fall 2013 and 27 workshops in Spring 2014) which is a significant increase from two courses in Fall 2012 (five workshops) and eight courses (16 workshops) in Spring 2013. Enrollment in these PLTL sessions has also increased from 21 students in Fall 2012 to 85 students in Fall 2013. Students who are participating in the PLTL workshops are split nearly equally between transfer students and our native freshmen. At this point, the PLTL program is nearly fully built-out in terms of developing materials for workshops, with plans to add only one new computer science course to our PLTL offerings. Students have requested that some PLTL workshops be offered during the summer for our small summer school program.

Tables 9 and 10 display mean gateway STEM course grades and mean CI GPA of students who participate in PLTL sessions, and Table 11 displays the gateway STEM course pass rates for served and non-served students.

Table 9: Mean Gateway STEM Course Grades for Various Student Subpopulations Participating in PLTL Workshops
Data format for Table 9 = Subpopulation: Served (Served AND Non-Served)

<table>
<thead>
<tr>
<th>Subpopulation</th>
<th>Mean Grade</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Students</td>
<td>2.294</td>
<td>2.169</td>
</tr>
<tr>
<td>Hispanic Students</td>
<td>1.997</td>
<td>1.895</td>
</tr>
<tr>
<td>Low-Income Students</td>
<td>2.050</td>
<td>2.038</td>
</tr>
<tr>
<td>Hispanic OR Low-Income (target population definition):</td>
<td>2.128</td>
<td>2.043</td>
</tr>
<tr>
<td>Non-Target Population Students:</td>
<td>2.583</td>
<td>2.339</td>
</tr>
<tr>
<td>Hispanic AND Low-Income:</td>
<td>1.802</td>
<td>1.789</td>
</tr>
<tr>
<td>Hispanic Female Students:</td>
<td>1.946</td>
<td>1.849</td>
</tr>
<tr>
<td>Hispanic Male Students:</td>
<td>2.106</td>
<td>1.964</td>
</tr>
</tbody>
</table>

Table 10: Mean CSU Channel Islands (CI) GPA of Students Enrolled in Gateway STEM Classes Participating in PLTL Workshops
Data format for Table 10 = Subpopulation: Served (Served AND Non-Served)

<table>
<thead>
<tr>
<th>Subpopulation</th>
<th>Mean Grade</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Students</td>
<td>2.881</td>
<td>2.789</td>
</tr>
</tbody>
</table>
Hispanic Students: 2.634 (2.710)
Low-Income Students: 2.762 (2.716)
Hispanic OR Low-Income (target population definition): 2.772 (2.716)
Non-Target Population Students: 3.071 (2.888)
Hispanic AND Low-Income: 2.658 (2.582)
Hispanic Female Students: 2.692 (2.799)
Hispanic Male Students: 2.545 (2.518)

Table 11: STEM Course Pass Rates of Students Enrolled in Gateway STEM Classes Participating in PLTL Workshops
Data format for Table 11 = Subpopulation: Served (Served AND Non-Served)

All Students: 70.4% (69.1%)
Hispanic Students: 62.7% (61.4%)
Low-Income Students: 61.0% (64.3%)
Hispanic OR Low-Income (target population definition): 65.5% (65.0%)
Non-Target Population Students: 77.6% (74.7%)
Hispanic AND Low-Income: 54.0% (57.9%)
Hispanic Female Students: 67.6% (65.9%)
Hispanic Male Students: 68.1% (67.4%)

The PLTL use data suggests that the students who utilize PLTL workshops (“served” students) have a somewhat higher mean STEM gateway course grade (0.125 units) than non-served students while course pass rates for served and non-served subpopulations were very similar. There are two possibilities: either PLTL workshops attract students that resemble the overall STEM student population, or PLTL, when measured in terms of achieving parity or excellence in mean STEM gateway course grades and course pass rates, is a successful intervention. With the same caveat about overreliance on high school GPAs as measures of college readiness, we note that Table 12 indicates that students who chose to participate in PLTL during Fall 2013 and Spring 2014 had lower mean high school GPAs than did the students who did not participate in PLTL.

Table 12: Mean HS GPAs for Various Student Subpopulations Participating in PLTL and Taking Gateway STEM Courses
Data format for Table 12 = Subpopulation: Served (Served AND Non-Served)

All Students: 1.982 (2.097)
Hispanic Students: 1.872 (2.156)
Low-Income Students: 1.585 (1.785)
Hispanic OR Low-Income (ACCESO target population): 1.814 (1.973)
Non-Target Population Students: 2.298 (2.274)
Hispanic AND Low-Income: 1.573 (7.934)
Hispanic Female Students: 2.065 (2.362)
Hispanic Male Students: 1.453 (1.841)
2c. Providing STEM Student Success Services: Summer Scholars Institute

The Summer Scholars Institute (SSI) was launched in July/August 2012 as a four-week program designed to help incoming STEM freshmen with their transition to university life and to provide them with math preparation for their freshman year. CI STEM faculty are recruited to guide students through a variety of science lab and field activities; this feature is now a strength of the SSI since the participants gain a familiarity with STEM faculty and an introduction to a broad range of STEM disciplines. Students benefit additionally from hearing from faculty regarding their paths to becoming scientists.

The enrollment target was 18 students for Year 1 (Summer 2012 SSI) and 30 students for Year 2 (Summer 2013 SSI); however, we were only able to recruit 6 and 9 students, respectively, for the Summer Scholars Institutes those years. Students who participated in the SSI during Summer 2013 were enrolled in UNIV 100 University Life and College Success (1 unit) with the tuition being paid for them by CI’s Extended University. Despite offering free course credit, enrollment in the program did not increase markedly.

Student feedback for why they did not attend the SSI suggested that the length of the program prevented a number of students from wanting to participate. In Year 3 (Summer 2014), we shortened the program to a three-week program and the number of students participating in the 2014 SSI increased to 14 participants. As a result of the compressed schedule, it was necessary to drop some mathematics sessions as well as some university transition activities. Of the fourteen students participating in the 2014 SSI, three had been placed in a remedial math course as a result of their score on the Entry-Level Mathematics (ELM) examination required of all freshmen. At the end of the three-week program, these three students took a test-out examination for the remedial math course but they did not score high enough to move out of the remedial math course where they were placed. In the future, we will likely eliminate the UNIV 100 so that more contact hours can be dedicated to math instruction.

In contrast to this outcome of the 2014 SSI, a one-week math-intensive summer program for incoming EOP students offered by CI’s EOP Office and Project ISLAS, CI’s Title V Part A grant, resulted in 29 of the 34 students (STEM and non-STEM students) participating in the program passing a final exam for that remedial math class and being able to progress to the next math level. This means that one less semester of remedial mathematics coursework needs to be taken by these students. In the case of this EOP program, a significant number of the students were placed in elementary algebra. It is unlikely that a student who entered with such a low placement in a remedial mathematics course would end up being successful in a STEM major, however.

In Fall 2014, CI had the opportunity to submit a proposal to the CSU Chancellor’s Office as part of their STEM Collaboratives initiative. A required component of the grant proposal was a summer program for incoming STEM freshmen. Since Project ACCESO had already built such a program in the SSI, our proposal was highly competitive in the grant selection process and CI’s proposal was funded through December 2016. As a result of the STEM Collaboratives grant, the 2015 SSI will grow to 30 students. For the first time, STEM students placed in intermediate algebra remedial math will be recruited to participate in this program. A final examination will
be administered to the remedial math students, similar to the one the EOP program implements, and students who pass the exam will be able to advance to College Algebra. Similarly, if a student placed in College Algebra or Pre-Calculus and passes the final examination for that class, he/she could advance to the next level of math. Two tracks will be created in the 2015 SSI: one for students with lower math readiness and one for students with higher high math readiness.

One measure of the success of the SSI programming is the participants’ academic performance after completing the program. Of the 14 students who participated in the SSI during the summers of 2012 and 2013 and started classes the following semester, 12 students (86%) are still enrolled as students at CI, and 10 (83%) of the continuing students were maintaining a GPA of 2.0 or better at the end of Spring 2014. Many of the students who participated in the program started in a math class one step higher than they had originally planned as a result of participating in the SSI. Evaluations completed by the Scholars indicate that they perceive they benefitted greatly from the program and would recommend it to a peer. One benefit to participating in the program is an early ability of the participants to engage with STEM faculty and CI staff, and to build relationships with them. One of the 2014 Scholars stated, “The past three weeks was a great way to jump into the college setting; I am glad that I decided to join. During the Summer Scholars Institute I was able to obtain many new skills that will help make my first year in college a breeze. The many different professors and staff members that came to talk with the students each had an important piece of information that is useful for incoming freshman.”

We feel that the Summer Scholars Institute is a program that should be continued at CI.

2d. Providing STEM Student Success Services: STEM Posses/ Peer Mentoring

The STEM Posses/STEM Mentoring program was launched in Fall 2012 with the intent of providing incoming freshmen STEM majors with an upper-division STEM student as a peer mentor. The STEM Posses were intended to consist of a group of 4–8 students who are concurrently taking at least two of the same STEM courses. Trained STEM Mentors were to meet weekly with their STEM Posses as a group and individually to offer advice, mentoring, guidance in making the transition to the university, and assistance in identifying resources. Participation in this program was very low during Fall 2012/Spring 2013 (Year 2 of ACCESO) with less than a dozen students engaged in STEM Posses for this entire academic year. A similarly low number of students participated in this program during the Fall 2013/Spring 2014 academic year (Year 3 of ACCESO) and, as a result, this program was discontinued.

3a. Providing STEM Student Success Interventions: STEM Academic Success Coaching

In Fall 2013, Project ACCESO hired a STEM Academic Success Coach and this new student success service was launched at the beginning of the Spring 2014 semester. Academic Success Coaching is becoming recognized as a best practice for student success that empowers students, especially at-risk students, to become successful and self-directed lifelong learners, and helps them meet their academic and personal goals. The goal of STEM Academic Success Coaching is
to help individual students identify what they want to achieve, to support them in generating strategies for and solutions to problems, and to assist them in becoming responsible and accountable for their actions/inactions and decisions.

The STEM Academic Success Coach addresses this goal by providing guidance to students in the following and other areas, as well as looking at the student in a holistic way:

* Study Skills (methods for note-taking, how best to organize notes, best time to study, how to study, etc.)
* Financial Awareness (awareness of processes for and availability of Financial Aid and scholarships; comprehension of how a change of academic standing and number of credits attempted can affect one’s financial aid, etc.)
* Academic Planning (goal setting, developing individual path-to-graduation plans, identifying issues resulting in change of academic standing, developing strategies to improve academic performance, etc.)
* Time Management (balancing work, school, and life)
* Resources for Success (students will be referred to assorted campus resources at their disposal, including tutoring, peer mentoring, Peer-Led Team Learning, career development, financial aid, academic advising, personal counseling, etc.)
* Developing Positive Relationships with Faculty (learning how to best use office hours/interactions with their instructors)
* Self-Awareness (helping students understand their strengths, values, interests, purpose, and passion; moving students towards taking responsibility for their own actions and decisions)

In one-on-one meetings with the students, CI’s STEM Academic Success Coach has noted that the most common reasons for students seeking coaching is that they are feeling overwhelmed and, in some cases, are not using their time wisely. Efforts have been made to work with the Advising Center to identify STEM students who are on academic probation and to encourage them to pursue coaching.

Perhaps the most requested support that students seek when they come for Academic Success Coaching is talking about their plans for after they graduate and assisting them with the process of researching these plans, for example whether they should continue on to graduate school, professional school, build a resume through research or internships, pursue a job, or take time off.

A total of 22 students sought STEM Academic Success Coaching during the Spring 2014 semester of which 77% (17 students) were our target population of Hispanic OR Low-Income with 59% of the students being transfer students and the remainder being native freshmen.

It is too early at this point to know whether STEM Academic Success Coaching is an effective approach to increasing STEM student success at CI.

3b. Providing STEM Student Success Interventions: Early Assessment in Gateway STEM Courses
Early Identification/Early Warning of at-risk students is a best practice in helping students to succeed in college. A critical first step in establishing an early warning system at CI is to develop and implement mechanisms for the early identification of “at-risk” STEM students. These mechanisms can then be used to connect students with academic support services such as tutoring and Peer-Led Team Learning. To meet this objective, the Early Assessment Project was launched in December 2013. The purpose of this project is to encourage STEM faculty to administer a graded assessment and provide performance feedback to students within the first three weeks of the semester. Faculty received a stipend to develop an assessment (4 - 5% of the student’s grade) and to indicate the assessment in their course syllabus. Students who were identified as “at-risk” through use of this assessment were referred by the faculty to various campus support services. The end of the third week of the semester is a critical date for students because after this date, students are only able to drop a course for serious and compelling reasons.

A total of 20 faculty members participated in the Early Assessment Project in Spring 2014 from across CI’s STEM disciplines. In their end-of-semester reflections, all but one participant indicated that they would implement an early assessment in the same class(es) in the future. The following are representative comments:

**“I would use Early Assessment for all my future classes. It provided students with early warning on their current performance and future grades.”

**“In both courses evaluated…, there was a decrease in the number of students that received a “below passing grade” compared to the previously taught identical courses without an early assessment”

**“Considering the positive impact this program appears to have had on the academic progress of most of the students who were noticed of their initial academic deficiencies, my plan is to “institutionalize” this assessment tool in my … classes. Anecdotal comments from students such as “It showed me that I’d better start studying …” also point toward the program’s efficacy.”

An anonymous end-of-semester survey administered to students garnered a total of 164 responses in Spring 2014. Of this total, 70% agreed or strongly agreed with the statement “The Early Assessment helped me understand what the coursework would be like for this class,” and 65% agreed or strongly agreed with the statement “I would recommend the use of an Early Assessment in this class in the future.” However, student written comments were decidedly mixed, as revealed by the following samples:

**“The early assessment was useful as far as giving me an idea of what sort of questions will be on future tests.”

**“It is a great idea to implement into the learning system. It allows for students to get a better feel for how the teacher will administer the exams, which eases the stress of how to prep for that specific class.”
**“I feel that the Early Assessment didn't really influence me to study more or change my approach in the class… However, I can appreciate the early feedback provided by the early assessment.”**

**“Doing perfect on the Early Assessment gave me a false sense of security. This class was far more challenging than the EA test indicated, I was pleased about that.”**

**“I feel that the early assessment was unnecessary because the professor described the course requirements and difficulty very honestly and thoroughly.”**

The program was run again in Fall 2014 and data will be analyzed during Spring 2015 to determine the extent to which faculty who participated in this program have continued to implement an early assessment and have gone on to implement it in their other courses. It would be a significant shift in campus culture if an increasing number of faculty adopted and continued to adopt early assessment as a tool to help their students succeed.

4. Hiring of STEM Scholars as Paid Student Assistant Positions

A best practice in student success is to provide students with paid student assistant positions related to their major. The USC Center for Urban Education [Malcom, L. E.; Dowd, A. C.; & Yu, T. (2010), *Tapping HSI-STEM Funds to Improve Latina and Latino Access to STEM Professions*, Report from the Center for Urban Education, USC Rossier School of Education] identifies the funding of a college education for Hispanic students as being a critical factor in students’ access to STEM disciplines and their career choices and it recommends providing students with paid research experiences and other on-campus employment.

Project ACCESO employed a total of 53 unique students during the Fall 2013 and Spring 2014 semesters which fall under this reporting period. These paid student assistants (STEM Scholars) support Project ACCESO programming by providing STEM tutoring and PLTL workshops and STEM outreach to the local K–14 community. STEM faculty benefit from having paid student research assistants both during the academic year and the summer to help them with their research. These student assistant positions help to subsidize the costs of education for these students and they employ the students on the CI campus in positions that complement their studies.

All students are paid $12 per hour for a maximum of 20 hours per week during the academic year. Students in the Summer Research Institute work for 40 hours per week. A sizable number of the STEM Scholars meet the definition of being a “target” student as they are Hispanic OR low-income as shown Table 13.

**Table 13: Student Assistants Employed by Project ACCESO During Grant Year 3**

| 53 Total Students Employed by Project ACCESO during Fall 2013 and Spring 2014 |
| 31 (58%) Hispanic Students |
| 26 (49%) Low-Income Students |
37 (70%) Hispanic OR Low-Income Students
Qualitative Data

The following Project ACCESO activities have been implemented to address this objective.

1. STEM Interactive, Pathways to College
2. STEM Skills Development and Exploration Pathways Program
3. Science Carnival
4. STEM Expo
5. Great Inventors Program
6. Other STEM Outreach Programming to K-12

A discussion of each of these programs follows.

1. STEM Interactive, Pathways to College

This is a dynamic, student-centered session that introduces K-8th grade students to the experience of entering a STEM field led by Project ACCESO Outreach Assistants. The workshop includes an age-appropriate science demonstration to get students excited about STEM as well as a hands-on activity that aligns with the demonstration. Lastly, Outreach Assistants share and mentor the visiting students about their personal STEM career pathways and the merits of a STEM degree, from their perspective. Project ACCESO hosted over 259 students during the Fall 2013 semester and 341 students during the Spring 2014 semester in the Pathways to College Program.

The school visit schedule for the Fall 2013 program was:
   September 20, 2013 – Hale Charter Academy, 55 8th grade students
   October 4, 2013 - Sun Valley Middle, 40 6th - 8th grade students
   October 18, 2013 - RJ Frank Intermediate, 60 7th - 8th grade students
   November 1, 2013 - Sepulveda Middle School, 54 8th grade students
   November 15, 2013 - Madison Middle, 50 7th – 8th grade students

The 2014 schedule of school visits included the following:
   February 14, 2014 – McKeve t Elementary School, 60 4th grade students
   February 28, 2014 – Rio Del Valle Middle School, 50 7th grade students
   March 14, 2014 – Vandenberg Middle School, 85 6th-8th grade students
   April 4, 2014 – Santa Rosa Tech Magnet School, 80 8th grade students
   April 11, 2014 – Camarillo Academy of Progressive Education (CAPE Charter), 66 8th Grade students

2. STEM Skills Development and Exploration Pathways (SSDEP) Program

SSDEP focuses on providing middle school students engaged in afterschool programming with opportunities in STEM, including STEM career exploration, STEM skill development, and introducing a college-going culture. This program was initiated in Grant Year 2 as a new
program. Project ACCESO continued the STEM Skills Development and Exploration Pathways (SSDEP) Program with Blackstock Middle School in Fall 2013 and with E. O. Green Middle School in Spring 2014. A total of 20 students were served each semester by this program during Grant Year 3. A new component was added this year where a CI student provided a workshop to the parents of the students in this program that focused on STEM Pathways Preparation for parents of middle school students. The first parent workshop was at Blackstock Middle School. Plans are underway for next year to provide these workshops at the Open House events at the two schools in lieu of during afterschool programming.

3. Science Carnival

The Science Carnival provides hands-on science experiences for PK – 8 grade students and their parents with the goal of increasing students’ interest in science and in pursuing science in their future education. The Halloween/ spooky science-themed event has over 80 hands-on science activities (examples are listed below) conducted by CI faculty and students and by community members. The event is free to the public. Over 1600 individuals attended the 5th Annual Science Carnival on November 2, 2013, held in Oxnard, CA. Over 300 volunteers consisting of CI students, staff, and faculty as well as students and faculty from local community colleges, high school students, and community members supported the hands-on science activities and logistics associated with the event. Some examples of science activities included in the Science Carnival are listed below.

Examples of Science Activities:
- Air Rocket Launchers
- Marshmallow Cannon
- Dissection Station
- Gummy Bear Sacrifice
- Cosmetic Chemistry
- Sugar Pyrotechnics
- Mock Archaeological Dig
- Dark Knight Radar
- Elephant Toothpaste
- Liquid Nitrogen Effects
- Glow Powder Drawings
- Colored Flames
- Giant Bubbles
- Self-Pruning Pumpkin
- Bed of Nails
- Mechanical Arm Egg Toss
- Dragon’s Breath

Extensive planning was conducted at the end of Grant Year 3 with the goal of building capacity at the CI campus to support and sustain the Science Carnival after the current funding from Project ACCESO ends. Numerous campus entities joined a planning committee for the 2014
Science Carnival including the campus’ Events Office, Communications and Marketing, and Parking and Transportation. CI’s Provost provided over $15,000 for the 2014 Science Carnival.

The following is an email Project ACCESO received from a parent who attended the 2013 Science Carnival with her two boys:

“I just wanted to send a thank you to you and everyone involved in making the Science Carnival happen. My two boys (11 and 8) got up this morning and made their own version of one of the math games they played, talked about how strange it was to hold a heart in their hands, laughed at the marshmallows flying through the air, and keep looking at the different colors that appear when light is shone on clear nail polish on their papers.

Thank you so very much for making something like this available and inexpensive (who doesn't love free?), to everyone and encouraging a love of science, experiments and awareness of the world around us.”

4. STEM Expo

Project ACCESO sponsored and hosted the 5th Annual STEM Expo: Exploration of Science, Technology, Engineering, and Math (STEM) Careers, held at the Ventura County Fairgrounds on March 19, 2014. The STEM Expo shows middle school and high school students who are attending the Ventura County Science Fair how their interest in STEM can lead to career opportunities with regional companies and organizations. Twenty-three local STEM companies/organizations volunteered to run booths for the day-long event. A total of 763 students (362 middle school and 401 high school students) attended the STEM Expo and interacted with the companies/organizations. CI STEM faculty highlighted the adventurous and fun facets of learning STEM at interactive booths that included a ping pong ball cannon that can accelerate a ping pong ball to faster than the speed of sound. The feedback from educators and students was incredibly positive.

A new component, the Kid Wind Challenge, was added to the STEM Expo. Students from Ventura County schools developed wind turbines and tested them in a wind tunnel that was jointly purchased by Project ACCESO and the Society of Manufacturing Engineers local division. The first place Kid Wind team at the STEM Expo was selected to move on to the national level. The team flew to Washington and competed as part of the USA Science and Engineering Festival and won their division!

5. Great Inventors Program

Project ACCESO has implemented a new program for high school students during Grant Year 3 called the Great Inventors Program. Great Inventors focuses on cultivating 21st century critical thinking skills for high school students. This program was developed and implemented in partnership with Naval Air Warfare Center Weapons Division Point Mugu (NAVAIR). CI provided Outreach Assistants that knew how to operate CAD software and CI’s six portable 3D
printers. NAVAIR recruited, provided, and paid for the time for one engineer that helped develop and implement the program alongside the ACCESO student assistants. Hueneme High School’s MESA Program provided the space, students, and teacher support to ensure the success of the program. The modules for the program focused on computer programming basics through the use of Cubify Invent CAD software as well as the engineering design process through the use of 3D printing. The Fall 2013 semester was spent planning for and developing the program with the team and the ten week program was implemented in the Spring 2014 semester.

High school students were assigned to teams and they chose to build either a catapult or a safe egg drop mechanism. Students were limited to a particular budget for materials and they went through several iterations before the final competitions. The winner of each competition 3D printed their design and tested it.

After the final competition, students were guided through a self-reflection piece. Many students confided that they felt a sense of surprise and accomplishment in finishing their projects and they self-identified as more capable STEM students who could be college-bound. Additionally, the CI student assistants participated in a panel discussion about STEM pathways. The high school students were provided with time to ask questions and hear information about paying for college, research opportunities, and recommendations for college preparation in high school from their near peers.

An assessment was developed for this program and submitted for approval by the Institutional Review Board. A final exit survey was collected from the student participants.

6. Other STEM Outreach Programming to K-12

Project ACCESO implemented an on-line STEM Outreach request survey during Grant Year 2 (http://www.csuci.edu/projectacceso/outreach.htm). Many more schools request STEM Outreach events than Project ACCESO can support, indicating that there is a substantial unmet demand in the community for STEM-focused events.

** Super Science Saturday (STEM)**

Project ACCESO implemented Super Science Saturday (STEM), a one-day event in partnership with Hueneme Elementary School District for 89 of the district’s GATE students in 4th through 6th grades and 63 parents on Saturday, October 5, 2013 at Hueneme Elementary School. The 4 – 6 grade students participated in three 45-minute, age-appropriate, hands-on STEM activities and demonstrations provided by teams of Project ACCESO student assistants. Parents of these students were provided with an hour-long workshop presented in collaboration by Project ACCESO and CI’s University Outreach on “College Readiness: Supporting your Student” and “STEM Preparation for Student Success,” in both English and Spanish modules. The event was a huge success and Project ACCESO will continue to implement outreach efforts using this model in the following years.
** Future Leaders of America, STEM Panel

Project ACCESO collaborated with Oxnard Union High School District and the Future Leaders of America in Oxnard and participated in a STEM student panel. Four ACCESO student assistants participated in the panel and provided information to 25 high school students about STEM pathways from the college student perspective on April 26, 2014.

** Earth Day at the Park, Fillmore Middle School

Project ACCESO participated in Fillmore Middle School’s Earth Day at the Park event on April 9, 2014. The event showcased environmental science projects that the middle school students worked on throughout the year. Project ACCESO coordinated with CI’s Environmental Science and Resource Management Program and provided two CI students to present information about their capstone project to the middle school students and their families. An estimated 147 middle school students attended the event, as well as additional family members.

** MERITO and MSTI Collaboration

Project ACCESO was approached to collaborate with the MERITO (Multicultural Education for Resource Issues Threatening Oceans) Academy. MERITO conducts bilingual marine conservation outreach in our region that includes watershed education programs. MERITO approached Project ACCESO to help support field trips for K-12 students by providing CI STEM students who could support the field excursions. ACCESO partnered with the on-campus entity, the Math and Science Teacher Initiative (MSTI), to provide the STEM students for MERITO. MSTI provides undergraduate STEM majors interested in pursuing a teaching career with hands-on, experiential teaching experiences to encourage them to become teachers. Project ACCESO provided the coordination between the two groups, MERITO and MSTI. Through these outreach efforts, a total of 262 students were supported.

** University Prep Academy

Project ACCESO participated in University Prep Academy held on November 9, 2013 for high school students and their parents and for community college students. Project ACCESO worked in collaboration with CI’s University Outreach and Project ISLAS to plan and implement this event. Project ACCESO provided a workshop to the students about STEM Preparation and STEM Pathways. Enrollment for this event included 171 high school students, 4 community college students, 49 parents and 11 chaperones.

** College: Making It Happen

Project ACCESO provided a STEM Preparation for Student Success workshop at College: Making It Happen, working in collaboration with Oxnard Union High School District. This
event was held on March 1, 2014. Project ACCESO provided a workshop to high school students and their parents about STEM pathways. A total of 96 adults and 144 high school students participated in the workshop.

** University Charter Middle School Science Fair

Project ACCESO provided five CI students as Science Fair judges for the University Charter Middle School Science Fair on January 23, 2014.
Qualitative Data

This goal has been addressed by the following activities.

1. Enhancing the research capacity of the campus for STEM students and STEM faculty to conduct undergraduate STEM research.

   In Grant Year 3, we acquired a Direct Mercury Analyzer that will be used by undergraduate students to measure mercury levels in soil, egg shells, and fish as part of an interdisciplinary research project between the Chemistry and Environmental Science and Resource Management Programs. A server was also upgraded that provides remote operation of three CI instruments by local community colleges, including Oxnard College, Ventura College, and Moorpark College, through the Virtual Instrumentation Access at CI (VIA-CI) Project. One of the limitations that community colleges face is acquiring modern analytical instrumentation and the VIA-CI Project enables community college students to gain a comparable exposure to modern instrumentation as California State University (CSU) undergraduates receive. This helps them be prepared for transfer from the community college to a CSU or University of California campus.

2. Implementing academic and summer research programming for STEM students to conduct research with STEM faculty.

   This activity area consists of two programs: Academic Year Research and the Summer Research Institute.

   Academic Year Research:

   One of the best practices for student success is engaging them in research as an undergraduate. By participating in a paid research experience, students not only learn how to apply their knowledge from STEM courses to a research setting, they also benefit from being able to get paid to do work related to their course of study. Project ACCESO has engaged students in paid academic research since Grant Year 1. Demand has grown significantly over the past three years to where we now receive many more applications for research assistant positions than we have funding to support. With a limited number of research-active faculty, we have nearly reached full-capacity at being able to place students with faculty and, in many cases, qualified students are turned away due to an inability to place them with a STEM research mentor. The research assistants can work a maximum of 10 hours per week and they are paid $12/ hour for their work. Three colloquia are held each semester to provide the research assistants with professional development opportunities. Students are required to present their research at the Sage Faculty-Student Research Forum held on the CI campus every spring semester. Three ACCESO research assistants attended Society for Advancement of Hispanics/Chicanos and Native Americans in Science (SACNAS) in October 2013 and eleven students attended Southern California Conference for Undergraduate Research (SCCUR). One of the SACNAS students and all of the SCCUR students presented research posters at these conferences.
Summer Research Institute:

This program engages community college and CI STEM students in a three-week paid research program held on the CI campus. A total of 45 students participated in the 2014 Summer Research Institute (SRI) which was an increase from the 35 students who participated in the 2013 SRI. Approximately half (22) of the students were from our three partner community colleges (Oxnard College, Ventura College, and Santa Barbara City College) and the other half (23) were CI students majoring in STEM. The students worked on a research project for 40 hours per week from June 2-20, 2014 under the mentorship of 15 CI STEM faculty members. The 15 teams represented all seven STEM majors at CI. As in previous years, we received nearly double the number of applications as we had slots and it was challenging selecting the students for the program. A total compensation of $1440 was provided to each student researcher. The 2014 SRI culminated in a closing ceremony where students presented research posters to families, CI faculty, and visitors. Each student received a certificate of achievement from their faculty mentor who acknowledged their success and contributions.

One of our 2014 Summer Research Institute students, Cristina Soto-Balderas from Santa Barbara City College, presented her research at the annual Society for Advancement of Hispanics/Chicanos and Native Americans in Science (SACNAS) conference held in Los Angeles from October 16 – 18, 2014; she placed in the category of mathematics for her research conducted under the mentorship of CI Math Professor Jorge Garcia.

Some quotes from students who participated in the 2014 SRI are provided below:

“The Summer Research was an amazing experience. I was able to interact with other students in an outside of the classroom environment. I learned how to adapt and attack different obstacles.”

“The Summer Research Institute gave me the opportunity to expand on mathematical concepts I did not know about. It was fun to do research with math faculty and other like-minded individuals. This experience showed me that I need to improve on my self-confidence and be more assertive in my work. Nonetheless, I feel that I learned more from the research than from regular coursework.”

“I gained new thinking strategy skills, how to communicate and work with others, and got that head start on learning how to conduct research at a college level. The best thing that has happened to me in my first year of college as an undergrad by far!”

“The Summer Research has impacted me by being more comfortable of speaking in front of people and explaining the project research that we conducted. It is a big asset for me because I would like to become a math teacher and gaining experience of learning how to talk to a big crowd and explaining it so that everyone could comprehend it truly has impacted me for the better.”

“Working in small groups worked well in that I was able to make friends and hear my colleagues idea and input of the research topic we were assigned. I also liked that the groups were small and that I was able to work one on one with a Professor. Overall, I think that this research program worked well and that it was a great opportunity for me to broaden my skills in my field of study.”
“The most beneficial to me was the learning process. I was able to be okay with struggling and asking for help and to not be afraid to approach my mentor about the problems I was having difficulty with.”

“Learning that I enjoyed doing research was a huge milestone in what will hopefully be a career as a scientist.”

3. Implementing embedded STEM research at CSU Channel Islands and at our partner community colleges.

The embedded research activity seeks to increase the number of students exposed to authentic research experiences by embedding a mini-research project into gateway STEM classes at CI and at our regional community college partners (Oxnard College, Santa Barbara City College, and Ventura College). We refer to these research projects as “embedded research” projects. The community college partners receive a subaward through Project ACCESO to acquire the supplies and instrumentation to conduct the embedded research project. During Grant Year 3, two new projects were implemented at the community colleges including Long-term Monitoring Program and Experiential Training for Students (LiMPETS, http://limpetsmonitoring.org/) and the Barcode of Life (http://www.barcodeoflife.org/). The LiMPETS project engages students in research protocols used to monitor sandy beach and rocky intertidal ecosystems and in collecting data and entering it into an online database; this project was implemented in courses at CI and at our three community college partners. The Barcode of Life project engages students in isolating mitochondrial DNA and sequencing a specific gene that can be used to collect a unique species “fingerprint” or “barcode.” The DNA sequences are then entered into a database where students “author” their own sequences. The Barcode of Life project has been successfully implemented in biology courses at Santa Barbara City College and at Oxnard College. Training on the Barcode of Life was provided through Project ACCESO to faculty from these two campuses. The Chemistry and Environmental Science embedded research projects from Grant Year 2 and the LiMPETS and Barcode of Life projects continue to be implemented at the community college campuses. Planning was initiated in Grant Year 3 for new embedded research projects in Chemistry, Biology, Environmental Science and Resource Management, Physics, and Mathematics.
2014 Annual Performance Report

ED 524B Cover Sheet

1. PR/Award #: P031C110116
2. Grantee NCES ID#: 110565
3. Project Title: (STEM)2 Strengthening Transfer Education & Matriculation in STEM
4. Grantee Name: California State University, Fullerton -- Office of Grants and Contracts Academic Affairs
5. Grantee Address: 800 N. State College Blvd., CP-275 Fullerton, CA 92831
6. Project Director Name: Maria Dela Cruz  Title: Project Director
   Ph #: 657-278-4601  Fax #: 
   Email Address: mvdelacruz@fullerton.edu

Reporting Period Information

7. Reporting Period: From: 10/01/2013 To: 09/30/2014

Budget Expenditures (To be completed by your Business Office.)

8. Budget Expenditures:

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<tr>
<td>c. Entire Budget Period (For Final Performance Reports only)</td>
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Indirect Cost Information (To be completed by your Business Office.)

9. Indirect Costs
   a. Are you claiming indirect costs under this grant? No
   b. If yes, do you have an Indirect Cost Rate Agreement approved by the Federal Government?
   c. If yes, provide the following information:
      Period Covered by the Indirect Cost Rate Agreement: From: To: 
      Approving Federal agency: ED Other (Please specify): 
      Type of Rate: 
      (For Final Performance Reports only)
   d. For Restricted Rate Programs (check one) -- Are you using a restricted indirect cost rate that: 
      Is included in your approved Indirect Cost Rate Agreement? 
      Complies with 34 CFR 76.564(c)(2)?

Human Subjects (Annual Institutional Review Board (IRB) Certification)

10. Is the annual certification of Institutional Review Board (IRB) approval attached? N/A

Performance Measures Status and Certification

11. Performance Measures Status
   a. Are complete data on performance measures for the current budget period included in the Project Status Chart? Yes
   b. If no, when will the data be available and submitted to the Department?

12. Authorized Representative Name: Maria Dela Cruz
    Date: 01/29/2015
    Phone: 657-278-4601
    E-mail: mvdelacruz@fullerton.edu
Executive Summary

California State University, Fullerton (CSUF) and its partner community colleges, Citrus, Cypress and Santiago Canyon Colleges have implemented the (STEM)2 – Strengthening Transfer Education & Matriculation in Science, Technology, Engineering, Math program. This five-year grant project is designed to encourage students into the STEM fields at the community colleges, produce more STEM transfers to four-year institutions and ultimately, increase the number of Hispanic and low-income students attaining STEM baccalaureates. Program highlights for year three of the grant (October 2013 to September 2014) is as follows with details in the accompanying Project Status Charts.

Peer Mentors & Community College Workshops

Community College workshops were aimed to help students navigate through the transfer process and be a successful STEM student. The Peer Mentors led workshops at the three partner community colleges, Citrus, Cypress and Santiago Canyon. A few of the workshops the Peer mentors presented in year 3 of the grant were titled, “Summer Research: Unfolding your Interests”, “STEM Orientation” and “Networking and Professionalism.”

Peer Mentors & Campus/Community Outreach

The Peer Mentors were engaged in a variety community and campus outreach activities this past year. The Peer Mentors assisted with the CSUF Tucker Wildlife Sanctuary “Bat Night” in October 2013 and “Summerfest 2014” in June 2014. Both of these events are large community outreach events for CSUF and exposes families and the community in exploring the environment. Also in October 2013, the Peer Mentors participated in the “Youth Leadership Summit for Math and Science” on the CSUF campus by providing information regarding the STEM fields. In addition, the Peer Mentors were involved in the campus outreach activity called “CSUF Welcome Day” in April 2014. This is an open house event for all prospective students. The Peer Mentors worked in promoting the Colleges of Natural Sciences and Mathematics (NSM) and Engineering and Computer Science (ECS) and assisting students in the transfer process.

California Education Planner

California Education Planning (CEP) is an information technology system that provides the infrastructure for alignment and management of courses and facilitates the tracking of students transferring from the community colleges to CSUF. CSU Chancellor’s Office and CSUF Office of Information Technology are contracted with the grant to design and produce CEP. In year three of the grant, each community college has now utilized CEP on their campus and STEM advisors have built student education planners for their STEM students. In year 4 of the grant, we are piloting student usage of CEP.

Summer Research Experience (SRE) 2014

In year three, 39 students from the partner community colleges were paired with 19 CSUF Faculty for an 8-week research program. The students attended various workshops, events and academic support activities throughout the program. The students were also paired with CSUF Peer Advisors who meet one-on-one once a week to discuss attaining the qualities and triumphs of research. At the end of the 8 weeks, all 39 SRE students submitted a paper and poster and presented at the CSUF STEM Research Symposium. CSUF Faculty attended this symposium along with family members of the SRE students and Community College staff, faculty and administrators.

SRE 2012 group (year one of the grant) had 25 students and it is quite notable that 100% have transferred to four-year universities. In addition, SRE 2013 & 2014, had over 51% Hispanic students participated in the program. Based on academic data, all those who participated in Summer Research Experience program and transferred to CSUF excelled academically (Dean’s List, 3.0 gpa and higher) than the general STEM transfer class after their first semester. Also the SRE group persisted in the STEM major higher than the general STEM transfer class.

Transfer Orientation Programs

Incoming transfer students from the partner community colleges were funded to participated in the mandatory CSUF Transfer Student Orientation (TSO) whereby the STEM students received major advising from faculty from the Colleges of Natural Sciences and Mathematics and Engineering and Computer Science. The Family Day for STEM Transfer Students occurred on Saturday, August 16, 2014. Family Day was an orientation program for incoming STEM transfer students and their family members. At this event, participants attended sessions that included life management skills, student and parent panels and laboratory tours.

Transition Programs

The Academic Transition Program (ATP) continued in year three of the grant with Summer 2014 having 61 incoming STEM transfer students participating in a Summer Transition Program, an increase of 15 students from year two. A two-day summer orientation to expose the students to CSUF resources and opportunities as well as develop a support community among themselves begins the student’s participation in ATP. During the academic year, ATP students received a stipend for their participation in the program. The goals of ATP are to assist the STEM transfer students with their transition to CSUF and to make them aware of support programs and resources on campus. The program provides students with tools and advice needed in order to be successful in their major. ATP requires transfer students to get involved on campus through student clubs or organizations.

Based on academic data, all those who participated in Academic Transition Program in year three of the grant excelled academically (Dean’s List, 3.0 gpa and higher) than the general STEM transfer class after their first semester. Also the ATP group persisted in the STEM major higher than the general STEM transfer class.

Transfer Resource Center

The grant provided major funding of a STEM Transfer Student lounge named the Transfer Resource Center (TRC). The TRC provides students with an open space to study, take a break between classes and to use laptops with Internet access. The TRC also houses the Peer Mentors who help transfer students achieve their academic and career goals with referrals to campus resources. The TRC opened Fall 2012 and has seen a 63% increase of usage from year 2 to year 3 of the grant. In both years, over 90% of students utilizing the Center were upperclassmen (Junior standing and above) and in year three of the grant, 45% of those students were Hispanic.

Early Warning System @ CSUF

Transfer students majoring in STEM fields often have difficulty navigating and successfully passing certain STEM courses. An Early Warning System (EWS) to identify students who need assistance in these courses was been designed. Mr. Sam Barrozo (Academic Transition Coordinator) worked closely with Associate Deans from the Colleges of Natural Sciences and Mathematics (NSM) and Engineering and Computer Sciences (ECS), Drs. Mark Filowitz and Susamma Barua, in identifying targeted gateway STEM classes. Mr. Barrozo advised 11% more students in EWS from Spring 2013 to Spring 2014. In addition, Mr. Barrozo worked closely with the College of NSM academic probation program with specifically advising the transfer students to continue to assist STEM transfer students.

Grant Management & Promotion

The (STEM)2 Collaboration Council consisting of at least two representatives from the Community College partners, leadership from CEP, CSUF Project Staff, NSM and ECS Administrators, External Evaluator and Principal Investigators, Drs. Jose Cruz and Bereneecia Eanes, continue to serve as the advisory board for the grant. In year three of the grant, the Collaboration Council met in December, April and August to provide project updates and grant oversight. At the start of year three, two (STEM)2 ECS Administrators, External Evaluator and Principal Investigators, Drs. Jose Cruz and Bereneecia Eanes, continue to serve as the advisory board for the grant.

To stay abreast of the education trends for the Hispanic STEM transfer population, the (STEM)2 staff attended professional conferences. Dr. Maria Dela Cruz, Project Manager, attended the Hispanic Association of Colleges & Universities (HACU) conference in October 2013 while Mr. Felipe Salazar attended Latino Education & Advocacy Days (LEAD) Conference in March 2014. Dr. Dela Cruz along with Mr. Sam Barrozo attended the Institute for Equity, Effectiveness and Excellence at Hispanic Serving Institutions Conference in October 2013 and Annual Conference of the National Institute for the Study of Transfer Students in February 2014.

Dr. Maria Dela Cruz, Mr. Sam Barrozo and Ms. Yanet Garcia (STEM)2 Program Director from Cypress College presented at the annual conference of Alliance of Hispanic Serving Institution Educators (AHSIE) in La Verne, California in March 2014. The title of their presentation was “(STEM)2 – Strengthening Transfer Education & Matriculation in Science, Technology, Engineering, Math”. In addition, Dr. Dela Cruz was elected to the AHSIE Council in March 2014 and will serve a three-year term. Dr. Maria Dela Cruz, Mr. Sam Barrozo and Mr. Felipe Salazar at the CSUF Student Affairs conference promoted the grant with a presentation title "Creating a Transfer Receptive Culture: (STEM)2 Model."
Section A: Performance Objectives

Project Objective: The (STEM)² project will result in a 20% increase in the number of Hispanic or low-income students who receive CSUF STEM degrees by year five.

Check if this is a status update for the previous budget period.

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<th>Measure Type</th>
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Explanation of Progress (Include qualitative data and data collection information)

The Year 1 baseline data for the number Hispanic or low-income students earning CSUF STEM degrees in Spring 2012 was 140. In Year 3, the number from Spring 2014 is 174, which is an 8.75% increase from Year 2 to Year 3 and 103.5% of the Year 5 target. In Year 2, the number from Spring 2013 is 160, which is a 14.28% increase from Year 1 to Year 2 and 95.24% of the Year 5 target. In Fall 2012, the number of Hispanic or low-income students earning CSUF STEM degrees was 50. This number will be tracked as an additional data point for future years of the project.
Project Objective: The (STEM)² project will result in a 10% increase in the number of full-time degree seeking undergraduates enrolled at CSUF by year five. The (STEM)² project will result in a 10% increase in the number of STEM full-time degree-seeking undergraduates enrolled at CSUF by year five.

Check if this is a status update for the previous budget period.

<table>
<thead>
<tr>
<th>Performance Measure</th>
<th>Measure Type</th>
<th>Quantitative Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Change in enrollment annually - CSUF enrollment data Year 3 - 100%</td>
<td>Project</td>
<td>Raw Number</td>
</tr>
<tr>
<td></td>
<td></td>
<td>28579</td>
</tr>
<tr>
<td>Change in STEM student enrollment annually - CSUF enrollment data</td>
<td>Project</td>
<td>Raw Number</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4206</td>
</tr>
</tbody>
</table>

Explanation of Progress (Include qualitative data and data collection information)
The Year 1 baseline data for number of ALL full-time degree-seeking undergraduates enrolled at CSUF in Spring 2012 was 25,981 with 3,842 of these students in STEM majors. In Year 3, the number from Spring 2014 is 24,064, which is a 2% increase from Year 2 to Year 3 and 84.2% of the Year 5 target. In Year 2, the number from Spring 2013 is 23,590, which is a 9.20% decrease from Year 1 to Year 2 and 82.54% of the Year 5 target. The Year 1 baseline data for number of STEM full-time degree-seeking undergraduates enrolled at CSUF in Spring 2012 was 3,824. In Year 3, the number from Spring 2014 was 4,002, which is a 14.27% increase from Year 2 to Year 3 and 95.1% of the Year 5 target. In Year 2, the number from Spring 2013 was 3,502, which is an 8.42% decrease from Year 1 to Year 2 and 83.26% of the Year 5 target. These enrollment decreases were caused by statewide budget and enrollment limitations that the university was required to follow. The overall proportion of full-time degree-seeking undergraduates who are STEM majors has increased steadily from 14.71% in Year 1 to 14.84% in Year 2 and now 16.63% in Year 3. Every effort will be made to realize targets by Year 5.
Project Objective: The (STEM)2 project will result in a 10% increase in the number of first-time, full-time degree seeking undergraduate students who were in their first year of postsecondary enrollment in the previous year and are enrolled in the current year at the same institution by year five.

Check if this is a status update for the previous budget period.

<table>
<thead>
<tr>
<th>Performance Measure</th>
<th>Measure Type</th>
<th>Quantitative Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Changed in persistence annually - CSUF persistence data</td>
<td>Project</td>
<td>Target Actual Performance Data</td>
</tr>
<tr>
<td></td>
<td>Raw Number</td>
<td>Ratio % Raw Number Ratio %</td>
</tr>
<tr>
<td></td>
<td>3969</td>
<td>3995</td>
</tr>
<tr>
<td>Changed in persistence annually - Citrus College persistence data</td>
<td>Project</td>
<td>Target Actual Performance Data</td>
</tr>
<tr>
<td></td>
<td>263</td>
<td>215</td>
</tr>
<tr>
<td>Changed in persistence annually - Cypress College persistence data</td>
<td>Project</td>
<td>Target Actual Performance Data</td>
</tr>
<tr>
<td></td>
<td>106</td>
<td>137</td>
</tr>
<tr>
<td>Changed in persistence annually - Santiago Canyon College data</td>
<td>Project</td>
<td>Target Actual Performance Data</td>
</tr>
<tr>
<td></td>
<td>205</td>
<td>76</td>
</tr>
</tbody>
</table>

Explanation of Progress (Include qualitative data and data collection information)

The Year 1 baseline data for the number of first-time, full-time degree-seeking undergraduates at CSUF students who were in their first year of postsecondary enrollment in the previous year and are enrolled in the following year at CSUF in Spring 2013 was 3,609. In Year 3, the number from Spring 2014 is 3,995, which is a 2.12% increase from Year 2 to Year 3 and 100.6% of the Year 5 target. In Year 2, the number from Spring 2013 is 3,912, which is an 8.39% increase from Year 1 to Year 2 and 98.56% of the Year 5 target. For the three community colleges, the Year 1 baseline data for number of first-time, full-time degree-seeking under-graduates who were in their first semester of enrollment in Spring 2011 and are enrolled in the following year at the same community college in Spring 2012 (second year community college students who attended the same community college in their first year) was 239 at Citrus CC, 97 at Cypress CC, and 187 at Santiago Canyon CC. In Year 3, the number from Spring 2014 is 215 at Citrus CC, 137 at Cypress CC, and 76 at Santiago Canyon CC, which is 81.7%, 129.2%, and 36.9% of the Year 5 target, respectively. In Year 2, the number from Spring 2013 is 190 at Citrus CC, 146 at Cypress CC, and 218 at Santiago Canyon CC, which is 72.2%, 137.7%, and 106.3% of the Year 5 target, respectively. From Year 1 to Year 2, the raw number at Citrus College decreased because of smaller cohort size, but the persistence rates from Year 1 to Year 2 are similar (54.07% to 54.4%). In Year 3, Santiago Canyon College used a new data system to obtain the numbers so they may not be comparable to previous years.
Project Objective: The (STEM)2 project will result in the development and implementation of eight STEM transfer degrees by project year five between CSUF and collaborating community colleges.

Check if this is a status update for the previous budget period.

<table>
<thead>
<tr>
<th>Performance Measure</th>
<th>Measure Type</th>
<th>Quantitative Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Degrees developed and implemented. Change in STEM transfer articulation agreements.</td>
<td>Project</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Raw Number Ratio %</td>
</tr>
<tr>
<td></td>
<td></td>
<td>8 / 5 5 / 8 63 %</td>
</tr>
</tbody>
</table>

**Explanation of Progress (Include qualitative data and data collection information)**

The Student Transfer Achievement Reform Act (SB1440) enables the California Community Colleges and California State University (CSU) to collaborate on creation of Associate in Arts (AA) and Associate in Science (AS) Degree transfer programs. This law requires community colleges to grant an associate degree for transfer to a student once a student has met specified general education and major requirements for the degree. Upon completion of the associate degree, the student is eligible to transfer with junior standing into the CSU system. Transfer Model Curriculum (TMC) also know as Transfer Articulation Agreements have been established between CCC and CSU in the following 5 STEM disciplines – Chemistry, Geology, Physics, Computer Science and Mathematics. Biology is under review by Faculty Discipline Review group is anticipated to be approved February 2015. While Engineering model curriculum has been developed and is going through the vetting process.
Project Objective: The (STEM)² project will result in an increase of 40 transfer students, primarily Hispanic and low-income, annually who eventually earn STEM baccalaureate degrees at CSUF (equal to approximately halving the first-year dropout rest of STEM transfers).

Check if this is a status update for the previous budget period.

<table>
<thead>
<tr>
<th>Performance Measure</th>
<th>Measure Type</th>
<th>Quantitative Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Change in STEM transfers annually - CSUF Transfer data</td>
<td>Project</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Target</td>
<td>Actual Performance Data</td>
</tr>
<tr>
<td></td>
<td>Raw Number</td>
<td>Raw Number</td>
</tr>
<tr>
<td></td>
<td>Ratio</td>
<td>Ratio</td>
</tr>
<tr>
<td></td>
<td>%</td>
<td>%</td>
</tr>
<tr>
<td></td>
<td>1365</td>
<td>1208</td>
</tr>
</tbody>
</table>

Explanation of Progress (Include qualitative data and data collection information)

The Year 1 baseline data for the number of STEM transfer students enrolled as CSUF undergraduates in Spring 2012 was 1,325. In Year 3, the number from Spring 2014 is 1,380, which is a 14.23% increase from Year 2 to Year 3 and 101% of the Year 5 target. In Year 2, the number from Spring 2013 is 1,208, which is a 8.83% decrease from Year 1 to Year 2 and 88.49% of the Year 5 target. This decrease was caused by statewide budget and enrollment limitations that the university was required to follow. Every effort will be made to realize targets by Year 5. In Fall 2012, the number was 1,325. This number will be tracked as an additional data point for future years of the project.
Project Objective: An information technology infrastructure is completed and maintained on four college campuses to support students graduating with a 2+2(3) model by year five of the project while providing accurate student data on enrollment, persistence and completion for tracking and effective advising. Implement the College Education Planner (CEP) model system at the partner community colleges.

Check if this is a status update for the previous budget period.

<table>
<thead>
<tr>
<th>Performance Measure</th>
<th>Measure Type</th>
<th>Quantitative Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>IT/California Education Planner (CEP) infrastructure implemented and utilized at community colleges. See qualitative data below.</td>
<td>Project</td>
<td>Raw Number</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ratio</td>
</tr>
<tr>
<td></td>
<td></td>
<td>%</td>
</tr>
</tbody>
</table>

Explanation of Progress (include qualitative data and data collection information)

For year one of the grant, Santiago Canyon College (SCC) was chosen to be first to implement CEP on their campus. SCC STEM counselors and administrators had met numerous times with the CEP staff to insure implementation. In addition, CEP staff held a training session at CSUF for all partner community colleges in early September 2012 for phase one of CEP. In year two of the grant, all three community colleges utilized CEP in developing student educational plans. The development to student educational plans on all three community colleges continued in Year 3 of the grant. In addition, Year 3 meetings were held to discuss adding more components to CEP such as time management chart for student usage and a proposed timeline to pilot student usage in Year 4 of the grant.
Project Objective: Provide Supplemental Instruction workshops in all gatekeeper courses at each of the community colleges to achieve a 10% increase in pass rate.

Check if this is a status update for the previous budget period.

<table>
<thead>
<tr>
<th>Performance Measure</th>
<th>Measure Type</th>
<th>Quantitative Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of gatekeeper course sections - Citrus College data</td>
<td>Project</td>
<td>Target Raw Number</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Target Ratio %</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Actual Performance Data Raw Number</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Actual Performance Data Ratio %</td>
</tr>
</tbody>
</table>

| Number of gatekeeper course sections - Cypress College data | Project      | Target Raw Number                  |
|                                                          |              | Target Ratio %                     |
|                                                          |              | Actual Performance Data Raw Number |
|                                                          |              | Actual Performance Data Ratio %    |

| Number of gatekeeper course sections - Santiago Canyon College data | Project      | Target Raw Number                  |
|                                                          |              | Target Ratio %                     |
|                                                          |              | Actual Performance Data Raw Number |
|                                                          |              | Actual Performance Data Ratio %    |

| Number of participating students - Citrus College          | Project      | Target Raw Number                  |
|                                                          |              | Target Ratio %                     |
|                                                          |              | Actual Performance Data Raw Number |
|                                                          |              | Actual Performance Data Ratio %    |

| Number of participating students - Cypress College         | Project      | Target Raw Number                  |
|                                                          |              | Target Ratio %                     |
|                                                          |              | Actual Performance Data Raw Number |
|                                                          |              | Actual Performance Data Ratio %    |

| Number of participating students - Santiago Canyon College | Project      | Target Raw Number                  |
|                                                          |              | Target Ratio %                     |
|                                                          |              | Actual Performance Data Raw Number |
|                                                          |              | Actual Performance Data Ratio %    |

Explanation of Progress (Include qualitative data and data collection information)

For the three community colleges, the Year 1 baseline data for the number of supplemental instruction course sections for STEM gateway courses offered at the community college in Spring 2012 was 23 at Citrus CC, 15 at Cypress CC, and 11 at Santiago Canyon CC and the number of students enrolled in gatekeeper courses was 789 at Citrus CC, 247 at Cypress CC, and 408 at Santiago Canyon CC. In Year 2, Citrus CC had 37 SI courses with 1,717 students in Fall 2012 and 45 SI courses and 1,991 students in Spring 2013. In Year 2, Cypress CC had 8 SI courses with 285 students in Fall 2012 and 13 SI courses and 432 students in Spring 2013. In Year 2, Santiago Canyon CC had 39 SI courses with 1,022 students in Fall 2012 and 40 SI courses and 989 students in Spring 2013. In Year 3, the number of supplemental instruction course sections for STEM gateway courses offered at the community college in Spring 2014 was 45 at Citrus CC, 58 at Cypress CC, and 19 at Santiago Canyon CC and the number of students enrolled in gatekeeper courses was 1,656 at Citrus CC, 1,818 at Cypress CC, and 612 at Santiago Canyon CC. Each community college has implemented supplemental instruction for STEM gateway courses. The data for Cypress College reflect data for SI courses supported by the (STEM)2 grant. The data for Citrus College reflect the courses supported by two different US DOE Title 3 grants, (STEM)2 and Race to STEM that are working together to support students at this institution. The data for Santiago Canyon College reflect all SI courses offered except algebra. In Year 3, the data for Cypress College reflects all SI courses, rather than reporting data SI funded by the grant in previous years.
Project Objective: Create peer STEM cohort communities at community colleges to build peer learning communities and social support.

Check if this is a status update for the previous budget period.

<table>
<thead>
<tr>
<th>Performance Measure</th>
<th>Measure Type</th>
<th>Quantitative Data</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Target</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Raw Number</td>
</tr>
<tr>
<td>Student participation - number of students in Citrus College cohort communities</td>
<td>Project</td>
<td>/</td>
</tr>
<tr>
<td>Student participation - number of students in Cypress College cohort communities</td>
<td>Project</td>
<td>/</td>
</tr>
<tr>
<td>Student participation - number of students in Santiago Canyon College cohort communities</td>
<td>Project</td>
<td>/</td>
</tr>
</tbody>
</table>

Explanation of Progress (Include qualitative data and data collection information)

All community college campuses have planned and implemented (STEM)2 cohort communities and activities to help student plan for STEM careers, the transfer process and to link them with opportunities at CSUF. In Year 3, Citrus CC enrolled 485 additional members in the STEM cohort community for a total of 983. In Year 3, Cypress CC had 127 students in the STEM cohort community. In Year 3, Santiago Canyon CC had 168 students in the STEM cohort community in Fall 2013 and 247 in Spring 2014. In Year 2, Citrus CC had 261 students in the STEM cohort community in Fall 2012 and 432 in Spring 2013. In Year 2, Cypress CC had 50 students in the STEM cohort community in Fall 2012 and 69 in Spring 2013. In Year 2, Santiago Canyon CC had 93 students in the STEM cohort community in Fall 2012 and 148 in Spring 2013. Each institution, Citrus College, Cypress College, and Santiago Canyon College as well as CSUF have implemented efforts to create STEM cohort communities at their institutions that are organized around peer learning communities and provide social support for STEM students. The community colleges, and CSUF, all have STEM advisors/counselors dedicated to (STEM)2 efforts, have implemented workshops for STEM students, and have welcomed CSUF peer mentors to mentor community college students at their campuses. At the same time, the specific mechanisms for supporting students at each institution have been tailored to the campus culture, taking different approaches to building the cohort community on their campuses. (For more information about the activities and outcomes at each campus, please see the evaluation summary.)
Project Objective: A. Develop and implement a mandatory in-person transfer orientation program for STEM student at CSUF to advise of the resources available, prepare them for the faster pace of coursework and strategies to succeed. B. Implement a policy making STEM advising mandatory for students planning to transfer to STEM programs at CSUF.

Check if this is a status update for the previous budget period.

<table>
<thead>
<tr>
<th>Performance Measure</th>
<th>Measure Type</th>
<th>Quantitative Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>90% of eligible students participate in the program each summer (see qualitative data below - 100% participation is achieved due to mandatory STEM advising)</td>
<td>Project</td>
<td></td>
</tr>
</tbody>
</table>

**Explanation of Progress (Include qualitative data and data collection information)**

It is University policy for all incoming transfer students to participate in mandatory advising. In addition, the Colleges of Natural Sciences and Mathematics and Engineering and Computer Science majors are required to participate in mandatory in-person faculty advising. The students are also advised of resources available to help them succeed as STEM majors via the other orientation programs such as STEM Family Day and Academic Transition Program Welcome Days during summer and spring.
Project Objective: Implement a summer research experience with a stipend at CSUF for community college students in each year of the project, to introduce them to research opportunities and faculty mentors.

Check if this is a status update for the previous budget period.

<table>
<thead>
<tr>
<th>Performance Measure</th>
<th>Measure Type</th>
<th>Quantitative Data</th>
</tr>
</thead>
</table>

**Explanation of Progress (Include qualitative data and data collection information)**

The eight-week summer research program in Summer 2014 supported 39 community college students from the three partner community colleges. Each student was assigned to a research project working under the direction of one of 19 CSUF STEM faculty members, with the support of graduate students and (STEM)2 peer advisors. The program began with a one-week orientation program that introduced the students to the CSUF community, to the research, and to each other. The orientation program included ice breaker activities, safety training, workshop introducing students to the lab setting, a scavenger hunt campus tour, and a reception with faculty and research teams at the Associate Dean and (STEM)2 Co-PIs residence. Throughout the program, the students participated in workshops to help them develop their skills as research scholars and to become more aware of opportunities and careers in STEM. A culminating event and poster session was held at the end of the program to feature the students' research and recognize their accomplishments. (Please see evaluation summary for highlights of the evaluation of the summer program.)
Project Objective: Create a Family Day with Natural Sciences and Mathematics and Engineering and Computer Science Departments.

Check if this is a status update for the previous budget period.

<table>
<thead>
<tr>
<th>Performance Measure</th>
<th>Measure Type</th>
<th>Quantitative Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Family Day created and attended by 50% of eligible students and their family members.</td>
<td>Project</td>
<td>Target</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Raw Number</td>
</tr>
<tr>
<td></td>
<td></td>
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</tbody>
</table>

Explanation of Progress (Include qualitative data and data collection information)

The Family Day for STEM Transfer Students occurred on Saturday, August 16, 2014. Family Day is an orientation program for incoming STEM transfer students and their family members. At this event, participants attended sessions that include time management skills, student and parent panels and tour of laboratories. In year one of the grant, 20% participation occurred while in year two, there was a 26% participation rate. In Year 3 of the grant, the participation rate increased slightly to 28%. The minimal increased participation could be attributed to a new academic year STEM Family Day we developed during spring semester, which yielded 117 participants and occurred 4 months prior to the summer Family Day.
Project Objective: A. The (STEM)2 project will result in a 10% increase of first-time, full-time degree seeking undergraduate students enrolled at four-year HSIs graduating within six years of enrollment. B. The (STEM)2 project will result in a 10% increase of first-time full time STEM degree seeking undergraduate students enrolled at four-year HSIs graduating within six years of enrollment.

Check if this is a status update for the previous budget period.

<table>
<thead>
<tr>
<th>Performance Measure</th>
<th>Measure Type</th>
<th>Quantitative Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Change in time to graduation annually - CSUF graduation data Year 3 - 100% on target</td>
<td>Project</td>
<td>Target Data</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Raw Number</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1436</td>
</tr>
<tr>
<td>Change in time to graduation annually - CSUF STEM graduation data. Year 3 - increase of 8.3%, with 100% on target</td>
<td>Project</td>
<td>Target Data</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Raw Number</td>
</tr>
<tr>
<td></td>
<td></td>
<td>120</td>
</tr>
</tbody>
</table>

Explanation of Progress (Include qualitative data and data collection information)
The Year 1 baseline data for the number of first-time, full-time undergraduates enrolled at CSUF who graduated in Spring 2012, within 6 years of their first enrollment was 1,306. In Year 2, the number from Spring 2013 is 1,532, which is a 17.3% increase from Year 1 to Year 2 and 106.68% of the Year 5 target. In Year 3, the number from Spring 2014 is 1,527, which is a 3.26% decrease from Year 2 to Year 3 but still a 16.9% increase from Year 1 to Year 3 and 106.33% of the Year 5 target. The Year 1 baseline data for the number of STEM first-time, full-time undergraduates enrolled at CSUF who graduated in Spring 2012, within 6 years of their first enrollment was 109. In Year 3, the number from Spring 2014 is 119, which is a 9.17% increase from Year 1 to Year 2 and 99.16% of the Year 5 target. In Year 2, the number from Spring 2013 is 119, which is a 9.17% increase from Year 1 to Year 2 and 99.16% of the Year 5 target. In Fall 2012, the number for all majors was 523 and for STEM majors was 32. These numbers will be tracked as an additional data point for future years of the project.
Project Objective: The (STEM)2 project will result in a 10% increase in the number of first-time, full-time degree seeking undergraduate students enrolled at two-year HSI graduating within three years of enrollment, by year five.

Check if this is a status update for the previous budget period.

<table>
<thead>
<tr>
<th>Performance Measure</th>
<th>Measure Type</th>
<th>Quantitative Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Change in time to graduation annually - Citrus College graduation data - Year 3 100% on target</td>
<td>Project</td>
<td>Raw Number</td>
</tr>
<tr>
<td></td>
<td></td>
<td>176</td>
</tr>
<tr>
<td>Change in time to graduation annually - Cypress College graduation data - Year 3 100% on target</td>
<td>Project</td>
<td>Raw Number</td>
</tr>
<tr>
<td></td>
<td></td>
<td>110</td>
</tr>
<tr>
<td>Change in time to graduation annually - Santiago Canyon College graduation data - Year 3 100% on target</td>
<td>Project</td>
<td>Raw Number</td>
</tr>
<tr>
<td></td>
<td></td>
<td>58</td>
</tr>
</tbody>
</table>

Explanation of Progress (Include qualitative data and data collection information)

The above reported data reflect the number of first-time, full-time community college students who graduated in Spring 2012, within 3 years of their first enrollment. These are baseline data that have been used to establish the targets for Year 5. For the three community colleges, the Year 1 baseline data for the number of first-time, full-time community college students who graduated in Spring 2012, within 3 years of their first enrollment was 160 at Citrus CC, 100 at Cypress CC, and 53 at Santiago Canyon CC. In Year 3, the number from Spring 2014 is 184 at Citrus CC, 174 at Cypress CC, and 89 at Santiago Canyon CC, which is an 15%, 74%, and 68% increase from Year 2 to Year 3 and 104.5%, 158%, and 153% of the Year 5 target, respectively. In Year 2, the number from Spring 2013 is 168 at Citrus CC, 156 at Cypress CC, and 121 at Santiago Canyon CC, which is an 5%, 56%, and 128% increase from Year 1 to Year 2 and 95.4%, 141%, and 208% of the Year 5 target, respectively.
Project Objective: Provide STEM Advisors in each of the three partner HSI community colleges to increase specialized STEM advisement and course planning

Check if this is a status update for the previous budget period.

<table>
<thead>
<tr>
<th>Performance Measure</th>
<th>Measure Type</th>
<th>Quantitative Data</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>STEM Advisors at each community college (see list below)</strong></td>
<td>Project</td>
<td>Raw Number</td>
</tr>
<tr>
<td>Workshops or Seminars to improve knowledge of STEM careers, transfer process and link community college students with CSUF STEM research opportunities - Citrus College # of workshops</td>
<td>Project</td>
<td>Raw Number</td>
</tr>
<tr>
<td>Workshops or Seminars to improve knowledge of STEM careers, transfer process and link community college students with CSUF STEM research opportunities - Cypress College # of workshops</td>
<td>Project</td>
<td>Raw Number</td>
</tr>
<tr>
<td>Workshops or Seminars to improve knowledge of STEM careers, transfer process and link community college students with CSUF STEM research opportunities - Santiago Canyon College # of workshops</td>
<td>Project</td>
<td>Raw Number</td>
</tr>
<tr>
<td>Workshops or Seminars to improve knowledge of STEM careers, transfer process and link community college students with CSUF STEM research opportunities - Citrus College # of participants</td>
<td>Project</td>
<td>Raw Number</td>
</tr>
<tr>
<td>Workshops or Seminars to improve knowledge of STEM careers, transfer process and link community college students with CSUF STEM research opportunities - Cypress College # of participants</td>
<td>Project</td>
<td>Raw Number</td>
</tr>
<tr>
<td>Workshops or Seminars to improve knowledge of STEM careers, transfer process and link community college students with CSUF STEM research opportunities - Santiago Canyon College # of participants</td>
<td>Project</td>
<td>Raw Number</td>
</tr>
</tbody>
</table>

**Explanation of Progress (include qualitative data and data collection information)**

All three community colleges have (STEM)2 advisors who provide specialized STEM transfer counseling sessions, collaborate with the (STEM)2 Mentor/Outreach Coordinator and (STEM)2 Peer Mentors to facilitate STEM Transfer and Career Workshops. The (STEM)2 advisor Phil Crabill at Santiago Canyon College, Yanet Garcia at Cypress College, Debbie Boudreau (all year), Emily Versace (out fall term), and Leo Pastrana (fall only) at Citrus College provided these services. All campuses have planned and implemented a series of (STEM)2 workshops to help student plan for STEM careers. In Year 3, Citrus CC had 7 workshops with 604 participants. In Year 3, Cypress CC had 22 events/workshops with 500 attendees participants across all events. In Year 3, Santiago Canyon CC had 5 workshops with 88 participants in Fall 2013 and 5 workshops with 320 participants in the Spring 2014. In Year 2, Citrus CC had 20 workshops with 363 participants in Fall 2012 and 16 workshops with 504 participants in the Spring 2013. In Year 2, Cypress CC had 7 workshops with 443 participants in Fall 2012 and 6 workshops with 280 participants in the Spring 2013. In Year 2, Santiago Canyon CC had 4 workshops with 119 participants in Fall 2012 and 7 workshops with 125 participants in the Spring 2013.
Project Objective: Create and implement an Early Warning System (EWS) to identify students who are at potential for academic distress in key gateway course at CSUF

Check if this is a status update for the previous budget period.

<table>
<thead>
<tr>
<th>Performance Measure</th>
<th>Measure Type</th>
<th>Quantitative Data</th>
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<tr>
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**Explanation of Progress (Include qualitative data and data collection information)**

An Early Warning System (EWS) to identify students who are at potential for academic distress in key STEM gateways courses at the CSUF campus was created. Year one of the grant was used for Project Staff to be trained on utilizing the system. EWS began in Spring 2013 with Mr. Barrozo working closely with Associate Deans from the Colleges of Natural Sciences and Mathematics (NSM) and Engineering and Computer Sciences (ECS), Drs. Mark Filowitz and Susamma Barua in identifying the key gateway STEM classes. In Spring 2013, 33% of students designated for advising came in for counseling sessions. In Fall 2013 (Year 3 of the grant), 42% of students designated for advising participated while in Spring 2014 the numbers continued to increase to 48% of students designated coming in for counseling. From Spring 2013 to Spring 2014, there was an 11% increase in student participation in EWS.
Section B: Budget Information
There is an $125,144 carry forward with $57,772 going back to the subcontractors (partner community colleges). They had carry forward due to personnel changes at their campuses. The remainder of the carry forward will be utilized at CSUF Fullerton to make up the 4.23% budget cut received for Year 4 of the grant. There are no anticipated changes in the budget for the next budget period that require prior approval from the Department.

Section C: Additional Information
CSUF (STEM)² HSI Evaluation Summary - Year 3 Annual Report
This Year 3 evaluation summary highlights the third-year findings from the CSUF Strengthening Transfer Education & Matriculation in STEM (STEM)² project. This ongoing evaluation is monitoring progress toward program objectives, indicators of progress, and process objectives, using a comprehensive approach with quantitative and qualitative methods. The external evaluator Dr. Karen Kim works closely with the (STEM)² project director Dr. Maria DeLa Cruz and staff to ensure that all program components are evaluated and to provide feedback on the (STEM)² program.

Analysis of Institutional Data
Each (STEM)² partnering institution has provided data to track the program objectives with regard to graduation rates, enrollments, persistence, supplemental instruction attendance, STEM advising, and data related to the specific components of the (STEM)² program. Institutional partners have been highly supportive of this process and are gaining insights from reviewing their own institutional data. The Year 3 baseline data with progress toward Year 5 goals are reported in the Annual Report Template.

Evaluation of (STEM)² Project Components
Data collection methods evaluate each of the (STEM)² program components, including CSUF Summer Research Experience, CSUF Academic Transition Program, transfer orientation programs, community college cohort community activities, the California Education Planner, and the overall partnership.

CSUF Summer Research Experience (SRE)
The comprehensive evaluation of the SRE program includes pre/post student surveys and focus groups, journal reflections, mentor surveys, and participant observation. The findings show that the program staff implemented a highly effective program, making positive improvements on the recommendations the previous years related to the writing workshops and holding orientation programs at all three community colleges. Student data show that participating students overwhelmingly reported positive feedback about their experience in the program. One female biology major commented:

This research experience is nothing but wonderful for me. I have learned so many things that I have over looked when I take science classes. I always want to join medical field and I think lab experience is a great way for me to get closer to my goal. I even consider research might be a good choice for me in the future in case I cannot make it to medical school.

Data analysis of the pre/post surveys also indicate positive findings in the participating students’ perceptions about the program and themselves. A majority of students identified positive impacts from participating in the program, reflecting greater critical thinking, problem solving, and interpersonal skills. Paired sample t-test’s show that students’ perceived increases (i.e., significant differences at p
• Familiarity with scientific techniques and instrumentation
• Confidence in speaking with instructors about the sciences
• Interest in social sciences

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• Familiarity with scientific techniques and instrumentation
• Confidence in speaking with instructors about the sciences
• Interest in social sciences

The findings show that a majority of students (90.32%) strongly agreed that participating in the (STEM)² program will help them to pursue their goals in a STEM field and that a majority of faculty mentors (83.3%) were very satisfied with the quality of their SRE mentees, the interaction of their mentees with other researchers in the lab, and the overall SRE program. Many faculty mentors also noted the multiple benefits of the program, as one faculty member stated: “This is a great program and has led to many good students transferring to CSUF and continuing research in our areas.” Like last year, the shared appreciation of the program was especially apparent at the observed concluding poster session and awards event, which was well-attended by participating students and their families, student mentors, and staff and administrators from each of the partnering institutions. Overall, the evaluation shows that the SRE program is a central component of (STEM)² that benefits students, faculty, and each of the partnering campus.

Transfer orientation program (CSUF Family Day)
Overall findings from the evaluation of the transfer orientation programs show that content of the STEM orientations were well-received by participating students and family. Table 1 shows the survey results from the CSUF Family Day orientation:

| Table 1: Ratings of STEM orientation session (# of respondents) |
|---------------------------------|----------------------|
| Excellent Good Average Poor     | 26 7 0 0             |
| Content of the workshop         | Presentation style/format 26 9 0 0 |
| Usefulness/Application of Information 29 4 2 0 |
| Overall experience at the session 27 7 1 0 | N=35 |

Ninety-seven percent of attendees reported that the overall experience at the session was good or excellent. Incoming CSUF students listed several components of the program that will be useful for the upcoming year, including the resources available, time management, and how to avoid probation. Both students and parents most often reported that they are looking forward to “success” in the upcoming year.

CSUF Academic Transition Program (ATP)
The academic transition program evaluation includes pre/mid/post surveys of student participants and participant observation of program activities. Pre-program surveys were administered to the new cohorts in January and August 2013, providing feedback on the program orientation and the student participants. Overall, the pre-program surveys show that students had positive feedback on the orientation programs with the students most commonly identifying the following benefits from the orientations:
• Learning about the campus and its resources
• Gaining knowledge and skills needed to navigate their education (time management, library, study skills)
• Meeting new people (other students, staff, and faculty)

The Spring 2014 post-program survey findings show that a majority participating students are highly satisfied with the overall program (84% rated it excellent and 16% rated it very good) and feel that the program will help them to pursue their goals in a STEM field (62% strongly agree and 31% agree somewhat). Overall, the ATP program participants continue to be dedicated STEM students. Ninety percent of students spend at least 7 hours/week studying for STEM classes. More than 65% spend 10 hours or more studying per week, with more than 27% spending over 15 hours per week studying. Over 96% are at least “somewhat likely” to “pursue a graduate degree in STEM” and almost 90% are at least “somewhat likely” to “get involved with a STEM-related club/organization at CSUF.” A strong majority rate themselves as “above average” or “highest 10%” in “Motivation to achieve my education and career goals,” “ability to work cooperatively with others,” and “Enjoyment in studying scientific and/or technical topics.” When asked to identify three ways in which the program was most useful to you, the most frequent responses included helping to find resources on campus, networking and meeting other STEM students, peer mentor advising, being encouraged to get involved, and financial support and priority registration.

Cohort community activities
A thorough evaluation of (STEM)² activities was carried out at each of the partnering institutions. This included student surveys that were administered to CSUF STEM transfer students and STEM students at the community colleges. Overall, 160 students responded to the CSUF survey and 426 students responded to the community college survey (Citrus n=64, Cypress n=99, Santiago Canyon n=133, not identified n=30). For the CSUF survey, cross-tabulation analysis shows that 49% (71/144) heard about (STEM)² (39 participated and 32 had not yet participated); 69% of students that had participated in (STEM)² activities strongly agree or agree that (STEM)²
could help them to accomplish their goals in a STEM field. For the community college survey, cross-tabulation analysis shows that 69% (198/290) heard (STEM)² activities strongly agree or agree that (STEM)² could help them to accomplish their goals in a STEM field.

Following are highlights of the Year 3 activities at each partnering community college:

**Citrus College:** At Citrus College, the (STEM)² grant has been blended with another USDOE grant Race to STEM to create a STEM Academy. Two part-time STEM counselors, Debbie Boudreau and Emily Versace (Leo Pastrana in the fall term), served as the campus coordinators for the (STEM)² grant. (STEM)² activities included peer mentoring; workshops focused on campus involvement, STEM careers, SRE, STEM career decision making; scholarships; STEM counseling; STEM club support; and class visits promoting STEM.

**Cypress College:** At Cypress College, STEM counselor Yanet Garcia coordinated the (STEM)² program. (STEM)² activities included STEM workshops and in-class presentations. In addition, the 2st Annual Fall Research Symposium was held. In spring 2014, (STEM)² toured a variety of 4-year universities in Northern California and hosted the second Annual STEM Family Night & Transfer Celebration.

**Santiago Canyon College:** At Santiago Canyon College, in addition to STEM workshops and peer mentors working with students, the STEM Club was created; STEM Faculty Student Mentoring Program established, additional scholarship monies made available for (STEM)² students. In Spring 2014, SCC also held STEM Specialized New Student Orientations and a Summer Research Symposium.

**Monitoring of California Education Planner (CEP)**

Progress continues to be made on the CEP as evidenced by the further development of the interface and use by each of the community colleges. Feedback from the Partnership survey shows that more than 76% of responding partnership participants “strongly agree” or “agree” that (STEM)² is on track and making progress toward implementing the College Education Planning on the four college campuses.” Results from a pilot with students and counselors using the CEP at SCC conducted in Year 4 will be reported in next year’s report.

**Partnership Survey**
The (STEM)² Partnership Survey was developed, based on a validated Partnership Analysis Tool survey initially developed by the Victorian Health Promotion Foundation. The survey was sent to all of the individuals on the HSI STEM Grant Contact List, reflecting the leadership on all of the campuses for the (STEM)² grant. In analyzing preliminary survey results, 83% of respondents agree or strongly agree that the (STEM)² is “on track and making progress to increase the number of Hispanic or low-income students attaining degrees in the fields of science, technology, engineering, or mathematics.” The respondents identified several accomplishments of the grant in the first year including:

- Collaboration between CSUF and the community colleges has helped all campuses, sharing promising practices among colleagues and leading to access to additional resources and other partnerships.
- The summer research program at CSUF for students at the partnering community colleges has been particularly effective as evidenced by both student feedback and high transfer rates.
- Student peer mentor involvement at each of the institutions benefits both mentees and mentors.
- Each campus has developed support for STEM students with a variety of services including advising/counseling, workshops, and creation of cohort communities at all campuses.

Overall, the campus leaders continue to be positive about the progress in Year 3 and recognize the signs of success of the grant, as one leader commented: “It is clear that strong partnerships have been built between CSUF and [the community colleges]. The peer mentoring at [the community colleges], summer research and relationships at CSUF have proven to be productive ways to smooth the transition of [community college] students into STEM majors at CSUF.” Another leader noted that there is a “sense of shared purpose in promoting STEM education and supporting STEM students.”

When asked about the greatest accomplishments of the (STEM)² program so far, many highlighted the summer research program and the program’s positive progress in helping community college students to transfer to four-year institutions, as shown in a leaders comments, “Providing summer research experiences for community college students who do not always have access to these kinds of opportunities on their home campuses, and providing our students with a seamless transfer opportunity to CSUF while also encouraging transfer to other 4-year universities.” Another leader also echoed these sentiments noting the effectiveness of the summer research program in encouraging students to transfer to a four-year institution: “The transfer rate with students having participated in the Summer Research Experience seems to be high, and a great success. SRE appears to be the highest impact practice that we coordinate and run.” (STEM)² leaders are also looking to the key aspects of the grant that can be sustained in the long-term, including the cohort community activities, supplemental instruction, the summer research program at CSUF, and STEM-focused counselors. Many of the leaders noted that they feel supported by their own campuses, that the grant has increased collaboration on their campuses (as well as with the partnering institutions), and that they have optimism that the project goals are worthy and will be achieved. As one leader stated, (STEM)² has “been a fruitful and beneficial partnership.” Another leader noted that (STEM)² created “a partnership between a CSU and Community Colleges that benefits all campuses and their students. The Summer Research has provided a very valuable, and often life changing opportunity to our students. The benefits for students is far-reaching as another leader states that (STEM)² has increased “the visibility of participating in STEM activities and being a STEM major; exposing so many community college students to summer research opportunities [and] easing the transition from community college to the university.”

**Evaluation Recommendations**

Overall, the evaluation of the project components indicate that the project has continued to make positive progress towards its project goals, program objectives, and process objectives. All partnering institutions have implemented solid programs on their campuses that students’ find as beneficial and helping them toward their STEM goals.
2014 Annual Performance Report

ED 524B Cover Sheet

1. PR/Award #: P031C110151
2. Grantee NCES ID#: 110583
3. Project Title: HSI STEM – Sobresaliendo con Tradiciones de Exito y Motivacion (Sustaining Traditions of Excellence and Motivation)
4. Grantee Name: California State University Long Beach Foundation
5. Grantee Address: 6300 State University Drive Long Beach, CA 90815
6. Project Director Name: Eric Marinez  Title: Co-Principal Investigator
   Ph #: 562-985-7773  Fax #: 
   Email Address: eric.marinez@csulb.edu

Reporting Period Information
7. Reporting Period: From: 10/01/2013 To: 09/30/2014

Budget Expenditures (To be completed by your Business Office.)
8. Budget Expenditures:

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<td>b. Current Budget Period</td>
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<tr>
<td>c. Entire Budget Period (For Final Performance Reports only)</td>
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</table>

Indirect Cost Information (To be completed by your Business Office.)
9. Indirect Costs
   a. Are you claiming indirect costs under this grant? No
   b. If yes, do you have an Indirect Cost Rate Agreement approved by the Federal Government?
   c. If yes, provide the following information:
      Period Covered by the Indirect Cost Rate Agreement: From: To:
      Approving Federal agency: ED Other (Please specify):
      Type of Rate: 
      (For Final Performance Reports only)
   d. For Restricted Rate Programs (check one) -- Are you using a restricted indirect cost rate that:
      Is included in your approved Indirect Cost Rate Agreement? X Complies with 34 CFR 76.564(c)(2)?

Human Subjects (Annual Institutional Review Board (IRB) Certification)
10. Is the annual certification of Institutional Review Board (IRB) approval attached? N/A

Performance Measures Status and Certification
11. Performance Measures Status
   a. Are complete data on performance measures for the current budget period included in the Project Status Chart? Yes
   b. If no, will the data be available and submitted to the Department?

12. Authorized Representative Name: Eric Marinez
    Date: 01/31/2015
    Phone: 562-985-7773
    E-mail: eric.marinez@csulb.edu
Executive Summary

During this reporting period, we had a change in key personnel. Britt Rios-Ellis who served as PI left CSULB to become a Dean at CSUMB. Given that this grant formerly had four Co-PIs, the leadership team did not see the need to replace Britt Rios-Ellis. Eric Marinez, one of the 3 remaining Co-PIs took the lead and is now listed as Project Director. Proper communication with the Department of Education took place to ensure approval and smooth transition. There were also changes in project staffing. Rehiring and training took place on a timely basis to ensure continuous programming and progress towards the grant objectives.

At the end of the reporting period we received a site visit from program officer, Sarah Beaton, from the Department of Education and Deputy Assistant Secretary for Higher Education Programs, James T. Minor. It was an honor and great experience to share the successes of the HSI STEM grant at CSULB. Students and faculty involved in various components of the grant had the opportunity to share about their involvement and how the program has benefitted them. In addition, program evaluator, Gino Galvez, and data manager, Miguel Angel Ortiz-Valenzuela shared the evaluation plan, including data collection instruments and preliminary results. The 3 student-focused components, Promotores de STEM, Winter Research Experience, and Summer Bridge to The Beach had a successful year. During this reporting period, 53 students became part of the mentorship program. As of September 2014, a total of 101 mentees have participated in the program. Statistically significant increases in GPA were demonstrated among the students with pre and post GPAs (Freshmen who participate do not have a GPA when they join the program and are therefore not included in the analysis). Results indicate that the mentees' participation in the Promotores de STEM Program and the tutoring sessions played a role in their increased their term and cumulative GPA.

A total of 19 students were enrolled in the Winter Research Experience Program. All participants self-identified as Hispanic/Latino. Most of the students reported being first-generation educated within the College of Natural Sciences and Mathematics (63.2%) and from the College of Engineering (36.8%). Most of the students reported that they did not possess any prior research experience (84.2). Post participation, the majority of students (84.2%) reported that the research experience confirmed their interest in their respective fields of study. In addition, over half of the students felt that the experience prepared them for graduate school (52.7%). Overall, we found that students had a positive experience.

The Summer Bridge to The Beach Program enrolled a total of 16 incoming transfer students. The program was able to increase the number of positions available (previously 10) with carry over funds from the previous year. All participants self-identified as Hispanic/Latino and fourteen (87.5%) reported being first-generation educated. Most students (13) reported that they did not possess any prior research experience. Post program, a large percentage of participants either agreed or strongly agreed that participating in the summer program confirmed their research interests (86%), clarified their field of study (43%), and prepared them for advanced coursework (71%), graduate school (43%), and future jobs (79%).

The family event, Bienvenida (Welcome) provides Latino STEM parents and families with bilingual information intended to foster an environment that is conducive to Latino student success in STEM fields and create a sense of belonging to the university. Approximately 50 families attended the event with over 150 people in attendance, including students their parents, siblings, and grandparents. Evaluation results demonstrated that most participants walked away with a better understanding of the STEM fields, the role of a STEM student, and felt more comfortable in the university setting.

Evaluation, including data entry and tracking are ongoing. Additionally, support for SI courses and faculty development continues. Overall, the grant is on track and meeting its objectives. Changes in programming are made to ensure that students needs are met and that we stay relevant to the institutional changes at CSULB.
Section A: Performance Objectives

Project Objective: To adapt the existing Promotores de Educación peer tutoring, mentoring and advising program guidelines and further develop the curriculum to meet the specific needs of Latino students in the Colleges of Natural Sciences and Mathematics (CNSM) and Engineering (COE), thus establishing the Promotores de STEM.

Check if this is a status update for the previous budget period.

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<tr>
<th>Performance Measure</th>
<th>Measure Type</th>
<th>Quantitative Data</th>
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<tbody>
<tr>
<td>By Fall 2011, develop the Promotores de STEM guidelines, curriculum, and training.</td>
<td>GPRA</td>
<td>Raw Target Number / Actual Performance Data</td>
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<tr>
<td>By Spring 2012, advertise for, recruit, interview, and hire 10 Promotores de STEM in the CNSM and 10 in the COE.</td>
<td>GPRA</td>
<td>Raw Target Number / Actual Performance Data</td>
</tr>
<tr>
<td>By Summer 2012, train the 2 college-specific cohorts in advising, mentoring, and campus- and college-specific student services.</td>
<td>GPRA</td>
<td>Raw Target Number / Actual Performance Data</td>
</tr>
<tr>
<td>By Fall 2012, each of the 20 Promotores de STEM will have recruited 5 students from their respective disciplines for a total cohort of no less than 100 first generation-educated Latino students with 0-90 units overall or less than 30 units in their major to receive weekly subject-specific tutoring, mentorship, and linkage to needed student services and programs.</td>
<td>GPRA</td>
<td>Raw Target Number / Actual Performance Data</td>
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<tr>
<td>Each semester the mentees will demonstrate statistically significant improvements in their GPAs as measured by comparing mean pre and post GPAs across the college-specific cohorts.</td>
<td>GPRA</td>
<td>Raw Target Number / Actual Performance Data</td>
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<tr>
<td>By Spring 2013, each of the 20 Promotores de STEM will have expanded their peer mentorship load to no more than 8 students to engage a total of 160 students in weekly subject-specific tutoring, mentorship, and linkage to needed student services and programs.</td>
<td>GPRA</td>
<td>Raw Target Number / Actual Performance Data</td>
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</table>

Explanation of Progress (Include qualitative data and data collection information)

Performance measures 1a-1f were completed in the previous reporting budget period. However, recruitment continues each academic year to hire 20 first generation Latino STEM students as promotores to provide culturally relevant tutoring and mentoring. Hiring targets are based on mentee needs using institutional data. Knowing this, we hired accordingly while maintaining a board representation of the STEM field. Each cohort of promotores receives a week long rigorous training prior to the start of the fall semester. The training consists of grant and program background, data collection and management practices, presentation on academic advising and other campus services, case studies, a mentor student panel, and team leadership activities. The training is formally evaluated vis-à-vis the daily administration of questionnaires. In addition, weekly check-in meetings and refresher trainings are held throughout the program to provide technical assistance and ensure that the promotores are optimizing all opportunities for mentorship. For the current reporting period, there were 18 promotores de STEM; 13 from the College of Engineering and 5 from the College of Natural Sciences & Mathematics. Each promoter mentors 3-5 students. The pairing of a promoter and mentee depends on the promoter's mentee load, mentee needs, and majors.

Promotores and mentees meet on a weekly basis for at least one hour. Mentees commit to working with their promoter for at least one academic year or until they are successfully persisting in their major. The promotores not only mentor on a one on one basis, they also work with the Promotores Coordinator to help create a positive and fun environment for the mentees. To do this, they help coordinate and facilitate STEM socials and workshops throughout the semester with various student organizations and on campus offices (i.e. Learning Assistance Center, Career Development Center). Each semester, HSI STEM hosts “Study with a Profe” (Study with a Professor) sessions; a total of four were hosted during the reporting period. Faculty from high failure rate courses agree to provide small study group sessions and lecture notes. Mentees are encouraged to take advantage of these times to discuss course content and ask questions.

This year, representatives from Boeing Co. met with HSI STEM students to share their internship and hiring information as well as resume techniques. In addition, a group of HSI STEM students visited Raytheon where they learned about the company, hiring information, and internships.

On average, about 25 new students become mentees (matched with a promoter) every semester. The exact numbers of new students per semester were as follows: 1) Fall 2012, 25 new students became mentees; 2) Spring 2013, 23 new students became mentees; 3) Fall 2013, 40 new students became mentees; and 4) Spring 2014, 13 new students became mentees. Pre-GPA refers to mentee’s semester GPA before they started the Promotores de STEM (i.e., mentorship) Program. Post-GPA refers to the GPA earned after 1 complete semester in the Promotores de STEM Program. Typically, given when they start (e.g., middle, end, or start of semester), the amount of time in the program may be more than one semester.

The total number of mentees served to date (as of September 2014) is 101. Two t-tests were conducted to determine if differences were observed between pre- and post-GPAs. Term refers to semester GPA. Among the sample with paired data only (N = 54), Pre-GPA Term mean is 2.1 and post-GPA Term mean is 2.4. The increase in GPA is statistically significant, t(53) = -2.122, p < .05. Pre-GPA Cumulative mean is 2.4 and post-GPA Cumulative mean is 2.5. The increase in GPA is statistically significant, t(53) = -2.467, p < .05. Results indicate that the program is having a positive effect on mentee GPAs; that is, observable increases in both semester and cumulative GPAs. It is very likely that mentee participation in the Promotores de STEM Program and the tutoring sessions played a role in their increased...
Historically, mentees were identified through their grade point average as students who fell below a 2.5 GPA and were at risk for removal from their respective STEM programs. During this reporting period, the eligibility criteria for the program was modified to include freshmen students in their first semester who did not have a GPA yet, but were enrolled in pre-baccalaureate (remedial) courses. The purpose of this modification was to engage students earlier on and thus ensure successful completion of the pre-baccalaureate courses and transition to major-specific courses. CSULB became an impacted university in Fall 2013, therefore we are constantly assessing to ensure that our program is in line with the needs of the students we serve. The expansion of services to freshmen has allowed students to receive mentorship in order to successfully declare a STEM major and persist in the field.

Following every semester, an online survey is administered to all mentees regarding their experience in the program. For this report, multiple evaluations from the same mentee were not included. In total, 86 evaluations have been obtained from across the study years.

Over 80% of the respondents indicated that they planned on participating in the HSI STEM Program the following semester and 79% reported that they wanted to work with the same promotor. Overall, mentee evaluations of their promotor indicate very positive findings. Mentees rate their mentors very highly in the following areas: their mentor being consistently available, being effective in referring campus services, explaining campus services, being on time, being effective in producing useful information, and being friendly and inviting. The top five areas that mentees reported improvement on were: 1) goal setting, 2) study skills, 3) time management, 4) personal academic planning, and 5) motivation. Among 82 mentees, 94% reported that the program either met or exceeded their expectations. Very few mentees reported that the program did not meet their expectations.

Committing to a year-long program is difficult for some students, especially those who face barriers outside of school. The drop-in tutoring and mentoring office is available to students who need assistance but cannot commit or do not qualify for the mentorship program. Since its inception in Spring 2013, a total of 1,000 tutoring sessions have been conducted. Of those 1,000 sessions, 659 have been used by non-mentees and the remaining 341 sessions have been used by HSI STEM mentees. A total of 692 tutoring sessions occurred during this reporting period; 410 tutoring sessions were provided in Fall 2013 and 282 Spring 2014. Despite multiple tutoring options available to students on campus, the HSI STEM office remains a popular choice among students because of our friendly, approachable, and easy to understand tutors.
Project Objective: To significantly increase Latino student success in the timely completion of introductory and gatekeeper pre-baccalaureate courses that typically have high failure rates by providing supplementary instruction (SI) during the academic semester through scheduled SI classes offered by the Learning Assistance Center (LAC) using focused tutoring of small groups of students by high-achieving Latino students.

Check if this is a status update for the previous budget period.

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<thead>
<tr>
<th>Performance Measure</th>
<th>Measure Type</th>
<th>Quantitative Data</th>
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<tr>
<td>By Fall 2011, in coordination with the ongoing faculty development program, identify culturally-connected learning obstacles and key assessment concepts that need to be addressed to positively improve course completion rates. Evaluate how current and proposed changes in course content, pedagogy, assignments, and assessments resulting from faculty development support will alter changes in supplementary instruction needs.</td>
<td>GPRA</td>
<td>Raw Number Ratio %</td>
</tr>
<tr>
<td>By Fall 2011, add SI classes through LAC and identify 4 Graduate Promotores de STEM.</td>
<td>GPRA</td>
<td>Raw Number Ratio %</td>
</tr>
<tr>
<td>By Fall 2011, recruit 4 Graduate Promotores de STEM scholars.</td>
<td>GPRA</td>
<td>Raw Number Ratio %</td>
</tr>
<tr>
<td>Between Fall 2011 and Fall 2016, conduct longitudinal assessment of performance of students participating in different instructional intervention strategies (SI, Promotores de STEM tutoring) to identify best impact practices for additional instruction. Statistically dissect the influence of these programs from the influence of the implementation of the culturally responsive pedagogy in STEM promoted through the faculty development program to the overall yearly improvement over baseline measures to within the desired +/-3% of the success rate of all students by the end of the award.</td>
<td>GPRA</td>
<td>Raw Number Ratio %</td>
</tr>
</tbody>
</table>

Explanation of Progress (Include qualitative data and data collection information)
Performance measures 2a – 2c do not apply to this performance period.
Check if this is a status update for the previous budget period.

### Performance Measure | Measure Type | Quantitative Data
--- | --- | ---
For student research cohort each year of the grant: Will recruit 20 students within the STEM disciplines and pair with faculty mentors. | GPRA | Raw Data & Actual Performance Data
| | Raw Number | Ratio | % |
| | 20 | / | | 19 | / |
| Student grades in the spring semester following participation in the Winter Research Experience will increase. | GPRA | Raw Data & Actual Performance Data
| | Raw Number | Ratio | % |
| | / | / | |
| Student attitudinal and interest indicators will increase by 50% in post-surveys compared to pre-surveys. | GPRA | Raw Data & Actual Performance Data
| | Raw Number | Ratio | % |
| | / | / | |
| Retention rate of Latino students will increase 3% over the 2010-2011 baseline. | GPRA | Raw Data & Actual Performance Data
| | Raw Number | Ratio | % |
| | / | / | |

#### Explanation of Progress (Include qualitative data and data collection information)

In its third year, the Winter Research Experience Program began at the start of the 2014 winter session at California State University, Long Beach. The Winter Research Experience Program was designed to provide a brief but intensive research experience for undergraduate students enrolled in STEM baccalaureate programs at CSULB. However, the program was expanded in 2014 to provide a longer and more meaningful experience. This change was largely a result of feedback received from past program participants and mentors that expressed a desire for a longer program. This year, the program provided students with a 10-week long paid research experience. The Winter Research Experience aims to connect Latino students to a culture of research in an effort to increase academic performance and retention in STEM majors; it does so by providing students with faculty mentorship and professional development workshops targeting their research experience. In addition, the Winter Research Experience is meant to function as an introduction into the world of research by facilitating student’s transition into other minority research programs on campus.

Specific objectives of the program are to increase: (1) each student’s ability to apply content and skills learned in the classroom to research; (2) their understanding of the research process; (3) their knowledge of ethical conduct in their field, and (4) their ability to interpret result in research.

Pre- and post-program surveys and an open-ended midterm assessment were made available online using Qualtrics surveying software program. The pre-survey link was sent via email to students prior to the start of the program. At the midpoint of the program, an opened-ended online survey was sent to participants to gauge their experience and working relationship with their faculty mentor. A post-survey link was sent out to students following their participation in the program. Lastly, an online link was sent to all participating faculty mentors to evaluate their experience of the program. All responses for surveys were downloaded, compiled, and analyzed using IBM SPSS. Open-ended responses were analyzed and collated by the evaluator.

A total of 19 students were enrolled in the 2014 Winter Research Experience Program. On average, participants were 22.2 (SD = 3.1) years old and the majority were female (57.9% female and 42.1% male). More than half were born in the U.S. (63.2%) and some were born in Mexico (36.8%) and Guatemala (5.3%). For those born outside of the U.S. (8 students), all had been in the U.S. nine or more years. More specifically, 3 of the foreign born participants reported having lived in the U.S. 10-20 years, 2 reported 11-15 years, 2 reported more than 20 years, and 1 reported 9-10 years. All participants self-identified as Hispanic/Latino with 1 reporting both Hispanic/Latino and White/Caucasian heritages. The majority reported being English/Spanish bilingual (89.5%). In terms of marital status, most were single (84.2%); a small number were either married (5.3%), divorced (5.3%), or living with partner (5.3%). On a related note, the majority reported living in their parent’s home (63.2%); the rest either shared an apartment (15.8%), lived alone in a home (5.3%), or lived alone in an apartment (5.3%).

Most of the students reported being first-generation educated (94.7%). In terms of class ranking, 55.6% were juniors (60-89 units), 27.8% were seniors (90+ units), 16.7% were sophomores (30-59 units), and 1 did not answer this question. All students reported being full time students. The majority of students reported being in a degree program within the College of Natural Sciences and Mathematics (63.2%); the rest were from the College of Engineering (36.8%).

Most of the students reported that they did not possess any prior research experience (84.2%) before participating in the Winter Research Experience program. However, a few students reported possessing prior research experience throughout one academic semester (5.3%), prior research experience throughout multiple academic semesters (5.3%), and prior academic semester and a summer experience (5.3%). At pre-program, students reported their future plans regarding post-undergraduate education. Almost all students reported plans for pursuing post-graduate education (94.7%). Specifically, 47.4% reported wanting to pursue a master’s degree, 31.6% reported plans to pursue a doctoral degree, and 15.8% reported that they plan on getting a medical degree, and 5.3% reported not considering post-undergraduate education. At post-program, all students reported plans for pursuing a post-undergraduate education with specific gains in pursuing Master’s degree, doctoral degree, or medical degree.

Students provided responses to several questions regarding research and academic goals. In most cases, students reported neutral responses to statements at pre-program and higher levels of agreement at post-program (i.e., 21 out of 21 items indicate post-program responses, on average, were higher than pre-program responses). Statistically significant differences were observed for 15 out of the 21 items indicating gains at post-program, which included higher agreement to the following statements: I understand how knowledge is constructed; I have the ability to integrate theory and practice, I am part of a learning community (p < .05); I have skill in interpreting results, I understand that scientific assertions require supporting evidence, I have learned about ethical conduct in my field, I have the ability to read and understand primary literature, I have learned laboratory techniques, I have skill in how to give an effective oral presentation, I have skill in science writing, I understand how scientists think (p < .01); I understand the research process in my field, I understand how scientist work on real problems, I have the ability to analyze data and other information, I have self-confidence (p < .001).

In terms of the lab context, most students worked with a team of other students. Specifically, 42.1% reported working on projects with other undergraduate students,
21.1% reported working with both undergraduate and graduate students on projects, 26.3% reported working only with graduate students on projects, and 10.5% reported working individually. Students were asked to evaluate their expectations regarding the Winter Research Experience program. Most of the students (80.9%) reported that the research experience either met or surpassed their expectations. Specifically, 47.4% reported that the experience was “much better” than expected, 26.3% reported that the experience was a “little better” than expected, and 26.3% reported that the experience met their expectations.

The majority of students reported that their primary supervisor was a CSULB professor (63.2%). Only 3 students reported that their primary supervisor was a graduate student (15.6%), 2 reported a professional researcher (10.5%) and 2 reported other (10.5%). In terms of performance, more than half reported that their supervisor was an outstanding mentor and teacher (52.6%), some reported that their supervisor was “above average” (31.6%) and some reported that their supervisor was “about average” (15.8%). In addition, students reported on various questions regarding their working relationship with their mentor and time spent engaged in research. Also, we asked students to evaluate their experience with fellow students in the Winter Research Experience program. Among the students, about half reported “working with other students was one of the best parts of the research experience.”

Students reported on various questions regarding their future research plans. Most students (84.2%) reported that the research experience confirmed their interest in their respective fields of study; however, 3 (15.8%) students neither agreed nor disagreed with this statement. In terms of the research program impacting their preparation for advanced coursework or thesis work, the student’s responses varied. Most of the students agreed (“strongly agree” and “agree”) with the statement (89.5%), few reported “neither agree nor disagree” (5.3%), and few reported disagreement (5.3%). Over half of the students felt that the experience prepared them for graduate school (52.7%) while others neither agreed nor disagreed (36.8%) and few disagreed (10.5%).

We assessed the overall experience of the research program. Overall, we found that students had a positive experience. Over two-thirds reported that the program was “excellent” (73.7%), “good” (15.8%), or “fair” (5.3%); none of the students selected “poor” as a response. In terms of satisfaction, most of the students reported that they were “very satisfied” (78.9%) and others reported feeling “mildly satisfied” (21.1%) about the experience. Lastly, we asked the students if they would choose to have another research experience; all students reported that would likely (10.5%) or very likely (89.5%) seek out another research opportunity.

Open-ended responses were included in the survey to gain perspective on students’ experiences and feedback regarding the program. All students reported that they would recommend the program to students and/or their friends. The open-ended responses corroborate varied levels of satisfaction with the program and gains made. Four broad themes were identified for all the comments. The four themes were: 1) Professional networking; 2) Skills gained; 3) Gateway for early research experiences; and 4) Benefits gained from hands-on applied experience. Professional networking opportunities were described by many students; they saw their mentors and students helping them expand their networks and assisting them with participation in conferences. For example, a student wrote, “I’ve had a lot of opportunities for career growth, my mentor is connecting me with other scientists and helping me to present my research at larger conferences. I feel like I am enhancing my resume and my employability by a great deal beyond other classmates who are just going to class and doing well. It is a great experience and I feel like I have grown a lot as a person through the program as well.”

Students largely wrote about gaining skills in the laboratory. For example, a student wrote, “The program provides you with an opportunity to learn important lab techniques and lab protocols.” Students also wrote about the program being a great opportunity to get involved in research and clarify interest in research careers. For example a student wrote, “The program offers a great opportunity for students who may be unsure if a career in research is something they may in fact want to pursue. Many students have educational career goals and plans, while research has always been a strong interest of theirs, they could never know for sure without actually working in a laboratory. The program helps students bridge common interest in the STEM fields and research, to help them determine what education and career they would like to commit to and pursue.” Lastly, the last theme was mentioned by students and involved the benefits of conducting applied research. For example a student wrote, “This experience really opens your eyes to real science outside of a classroom. It is important to know what our field of study focuses on behind the books.”

In terms of feedback, some students provided insight on how to improve the program. For example, one student wrote, “More social activities to bring professors and students together. More face-to-face interaction and communication, especially near the time of final presentations.” Another reported that the research experience would be improved if mentors had clearer goals for the student projects, “This is an excellent learning experience but I would suggest that the faculty mentors provide the students with a clear plan for a research project beforehand.” Overall, the comments provided by the 19 students indicate that the students reported positive experiences and gains in research-related areas (e.g., networking, lab experience, clarification of research career interests).

A total of 13 faculty mentors participated in the Winter Research Experience Program. Faculty mentors were associated with departments such as Biological Sciences (46%), Chemical Engineering (38%), Computer Engineering and Computer Science (8%), and Chemistry and Biochemistry (8%). The majority tended to host 2 students in the program. Most of the students (74%) were invited by the mentors to continue working in their labs in subsequent semesters. Most of the mentors reported that they worked directly with students over the winter period (91%).

In terms of expectations, all faculty members reported that the experience either met or surpassed their expectations. Specifically, 50% reported that the program met their expectations, 40% reported that the experience was much better than expected, and 10% reported that the experience was a little better than expected. Similarly, almost all (90%) indicated that they were very satisfied with the experience with 1 indicating mild satisfaction. In addition, all faculty members (100%) indicated that they were interested in hosting students again with most expressing interest in participating in the following student selection process (80%).

Three faculty mentors provided comments regarding how to improve the program and a comment regarding their satisfaction with the program. A faculty member wrote, “The program was great. The only thing that might be nice is if you give the students more time for their presentations, or have them write something up. The process of writing up the results of scientific research is extremely important and it would be a good idea for the students to be exposed to this. Writing up their results as a very short scientific ‘paper’ would help reinforce everything they learned.” Another recommended a change that impacts faculty mentors, “It would be great if the supplies could be ordered using a purchase order number, or by the university in some way, so that academic pricing on supplies is available. And so that expenses are not out of pocket.” Lastly, another faulty mentor wrote, “The experience met my expectations, because I had high expectations based on the previous year. I have been greatly impressed with all of the students in the program that I have en countered.” Overall, the comments and responses provided by the faculty mentors indicate that they had positive experiences and most will continue to host their student in their labs.
In addition, students reported on various questions regarding their working relationship with their mentor and time spent engaged in research. Again, responses varied student. In terms of performance as a teacher and mentor, 93% (13 out of 14) students reported that their supervisor was an average or above average teacher/mentor. Most of students (10) reported that their supervisor was a CSULB professor. Two students reported that their supervisor was a post-doc and 2 reported a graduate deal”).

expectations.” In terms of skills or research-related experiences gained from the summer program, experiences varied between students (i.e., from “none” to “a great much better than expected.” Three students reported that the experience was “a little better than expected” and 1 reported that the experience “met their expectations.”

individually. Students were asked to evaluate their expectations regarding the summer program. The majority of students (6) reported that the research experience was higher than pre-program responses). Statistically significant differences were observed for 7 out of the 21 items indicating gains at post-program, which included the participants self-identified as Hispanic/Latino with 1 selecting more than one other category (i.e., Hispanic and Pacific Islander). Lastly, 11 indicated living in their home.

A total of 16 (45.5% increase over the previous year) students were enrolled in the 2014 Summer Bridge to The Beach Research Program at CSULB. On average, they were 24.1 (SD = 2.9, range = 20 - 31) years old and most were males (10 males, 6 females). Most were born in the U.S. (11); the rest were born in Mexico (4) and Colombia (1). Of those born outside of the U.S. (5), 4 indicated living in the U.S. for more than 10 years and 1 indicated living in the U.S. for more than 20 years. All participants self-identified as Hispanic/Latino with 1 selecting more than one other category (i.e., Hispanic and Pacific Islander). Lastly, 11 indicated living in their parent’s home, 2 indicated renting a room, 1 living alone in a rented home, and 1 indicated sharing an apartment.

Fourteen students (87.5%) reported being first-generation educated. In addition, 14 reported that they were enrolled as full-time students whereas 1 reported that they were part time and 1 did not report. In terms of class ranking, 14 students were juniors (60-89 units), 1 freshman (0-29 units) and 1 senior (90+ units). In terms of the college associated with their degree program, 8 reported being part of the College of Engineering and 8 reported the College of Natural Sciences and Mathematics as their home.

Most students reported that they did not possess any prior research experience (13) whereas 2 reported a prior summer research program. At pre-program, 87% indicated future plans that involved post-baccalaureate programs (either professional or academic).

Explain students self-identified as Hispanic/Latino with 1 selecting more than one other category (i.e., Hispanic and Pacific Islander). The majority of students (6) reported that the research experience was higher than pre-program responses). Statistically significant differences were observed for 7 out of the 21 items indicating gains at post-program, which included the participants self-identified as Hispanic/Latino with 1 selecting more than one other category (i.e., Hispanic and Pacific Islander). Lastly, 11 indicated living in their parent’s home, 2 indicated renting a room, 1 living alone in a rented home, and 1 indicated sharing an apartment.

In the terms of the lab context, most students (7) worked with other undergraduate and graduate students on projects. Specifically, only 3 students reported working individually. Students were asked to evaluate their expectations regarding the summer program. The majority of students (6) reported that the research experience was “much better than expected.” Three students reported that the experience was “a little better than expected” and 1 reported that the experience met their expectations.” In terms of skills or re-search-related experiences gained from the summer program, experiences varied between students (i.e., from “none” to “a great deal”).

Most of students (10) reported that their supervisor was a CSULB professor. Two students reported that their supervisor was a post-doc and 2 reported a graduate student. In terms of performance as a teacher and mentor, 93% (13 out of 14) students reported that their supervisor was an average or above average teacher/mentor.

<table>
<thead>
<tr>
<th>Performance Measure</th>
<th>Measure Type</th>
<th>Quantitative Data</th>
<th>Raw Number</th>
<th>Target</th>
<th>Actual Performance Data</th>
<th>Raw Number</th>
<th>Ratio %</th>
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<th>Actual Performance Data</th>
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<th>Ratio %</th>
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<tbody>
<tr>
<td>By Spring 2012, the Summer Bridge Program will be coordinated and targeted recruitment activities planned.</td>
<td>GPRA</td>
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<td>By Summer 2012, an introductory cohort of 10 students will be recruited and participate in the Summer Bridge Program.</td>
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<td>By Fall 2012, the introductory cohort of 10 students will apply for on-campus minority-based research programs.</td>
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<td>From Summer 2012 – 2016, provide participating students with annual travel funds to attend and participate in professional or student-centered conferences in their fields.</td>
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<td>By Summer 2014, measurements will be in place to understand cohort success by graduation rate, and by acceptance to post-baccalaureate programs (either professional or academic).</td>
<td>GPRA</td>
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<td>By Fall 2015, will increase URM graduation rates within CNSM and COE by 3% per year from their respective 2003 baselines of 32.8% and 47.9%.</td>
<td>GPRA</td>
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</table>
In addition, students reported on various questions regarding their working relationship with their mentor and time spent engaged in research. Again, responses varied between students with most reporting “excellent” and “good” experiences.

Students were also asked to evaluate their experience with fellow undergraduate students in the summer program. Among the students, most either reported that “working with other students was the best parts of the research experience” or that “working with other students moderately enhanced [their] research experience.”

Participants were presented with several statements regarding the impact that the summer research experience potentially had on their interest in research, clarification of career interests, and preparation in terms of graduate schools, advanced coursework, and future jobs. Overall, the a large percentage of participants either agreed or strongly agreed that participating in the summer program confirmed their research interests (86%), clarified their field of study (43%), and prepared them for advanced coursework (71%), graduate school (43%), and future jobs (79%). However, a few students indicated disagreement or neutrality regarding these statements.

In terms of overall satisfaction with the Summer Bridge to The Beach Research Program, most students reported general satisfaction with the summer research experience. Among 14 students who indicated satisfaction with the program, 64% reported being very satisfied, 36% reported being mildly satisfied, 0% reported feeling neutral, 0% reported mild dissatisfaction, and 0% reported being very dissatisfied. Likewise, another indicator of satisfaction with the summer research program was obtained by asking students if they would choose to have another research experience as an undergraduate student; most students reported that they were interested in another research experience. Specifically, 57% reported “I am very likely to choose another research experience,” 29% reported “I am likely to choose another research experience,” 7% reported “I am unlikely to choose another research experience,” and 7% reported “I will not choose to have another research experience.”

Open-ended responses corroborate the high level of satisfaction with the program. While very few students expressed a partial or fair level of satisfaction, most expressed very positive remarks about their experience and their working relationships with their supervisors. For example, in terms of conducting research, a student wrote, “Yes, I’ve learned many valuable things. I’m able to run an experiment from beginning to end. I have also worked with others to achieve the same goal and that is something I’m proud of.” In terms of interactions with mentors, almost all reported frequent interactions and high levels of satisfaction in these interactions. For example, one student stated, “The interaction between me and my faculty member is very good. We both hear each other out and he is able to catch any of my mistakes quickly. He assigns me specific tasks and expects the best out of me.” Similarly, another student stated, “I am satisfied because I did indeed form a good bond with my adviser. I also plan to continue to conduct research within this lab after the summer so I could use the skills learned to write programs and build quadcopters.”

Students were given opportunities to provide feedback to the program. Specifically, we solicited comments for improving the program for future participants. All participants provided positive remarks about the program with many commenting about the utility of the program in helping new transfer students become more familiar with the university. For example, a student wrote, “It is a great experience and it helps with the transition from junior college to the university.” Specific comments regarding the program touched on a variety of issues such as more organization needed from mentors, the need for more social activities among the participants, and praise for the program coordinators. For example, a student wrote “I am very grateful all the coordinators have made themselves available any time of day for our questions and concerns. They have also set us up for future experiences and opened doors for new opportunities.”
Project Objective: To significantly increase Latino student academic connectedness to the STEM fields and reinforce student motivation for STEM study, a new GE course, "Latino Leadership in STEM," will be developed and taught through the Chicano/Latino Studies Department.

Check if this is a status update for the previous budget period.

<table>
<thead>
<tr>
<th>Performance Measure</th>
<th>Measure Type</th>
<th>Quantitative Data</th>
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</thead>
<tbody>
<tr>
<td>By Spring 2012, faculty from the Chicano/Latino Studies Department, CNSM and COE will work together to establish a course outline including student learning outcomes, assessment, and overall course content.</td>
<td>GPRA</td>
<td>Raw Number Ratio %</td>
</tr>
<tr>
<td>By Spring 2012, the course outline will be reviewed by the department curriculum committee and then submitted for approval by Chicano/Latino Studies Department, CNSM and COE.</td>
<td>GPRA</td>
<td>Raw Number Ratio %</td>
</tr>
<tr>
<td>By Spring 2012, faculty from the Chicano/Latino Studies Department, CNSM and COE will ensure that the course is advertised and listed in the university catalogue.</td>
<td>GPRA</td>
<td>Raw Number Ratio %</td>
</tr>
<tr>
<td>By Fall 2012, faculty from Chicano/Latino Studies Department, CNSM and COE will work with the project evaluators to determine the appropriate methods through which the effectiveness of the course on participant learning, STEM field motivation, and teaching effectiveness will be determined.</td>
<td>GPRA</td>
<td>Raw Number Ratio %</td>
</tr>
<tr>
<td>The course will be taught and evaluated in Fall 2012 and then institutionalized as part of CSULB’s commitment to this project by Fall 2013.</td>
<td>GPRA</td>
<td>Raw Number Ratio %</td>
</tr>
</tbody>
</table>

Explanation of Progress (Include qualitative data and data collection information)
Performance measure 5a – 5e do not apply this reporting period, however the Latino Leadership in STEM course was developed and taught.
Project Objective: Increase Latino STEM student persistence and retention in CNSM and COE by tailoring their freshmen-level courses NSCI190 and ENGR101/102 to meet Latino STEM students' needs. To significantly increase Latino STEM transfer student persistence and retention in CNSM and COE by developing new upper division courses, NSCI390 and ENGR390, for transfers.

Check if this is a status update for the previous budget period.

<table>
<thead>
<tr>
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<th>Measure Type</th>
<th>Quantitative Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>By Fall 2012, faculty from CNSM and COE will tailor and offer NSCI190 and ENGR101/102 sections to meet the needs of Latino STEM students.</td>
<td>GPRA</td>
<td></td>
</tr>
<tr>
<td>By Spring 2012, faculty from CNSM and COE will work to establish course outlines for NSCI390/ENGR390 including student learning outcomes, assessment, and overall course content.</td>
<td>GPRA</td>
<td></td>
</tr>
<tr>
<td>By Spring 2012, the NSCI390/ENGR390 course outlines will be reviewed by the curriculum committees and submitted for approval by CNSM and COE.</td>
<td>GPRA</td>
<td></td>
</tr>
<tr>
<td>By Spring 2012, faculty from CNSM and COE will ensure that the NSCI390/ENGR390 courses are advertised and listed in the university catalogue.</td>
<td>GPRA</td>
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</tr>
<tr>
<td>NSCI390/ENGR390 will be taught and evaluated in Fall 2012 and then institutionalized as part of CSULB’s commitment to this project by Fall 2013.</td>
<td>GPRA</td>
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</table>

Explanation of Progress (Include qualitative data and data collection information)

Performance measures 6a – 6d do not apply to this performance period, however the course was developed and institutionalized.
Project Objective: After the completion of a series of career counseling appointments or workshops for career/major decision-making, HSI STEM students will demonstrate increased knowledge and confidence in their ability to make decisions regarding their major or career, and be able to identify and utilize a career resource.

Check if this is a status update for the previous budget period.

<table>
<thead>
<tr>
<th>Performance Measure</th>
<th>Measure Type</th>
<th>Quantitative Data</th>
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</thead>
<tbody>
<tr>
<td>Promote career planning through the implementation of STEM CEP within NSCI190/390 and ENGR 101/102/390.</td>
<td>GPRA</td>
<td>Target: Raw Number, Ratio % Actual Performance Data: Raw Number, Ratio %</td>
</tr>
<tr>
<td>Invite Latino STEM professionals as panelists to share their career and personal experiences.</td>
<td>GPRA</td>
<td>Target: Raw Number, Ratio % Actual Performance Data: Raw Number, Ratio %</td>
</tr>
<tr>
<td>Increase the number of the students who reported that they increased their level of confidence in having chosen a STEM related career.</td>
<td>GPRA</td>
<td>Target: Raw Number, Ratio % Actual Performance Data: Raw Number, Ratio %</td>
</tr>
<tr>
<td>Increase the number of students who reported that they now understand the process on how to make decisions regarding their STEM career.</td>
<td>GPRA</td>
<td>Target: Raw Number, Ratio % Actual Performance Data: Raw Number, Ratio %</td>
</tr>
<tr>
<td>Increase the number of students who reported being able to identify resources to help them choose a STEM career.</td>
<td>GPRA</td>
<td>Target: Raw Number, Ratio % Actual Performance Data: Raw Number, Ratio %</td>
</tr>
<tr>
<td>Increase the number of students who reported that they are now able to identify their interests and how their interests related to their STEM career.</td>
<td>GPRA</td>
<td>Target: Raw Number, Ratio % Actual Performance Data: Raw Number, Ratio %</td>
</tr>
<tr>
<td>Increase the number of students who reported that they made a decision about choosing a specific STEM career.</td>
<td>GPRA</td>
<td>Target: Raw Number, Ratio % Actual Performance Data: Raw Number, Ratio %</td>
</tr>
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**Explanation of Progress (Include qualitative data and data collection information)**

As explained in previous reports, close collaboration with CSULB’s Career Development Office takes place throughout the various grant components to ensure integration of career exploration workshops.
In its third year, the Annual Bienvenida event was held in September at the Pointe, located inside the CSULB pyramid. The event provides Latino STEM parents and families with bilingual information intended to foster an environment that is conducive to Latino student success in STEM fields. More specifically, the goals of the Bienvenida are to increase understanding of STEM fields, increase comfort with CSULB, provide exceptional speakers and panelists to impart useful information, and gain support for the program.

A Latino STEM faculty panel gave parents insight to faculty expectations and campus culture; a STEM industry panel provided professional perspectives on careers in the STEM fields; and representatives from COE and CNSM provided informational sessions on student opportunities and university policies.

A total of 90 participants completed an evaluation form at the conclusion of the event. Participants had the option of completing the survey in Spanish or English; the majority of participants completed the evaluation form in Spanish (58.9% Spanish, 41.1% English). Participants were asked to indicate their relationship to the STEM program. The data indicate that 32.9% were parents of a STEM student, 28% were STEM students, 23.2% were relatives of a STEM student, and 13.4% were friends of a STEM student.

Several questions on the evaluation form were asked to gain an understanding of the participants’ experience at the event. We specifically asked participants to read statements and indicate their level of agreement (i.e., strongly disagree, disagree, neither agree nor disagree, agree, or strongly agree). Results indicate that most participants reported having a better understanding of the STEM fields (i.e., 94.5% agreed with this statement). On a related note, we assessed whether participants had a better understanding of the role of a STEM student; most participants reported having a better understanding of the role of a STEM student (i.e., 94.3% agreed with this statement). In terms of comfort with the university, most participants reporting feeling more comfortable in the university setting (i.e., 93.4% agreed with the statement).

As part of the evaluation, we also assessed the speakers and panel discussions. Overall, most participants reported agreement that the speakers presented information that was understandable (i.e., 93.4% agreed with this statement). In addition, the Faculty Panel was also perceived well; most participants thought that the quality of the information presented by the faculty was excellent (i.e., 96.6% agreed with this statement). Of the participants who attended the Family Support Student Success Panel Session (N = 33), most agreed that the panel was excellent (i.e., 97.8% agreed with this statement). Of the participants who attended the Faculty Support Student Success Panel Session (N = 28), most agreed that the session was useful (i.e., 95.5% agreed with this statement). Of those who participated in the Student Opportunities Session (N = 12), most agreed that the information provided was useful (i.e., 96.6% agreed with this statement). Participants were asked to select the sessions that they liked the most. Results from these participants (N = 81) indicate that the Industry Panel (37.1%) and the Family Support Student Success Panel (31.5%) were the most liked; followed by the Student Opportunities Panel (13.6%).

An open-ended question was asked to understand what kinds of topics participants would like to see addressed in future Bienvenidas. A total of 43.3% of the participants provided comments on a variety of topics that included opportunities for students (e.g., research, assistance with difficult classes, scholarships, internships, and employment), student experiences, CSULB STEM alumni, parent support/advice to help their student, more information and speakers for the Science fields, and more information on different STEM majors and how to get into STEM programs. Other feedback included general praise for the event and to invite more Latino STEM professionals. Lastly, participants were asked if they would attend next year’s Bienvenida event; most participants reported that they would (i.e., 87.8% agreed that they would attend next year’s Bienvenida).

Separate analyses were conducted to determine if trends reported were similar or different for parents of STEM students (N = 27). In terms of all questions posed, parents of STEM students agreed or strongly agreed with all of the statements on the evaluation survey (i.e., 100%) indicating that parents were very pleased with the activities and information presented at the Bienvenida event. Only one difference emerged in which sessions were liked the most; in this case, parents selected Family Support Student Success Panel as the one they liked the most (34.6%) followed by the Student Opportunities (26.9%) and Industry Panel (23.1%).

### Explanation of Progress (Include qualitative data and data collection information)

In its third year, the Annual Bienvenida event was held in September at the Pointe, located inside the CSULB pyramid. The event provides Latino STEM parents and families with bilingual information intended to foster an environment that is conducive to Latino student success in STEM fields. More specifically, the goals of the Bienvenida are to increase understanding of STEM fields, increase comfort with CSULB, provide exceptional speakers and panelists to impart useful information, and gain support for the program.

A Latino STEM faculty panel gave parents insight to faculty expectations and campus culture; a STEM industry panel provided professional perspectives on careers in the STEM fields; and representatives from COE and CNSM provided informational sessions on student opportunities and university policies.

A total of 90 participants completed an evaluation form at the conclusion of the event. Participants had the option of completing the survey in Spanish or English; the majority of participants completed the evaluation form in Spanish (58.9% Spanish, 41.1% English). Participants were asked to indicate their relationship to the STEM program. The data indicate that 32.9% were parents of a STEM student, 28% were STEM students, 23.2% were relatives of a STEM student, and 13.4% were friends of a STEM student.

Several questions on the evaluation form were asked to gain an understanding of the participants’ experience at the event. We specifically asked participants to read statements and indicate their level of agreement (i.e., strongly disagree, disagree, neither agree nor disagree, agree, or strongly agree). Results indicate that most participants reported having a better understanding of the STEM fields (i.e., 94.5% agreed with this statement). On a related note, we assessed whether participants had a better understanding of the role of a STEM student; most participants reported having a better understanding of the role of a STEM student (i.e., 94.3% agreed with this statement). In terms of comfort with the university, most participants reporting feeling more comfortable in the university setting (i.e., 93.4% agreed with the statement).

As part of the evaluation, we also assessed the speakers and panel discussions. Overall, most participants reported agreement that the speakers presented information that was understandable (i.e., 93.4% agreed with this statement). In addition, the Faculty Panel was also perceived well; most participants thought that the quality of the information presented by the faculty was excellent (i.e., 96.6% agreed with this statement). Of the participants who attended the Family Support Student Success Panel Session (N = 33), most agreed that the panel was excellent (i.e., 97.8% agreed with this statement). Of the participants who attended the Family Support Student Success Panel Session (N = 28), most agreed that the session was useful (i.e., 95.5% agreed with this statement). Of those who participated in the Student Opportunities Session (N = 12), most agreed that the information provided was useful (i.e., 96.6% agreed with this statement). Participants were asked to select the sessions that they liked the most. Results from these participants (N = 81) indicate that the Industry Panel (37.1%) and the Family Support Student Success Panel (31.5%) were the most liked; followed by the Student Opportunities Panel (13.6%).

An open-ended question was asked to understand what kinds of topics participants would like to see addressed in future Bienvenidas. A total of 43.3% of the participants provided comments on a variety of topics that included opportunities for students (e.g., research, assistance with difficult classes, scholarships, internships, and employment), student experiences, CSULB STEM alumni, parent support/advice to help their student, more information and speakers for the Science fields, and more information on different STEM majors and how to get into STEM programs. Other feedback included general praise for the event and to invite more Latino STEM professionals. Lastly, participants were asked if they would attend next year’s Bienvenida event; most participants reported that they would (i.e., 87.8% agreed that they would attend next year’s Bienvenida).

Separate analyses were conducted to determine if trends reported were similar or different for parents of STEM students (N = 27). In terms of all questions posed, parents of STEM students agreed or strongly agreed with all of the statements on the evaluation survey (i.e., 100%) indicating that parents were very pleased with the activities and information presented at the Bienvenida event. Only one difference emerged in which sessions were liked the most; in this case, parents selected Family Support Student Success Panel as the one they liked the most (34.6%) followed by the Student Opportunities (26.9%) and Industry Panel (23.1%).

### Performance Measure

<table>
<thead>
<tr>
<th>Measure Type</th>
<th>Quantitative Data</th>
<th>Performance Measure</th>
</tr>
</thead>
<tbody>
<tr>
<td>GPRA</td>
<td>Raw Number Ratio %</td>
<td>By Spring 2012, establish an HSI Latino STEM Bienvenida-Welcome event steering committee with representatives from both CNSM and COE, as well as student organizations, Student Services, faculty, and Latino STEM alumni.</td>
</tr>
<tr>
<td>GPRA</td>
<td>Raw Number Ratio %</td>
<td>By Fall 2012, a minimum of 10% of first year Latino students and their families will participate in HSI STEM Bienvenida-Welcome event.</td>
</tr>
<tr>
<td>GPRA</td>
<td>Raw Number Ratio %</td>
<td>By Fall 2013, 20% of Latino STEM incoming freshmen and transfer students and their families will participate.</td>
</tr>
<tr>
<td>GPRA</td>
<td>Raw Number Ratio %</td>
<td>Throughout the remaining duration of the project (Fall 2013 through Summer 2016), participation of Latino STEM student family members in the Bienvenida-Welcome events will continue to increase annually.</td>
</tr>
</tbody>
</table>
Project Objective: To significantly increase Latino and campus awareness regarding HSI STEM-specific and other relevant cultural events through the creation of an HSI STEM website, Facebook group, and on-line HSI STEM-specific communities.

Check if this is a status update for the previous budget period.

<table>
<thead>
<tr>
<th>Performance Measure</th>
<th>Measure Type</th>
<th>Quantitative Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>By Fall 2011, hire a Spanish-bilingual/bicultural webmaster to develop and maintain the HSI STEM-specific website and Facebook webpage.</td>
<td>GPRA</td>
<td>Target Actual Performance Data</td>
</tr>
<tr>
<td>By Fall 2011, involve a first generation-educated Latino graphic artist in the production of bilingual/bicultural graphics for advertisement and recruitment that are designed to appeal to the Latino STEM student and their families.</td>
<td>GPRA</td>
<td>Target Actual Performance Data</td>
</tr>
<tr>
<td>By Fall 2011, develop a web procedures strategy and advertise the program throughout CSULB campus, CNSM, and COE to ensure maximum use and advertisement of HSI STEM-specific events and student opportunities.</td>
<td>GPRA</td>
<td>Target Actual Performance Data</td>
</tr>
<tr>
<td>By Spring 2012, transcreate the website and Facebook page into the Spanish language to enable Spanish-speaking parents and families to engage, learn about the STEM-related study and professional disciplines, advertise HSI STEM-related family events, and through this process, more fully support the academic endeavors of their children.</td>
<td>GPRA</td>
<td>Target Actual Performance Data</td>
</tr>
<tr>
<td>By Spring 2012, Latino STEM students will receive an invitation to join on-line STEM-specific communities.</td>
<td>GPRA</td>
<td>Target Actual Performance Data</td>
</tr>
</tbody>
</table>

**Explanation of Progress (Include qualitative data and data collection information)**

The bilingual (English/Spanish) CSULB HSI STEM website is live and continuously updated as are the HSI STEM social media outlets (i.e. Facebook, Twitter, and Instagram). The various outlets allow us greater reach to the student population. Since its initial launch, the website has been redesigned for better functionality. Several new pages were launched including: testimonials, online referral form, and student opportunities which include a list of scholarships, internships, and other professional development opportunities. We also launched an "I am STEM" campaign where student provide insight to their personal stories and reasons why they are pursuing a STEM degree. Web analytics showed a total of 17,614 page views during the reporting period. Of those, 46.5% were new visitors and the remaining were returning visitors; 83.4% of the users viewed the page in English while 16.6% viewed it in Spanish.

Website: http://csulb.edu/programs/hsi-stem/
Project Objective: To create a cultural shift at CSULB, establish an Advisory Board, a SACNAS chapter, increase Latino STEM student participation in FIG and POWER, develop a research symposium and encourage students to participate in conferences through funded travel opportunities.

Check if this is a status update for the previous budget period.

<table>
<thead>
<tr>
<th>Performance Measure</th>
<th>Measure Type</th>
<th>Quantitative Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>By Spring 2012 establish the HSI STEM Advisory Board.</td>
<td>GPRA</td>
<td></td>
</tr>
<tr>
<td>Target</td>
<td>Actual</td>
<td></td>
</tr>
<tr>
<td>Raw Number</td>
<td>Performance Data</td>
<td>Raw Number</td>
</tr>
<tr>
<td>Ratio %</td>
<td>Ratio %</td>
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</table>

| By Spring 2013 establish SACNAS chapter at CSULB.                                   | GPRA         |                   |
| Target                                                                              | Actual       |
| Raw Number                                                                          | Performance Data | Raw Number |
| Ratio %                                                                             | Ratio %     |
| /                                                                                   | /           |

| By Spring 2013 increase Latino STEM student representation in FIG and POWER         | GPRA         |                   |
| Target                                                                              | Actual       |
| Raw Number                                                                          | Performance Data | Raw Number |
| Ratio %                                                                             | Ratio %     |
| /                                                                                   | /           |

| Plan and carry out the first STEM Research Symposium in October of 2012.           | GPRA         |                   |
| Target                                                                              | Actual       |
| Raw Number                                                                          | Performance Data | Raw Number |
| Ratio %                                                                             | Ratio %     |
| /                                                                                   | /           |

**Explanation of Progress (Include qualitative data and data collection information)**

Performance measures 10a – 10d do not apply to this reporting period.
Project Objective: To significantly increase Latino student success in the timely completion of pre-baccalaureate STEM courses by adapting our current faculty development programming in culturally responsive pedagogy to STEM specific disciplines.

Check if this is a status update for the previous budget period.

<table>
<thead>
<tr>
<th>Performance Measure</th>
<th>Measure Type</th>
<th>Quantitative Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>By Fall 2012, have a program of STEM online modules, workshops, and course redesign opportunities for faculty. Particular emphasis will be placed on low completion rate courses.</td>
<td>GPRA</td>
<td>Target</td>
</tr>
<tr>
<td></td>
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<td>Raw Number</td>
</tr>
<tr>
<td>By Fall 2014, have a “best practice” model of redesigned courses for each low completion rate STEM course that has demonstrated improvement in completion for Latino students.</td>
<td>GPRA</td>
<td>Target</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Raw Number</td>
</tr>
<tr>
<td>By Fall 2015, Latino student success in the “gatekeeper” courses (as identified in the CDP) will improve by 3% over baseline measures.</td>
<td>GPRA</td>
<td>Target</td>
</tr>
<tr>
<td></td>
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<td>Raw Number</td>
</tr>
<tr>
<td>By Fall 2016, have all STEM low completion rate courses redesigned to improve student learning through assignments and learning activities associated with culturally responsive pedagogy in STEM.</td>
<td>GPRA</td>
<td>Target</td>
</tr>
<tr>
<td></td>
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<td>Raw Number</td>
</tr>
<tr>
<td>By Fall 2016 (conclusion of the grant), Latino student success in the low completion rate “gatekeeper” courses (as identified in the CDP) will improve to be within +/- 3% of the success rate of all students.</td>
<td>GPRA</td>
<td>Target</td>
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<tr>
<td></td>
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<td>Raw Number</td>
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</tbody>
</table>

Explanation of Progress (Include qualitative data and data collection information)

Performance measures 11a – 11e do not apply to this reporting period.
Project Objective: To significantly increase Latino student success in low completion rate, “gatekeeper” courses through the redesign of course student learning outcomes and assessment of student learning.

Check if this is a status update for the previous budget period.

<table>
<thead>
<tr>
<th>Performance Measure</th>
<th>Measure Type</th>
<th>Quantitative Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>By Fall 2012, begin a faculty development program to refine student learning outcomes in STEM low completion rate courses.</td>
<td>GPRA</td>
<td></td>
</tr>
<tr>
<td>By Fall 2012, begin faculty development program to refine learning outcomes assessment.</td>
<td>GPRA</td>
<td></td>
</tr>
<tr>
<td>By Fall 2013, begin a program of using student learning assessment outcomes to further redesign course content, objectives, and learning strategies.</td>
<td>GPRA</td>
<td></td>
</tr>
<tr>
<td>By Fall 2015, Latino student success in the “gatekeeper” courses (as identified in the CDP) will improve by 3% over baseline measures.</td>
<td>GPRA</td>
<td></td>
</tr>
<tr>
<td>By Fall 2016 (conclusion of the grant), Latino student success in the low completion rate “gatekeeper” courses (as identified in the CDP) will improve to be within +/- 3% of the success rate of all students.</td>
<td>GPRA</td>
<td></td>
</tr>
</tbody>
</table>

Explanation of Progress (Include qualitative data and data collection information)

Performance measures 12a – 12b, 12d – 12e do not apply to this reporting period.

Currently, more than 40 faculty members in the College of Natural Sciences and Mathematics have completed the semester-long Faculty Learning Community (FLC) modules where faculty learn about and develop an understanding of culturally relevant pedagogy. These faculty members redesigned their courses after completing the FLC modules and spent the following semester analyzing the effects of these changes on student learning. Faculty often integrate strategies to increase student involvement in lectures - such as interactive group activities and integrating formative assessment strategies (for example, through the use of clickers and pre-lecture assessments on flipped classroom elements). There were also more extensive reforms enacted by faculty - such as the creation of common assessments across sections and restructuring supplemental instruction to align more closely with course goals. Faculty participants represent all departments in the College of Natural Science and Mathematics. One faculty member from the College of Engineering joined the last cohort and it is expected that this individual will support the development of a College of Engineering specific cohort in the next academic year. After the initial offering of the FLC, all subsequent faculty cohorts have been led by pairs of content faculty members who have successfully completed the course in previous semesters.
Project Objective: To significantly increase Latino student success in the timely completion of pre-baccalaureate STEM courses by adapting our current faculty development programming for faculty teaching in the Beach Learning Community (BLC).

Check if this is a status update for the previous budget period.

<table>
<thead>
<tr>
<th>Performance Measure</th>
<th>Measure Type</th>
<th>Quantitative Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>By Fall 2012, revise our current program of BLC online modules, workshops, and opportunities for faculty development. Emphasis will be placed on Latinos in BLC courses.</td>
<td>GPR A</td>
<td>Target</td>
</tr>
<tr>
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<td>Raw Number</td>
</tr>
<tr>
<td>By Fall 2014, have “best practices” for BLC faculty that demonstrate improvement in completion rates for Latino students.</td>
<td>GPR A</td>
<td>Target</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Raw Number</td>
</tr>
<tr>
<td>By Fall 2015, Latino student success in the BLC courses (as identified in the CDP) will improve by 3% over baseline measures.</td>
<td>GPR A</td>
<td>Target</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Raw Number</td>
</tr>
<tr>
<td>By Fall 2016, (conclusion of the grant) Latino student success in BLC courses (as identified in the CDP) will improve to be within +/- 3% of success rate of all students.</td>
<td>GPR A</td>
<td>Target</td>
</tr>
<tr>
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<td>Raw Number</td>
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<tr>
<td>By Fall 2016, have BLC faculty improve student learning through assignments and learning activities associated with culturally responsive pedagogy.</td>
<td>GPR A</td>
<td>Target</td>
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<td>Raw Number</td>
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</table>

Explanation of Progress (Include qualitative data and data collection information)
Revision of current BLC modules and workshops is in progress.
Performance measures 13a, 13c – 13e do not apply to this reporting period.
Project Objective: To develop data management strategies of the HSI STEM-related data to facilitate project-tracking, evaluation, and the establishment of cultural and pedagogical relevant “best” practices.

Check if this is a status update for the previous budget period.

<table>
<thead>
<tr>
<th>Performance Measure</th>
<th>Measure Type</th>
<th>Quantitative Data</th>
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<tbody>
<tr>
<td></td>
<td></td>
<td>Target</td>
</tr>
<tr>
<td>By Fall 2011, hire a data manager to work with the evaluator and project team to establish methods for data entry and management.</td>
<td>GPRA</td>
<td>Actual Performance Data</td>
</tr>
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<td>Raw Number</td>
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<tr>
<td>By Spring 2012, find, adapt, and establish all evaluation instrumentation and databases to be used to collect all HSI STEM-related data and facilitate measurement of Latino STEM</td>
<td>GPRA</td>
<td>Raw Number</td>
</tr>
<tr>
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<tr>
<td>By Fall 2012, supervise the entry of all HSI STEM-related data, monitor data quality, and manage the data entry, cleaning, and recoding to facilitate measurement of Latino STEM participation in advising and services activities as well as overall project effectiveness.</td>
<td>GPRA</td>
<td>Raw Number</td>
</tr>
<tr>
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</tr>
<tr>
<td>Throughout the remaining duration of the project (Fall 2012 through Summer 2016), maintain data entry and quality control procedures to facilitate prompt and accurate measurement of Latino STEM student participation in advising and student services activities as well as overall project effectiveness.</td>
<td>GPRA</td>
<td>Raw Number</td>
</tr>
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</tbody>
</table>

Explanation of Progress (Include qualitative data and data collection information)

Performance measures 14a – 14c do not apply to this reporting period. Data entry is continuously ongoing. The Data Manager oversees data entry and implements quality control procedures to ensure that all data is collected, stored, and entered accurately.
Section B: Budget Information

Project funds were not spent at the anticipated rate for year 1, therefore a request was submitted to utilize funds across years 3, 4, and 5 to increase capacity in the student research programs. With approval from the Department of Education, we’ve increased the number of opportunities available to students. For example, the Winter Research Experience Program expanded from 20 student positions to 26. The Summer Bridge to The Beach Research Program increased initially from 10 to 15 then further to 18. The funds will cover costs that include: student stipends, research lab supplies, and faculty incentives.

Section C: Additional Information

There was a major change in program leadership during this reporting period. Dr. Britt Rios-Ellis, who served a dual role as Principal Investigator and senior manager on the grant, left CSULB to become a Dean at California State University, Monterey Bay in August 2014. Proper communication took place to inform the Department of Education about the change. Dr. Eric Marinez took the lead as Co-PI on the grant. Dr. Alvaro Monge and Dr. Susan Gomez-Zwiep continue to serve as Co-PIs.

In addition, there were several staff changes throughout the year. Program leadership took the proper measures to ensure a smooth transition and cross training as to not affect program deliverables. Completion towards all program objectives stayed on track during the staff transitions.
General Information
1. PR/Award #: P031C110121
2. Grantee NCES ID#: 409698
3. Project Title: Increasing STEM Degree Attainment: Strengthening Articulation, Transfer, Retention & Graduation
4. Grantee Name: University Corporation at Monterey Bay; Science & Environmental Policy; Science, Media, Arts, & Technology
5. Grantee Address: 100 Campus Center, Bldg 508; Seaside CA 93955
6. Project Director: Dr. William Head
   Ph #: (831) 582-3576 Ext: (n/a) Fax #: (831) 582-3960
   Email Address: whead@csumb.edu

Reporting Period Information
7. Reporting Period: From: 10/01/2013 To: 09/30/2014

Budget Expenditures
8. Budget Expenditures
   a. Previous Budget Period
      Federal Grant Funds 1,170,837.92 Non-Federal Funds 52,286.58
   b. Current Budget Period
      Federal Grant Funds 636,005.12 Non-Federal Funds 31,343.75
   c. Entire Project Period
      (For Final Performance Reports only)

Indirect Cost Information
9. Indirect Costs
   a. Are you claiming indirect costs under this grant? ___Yes _X_No
   b. If yes, do you have an Indirect Cost Rate Agreement approved by the Federal Government? ___Yes ____No
   c. If yes, provide the following information:
      Period Covered by the Indirect Cost Rate Agreement: From: _____/_____/______ To: _____/_____/______ (mm/dd/yyyy)
      Approving Federal agency: ___ED ___Other (Please specify):
      Type of Rate (For Final Performance Reports Only): ___ Provisional ___Final ___Other (Please specify): __________
   d. For Restricted Rate Programs (check one) -- Are you using a restricted indirect cost rate that:
      ___ Is included in your approved Indirect Cost Rate Agreement?
      ___ Complies with 34 CFR 76.564(c)(2)?

Human Subjects (Annual Institutional Review Board (IRB) Certification)
10. Is the annual certification of Institutional Review Board (IRB) approval attached? ___Yes ___No _X_N/A
    The research is Exempt under Category 2b and continuing review is not required for Exempt research

Performance Measures Status and Certification
11. Performance Measures Status
   a. Are complete data on performance measures for the current budget period included in the Project Status Chart? ___Yes X No
   b. If no, when will the data be available and submitted to the Department? 9/30/2016 (mm/dd/yyyy)
   12. To the best of my knowledge and belief, all data in this performance report are true and correct and the report fully discloses all known weaknesses concerning the accuracy, reliability, and completeness of the data.

Name of Authorized Representative:
__________________________ Title: ____________________________
Signature: __________________________ Date: _____/_____/______

ED 524B
In Year 3 of California State University Monterey Bay’s (CSUMB) Increasing STEM Degree Attainment: Strengthening Articulation, Transfer, Retention & Graduation, the project made great strides toward completing all Project Objectives and Performance Measures. We achieved two of our Performance Measures: “increasing full-time degree-seeking transfer students graduated within three years of enrollment by 45%” (Performance Measure 1.b.) and “increasing students graduating in STEM majors within six years of enrollment by 40%” (Performance Measure 2.c.). We are confident that we will achieve – or exceed – all of our Performance Measures by the end of the project period if not sooner.

In year one our curricular efforts focused on the development and enhancement of individual courses and in year two the faculty began to solidify connections between and among courses. Now in year three we are seeing growth and innovation at the major, minor, and program level. For example, the Computer Science and Information Technology (CSIT) program is aligning their curriculum with the Association for Computing Machinery’s (ACM), which is the principal professional organization for computing. ACM’s recommendations reflect a decade worth of changes in the field and this brings the major in alignment with current industry and national standards. At the minor level, our Statistics faculty developed three much-needed courses for the new Statistics minor, as well as an online statistics module and a virtual textbook. Faculty and students are now working to expand the Statistics minor into a major. At the program level, faculty from the Division of Science and Environmental Policy (SEP) collaborated on a model bioreactor, which uses bacteria and vegetation to remediate agricultural runoff. The reactor is being used in classes and for faculty and student research in biology, ecology, and chemistry.

The project also made great strides in its science writing program. For example, we piloted a workshop for faculty regarding the use of CSUMB’s shared writing criteria as a mechanism for responding to student writing. We will refine and expand this workshop based on faculty feedback this semester. At the student level, we are testing the use of Calibrated Peer Review (CPR), a web-based tool that improves the quality of peer feedback while reducing faculty instruction time. Student feedback indicates positive outcomes on writing development and critical thinking skills as a result of the collaborative peer review process. We also developed a writing fellows program that trains upper division students to serve as instructors and reviewers for lower divisions students. Finally, the Writing and Professional Communication Associate (WPCA) designed an innovative online summer writing support course. The 10-week course uses a combination of blogging, structured review and feedback assignments, reflections, and a writer’s inventory of goals to help students develop their written voice, audience awareness, and personal identity. Initial results indicate increased confidence in writing for multiple audiences; improvements in organization and structure; and greatly improved ability to edit based on feedback from others.

In early 2014, CSUMB was awarded an Ocean Science Research Experiences for Undergraduates (REU) grant. This is the first Ocean Science REU at a HSI and the only one at a California State University (CSU) campus. Our work on undergraduate research and internships, enrichment programs, and regional partnerships laid the foundation for this successful grant proposal.

The program is communicating best practices and program findings related to mentor preparation, faculty engagement, undergraduate research, and use of technology and writing interventions to support traditionally underrepresented students in the sciences. Professional sessions include: Mentor Training, Engagement and Evaluation at the Council on Undergraduate Research (June 2014); Putting the You in UR: The influences of faculty participating in undergraduate research at the Professional and Organizational Development Network in Higher Education (November 2014); Participation in Undergraduate Research at Minority-Serving Institutions and A Dream Leveled or Maintained: Shifting STEM aspirations among low-income university students at the Association for the Study of Higher Education (November 2014); Space and Place: Creating Space for Diverse Students in Research through Reflective Writing, and Building, Visualizing and Activating Social Capital: Digital Tools to Make the Most Out of Undergraduate Research at the AAC&U conference on Diversity, Learning, and Student Success: Assessing and Advancing Inclusive Excellence (March, 2015); and The Reflective Researcher: The Role of Writing and Self-reflection in the Undergraduate Research Experience and a roundtable session about our pre and post surveys at the American Educational Research Association (April 2015).
### SECTION A - Performance Objectives Information and Related Performance Measures Data
(See Instructions. Use as many pages as necessary.)

**1. Project Objective**  
[X] Check if this is a status update for the previous budget period.

*Increase the number of Hispanic and low-income Science, Technology, Engineering, and Math (STEM) students transferring from HSI community colleges to California State University, Monterey Bay.*

#### 1.a. Performance Measure

**Measure Type**: Quantitative Data

**Objective**: Increase STEM transfer students by 80%.

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<tr>
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</thead>
<tbody>
<tr>
<td>213</td>
<td>/</td>
<td>190</td>
</tr>
</tbody>
</table>

#### 1.b. Performance Measure

**Measure Type**: Quantitative Data

**Objective**: Increase full-time degree-seeking [STEM] transfer students graduating within three years of enrollment by 45%.

<table>
<thead>
<tr>
<th>Raw Number</th>
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<th>Actual Performance Data</th>
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</thead>
<tbody>
<tr>
<td>19</td>
<td>/</td>
<td>44</td>
</tr>
</tbody>
</table>

**Explanation of Progress (Include Qualitative Data and Data Collection Information)**

One hundred and ninety (190) full-time STEM students transferred to California State University, Monterey Bay (CSUMB) in the 2013-14 academic year, this is 89% of our target performance measure (Performance Measure 1.a.). We will likely achieve our target performance measure in the 2014-15 academic year. We achieved – and surpassed – our target of increasing full-time degree-seeking transfer students graduated within three years of enrollment by 45% (Performance Measure 1.b.). Forty-four (44) students from the 2010 class of STEM transfer students graduated within three years of enrollment.

**Objective 1: Complete major-specific articulation pathways and transfer agreements for the new STEM majors and minors that provide clear curriculum pathways for community college transfer students.**

Given the rapid evolution of CSUMB STEM majors and minors, we reassessed the STEM articulation pathways and transfer agreements in Year 3. The transfer agreements are sound; however, the major-specific articulation pathways must be updated to reflect the broader range of available courses, minors, and majors at CSUMB. In Year 4 we will update existing STEM course articulations within ASSIST (the online student-transfer information system that outlines how course credits earned at one public California college or university can be applied when transferred to another) with an eye toward the 2016 revision of the ASSIST site.
Based on these revisions, we will develop Degree and Career guides for community college students, particularly those from our target audience. The guides will describe CSUMB’s STEM majors, highlight career opportunities, identify course articulations, and lay out CSUMB course pathways for the STEM majors. When applicable, the guides will include a course completion timeline so students are prepared to take the Graduate Record Examinations (GRE) and professional exams in a timely manner, which will reinforce degree completion and help ensure that our students are ready to enter graduate school or the workforce upon graduation. In addition, the university is developing a system (“ASSIST Mod”), to improve the interface between ASSIST and our Content Management System, allowing for automatic evaluation of transfer credit.

Objective 2: Establish and maintain an Electronic Data Interchange (EDI) transcript bridge with targeted HSI community colleges.
As reported last year, the Electronic Data Interchange (EDI) is in place for the majority of California community colleges. We increased the number of EDI transcripts received from all feeder schools: from 2,000 EDI transcripts in 2013 to over 3,300 in 2014. However, some campuses are struggling with implementation. We will work with Admissions to identify priority campuses and system improvements. We will also work with Admissions and Information Technology to ensure that CSUMB’s computing infrastructure will support the coming influx of electronic files from community colleges. Improvements may include dedicated servers space and implementation of Standardization of Postsecondary Education Data Exchange (SPEEDE) server as a pipeline for EDI transcripts. This implementation is on the project plan for Student Information Systems.

Objective 3: Create CSUMB campus exposure events and faculty and student presentations at community colleges that strengthen the connection of community college students to CSUMB STEM majors.
With the addition of an Outreach Coordinator, we increased our efforts to connect with community college students, focusing primarily on STEM students at Hartnell College (an HSI less than 20 miles from campus and CSUMB’s top feeder campus). CSUMB faculty and grant staff spoke in classes, provided a workshop on the Research Experiences for Undergraduates (REU) application process, participated campus events, and attended student club meetings such as MESA and the Science Club. In an effort to build student networks, we facilitated student interaction through an alumni panel, a student-led presentation about the new Marine Science major, and we invited Hartnell students to CSUMB for seminar talks, Undergraduate Research Week, and our year-end graduation celebration. As a result of these and other campus efforts, including the new 3-year Computer Science degree offered by Hartnell and CSUMB, the number of Hartnell students transferring to CSUMB STEM majors has more than doubled: 19 in 2013-14 to 52 in 2014-15. However, acceptance-to-enrollment rate for transfer students from Hartnell remains at 44%. Moving forward, we will work with our Hartnell colleagues to better understand and address the acceptance-to-enrollment rate and export these successful practices to targeted HSI community college campuses throughout California. In addition, we will coordinate with our campus partners to assess the need for a University Transfer Center to coordinate all transfer-related efforts and create a stronger sense of belonging for transfer students.

Objective 4: Improve community college transition into the STEM majors.
As reported last year, we are taking full advantage of the well-attended university transfer orientations. Our Outreach Coordinator reaches out to the transfer students via email prior to the orientation, calling their attention to our programs and offerings. At the orientation, we emphasize success stories of transfer students who engaged in undergraduate research and continued on to graduate programs. This model is working very well as we’ve seen a significant increase in transfer students applying to our programs during their first semester at CSUMB. Our one-year STEM transfer retention rate is 91%. In Year 4, we will develop additional STEM-focused programming for the transfer orientation, including small-group faculty interaction and major-specific discussions. To further improve transfer student retention rates, our Outreach Coordinator is working with the Dean of College of Science, Media Arts and Technology (SMART) to explore the feasibility of a STEM transfer bridge program. At a minimum, this will include a common class and support services, and it may also include common housing and community building events.
## Project Status Chart

**PR/Award # (11 characters):** P031C110121

### SECTION A - Performance Objectives Information and Related Performance Measures Data

(See Instructions. Use as many pages as necessary.)

2. Project Objective 

[X] Check if this is a status update for the previous budget period.

**Increase the number of Hispanic and low-income students attaining Bachelor of Science degrees from California State University, Monterey Bay in Science, Technology, Engineering, or Mathematics (STEM) fields.**

<table>
<thead>
<tr>
<th>2.a. Performance Measure</th>
<th>Measure Type</th>
<th>Quantitative Data</th>
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<tr>
<td>Increase full-time degree-seeking undergraduates enrolled in STEM majors by 50%.</td>
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<td></td>
<td>Target</td>
</tr>
<tr>
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<table>
<thead>
<tr>
<th>2.b. Performance Measure</th>
<th>Measure Type</th>
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</thead>
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<tr>
<td>Increase [STEM] students who persist from their first year to their second year by 40%.</td>
<td>PROGRAM</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
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<tr>
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<th>2.c. Performance Measure</th>
<th>Measure Type</th>
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<tr>
<td>Increase students graduating in STEM majors within six years of enrollment by 40%.</td>
<td>PROGRAM</td>
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<tr>
<td></td>
<td></td>
<td>Target</td>
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<td>Ratio</td>
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<td></td>
<td>35</td>
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</table>

Explanation of Progress (Include Qualitative Data and Data Collection Information)
In Year 3 of the grant, California State University Monterey Bay (CSUMB) made great strides toward the Project Objective of increasing “the number of Hispanic and low-income students attaining Bachelor of Science degrees” from CSUMB in STEM fields. In the 2013-14 Academic Year, CSUMB had 1249 full-time degree-seeking undergraduates enrolled in STEM majors (Performance Measure 2.a.). This represents 78% of our grant target. Given this trajectory, we are confident that we will achieve our target by the end of the project period. Persistence has also increased, with 655 students persisting from their first to their second year (Performance Measure 2.b.). This increase brings us within 18% of our target of 802 students. Finally, we are proud to report that we’ve achieved and exceeded our target of “increasing students graduating in STEM majors within six years of enrollment” (Performance Measure 2.c.) In 2013-14, 45% of STEM majors graduated within six years of enrollment.

Objective 5: Create, update, and evaluate courses for the new STEM majors and minors, to emphasize active, applied, and culturally authentic curriculum; critical and creative thinking; written and oral communication; quantitative literacy; and information literacy.

The Computer Science and Information Technology (CSIT) program is aligning their curriculum with the Association for Computing Machinery’s (ACM) “Curriculum Guidelines for Undergraduate Degree Programs in Computer Science (2013).” ACM is the principal professional organization for computing and these recommendations reflect a decade worth of changes in the field. Entering freshmen and transfer students in CSIT participated in a survey to measure ACM learning outcomes and career related knowledge and preparation as a baseline. This survey is taken again mid-way through their program to assess progress. Preliminary analysis of this assessment has illustrated several learning outcomes that students are not mastering, and this information is being used to inform curricular changes. When completed, this effort will bring the major in alignment with current industry and national standards, aligns with student interests, and better prepares our graduates for job opportunities and graduate studies. In Year 3, CSIT completed the initial revision of Introduction to Programming and Discrete Math (MATH 170). Moving into Year 4, CSIT will continue with course revisions, develop a teaching assistant program, and produce review and support materials.

The Marine Science major developed a research project-based course focused on the distribution of marine fishes and selected invertebrates across biogeographic regions along the California Coast (Marine Biogeography of California (MSCI 485)). This course addresses the need for upper division and capstone courses that provide a ‘culminating’ experience for the growing Marine Science program.

The Environmental Science, Technology & Policy (ESTP) major developed a bioreactor, which uses bacteria and vegetation to remediate agricultural runoff. The bioreactor is being used in a number of courses and for student and faculty research projects. According to faculty, the bioreactor provides students with an authentic idea of “what can be done in the real world” using their knowledge and training. The major also updated two courses (Geomorphic Systems (GEOL 360) and River Hydrology (GEOL 460)) to include state of the art landscape analysis equipment. All participating students found the course worthwhile. In Year 4, the major will continue curricular revisions and develop a new survey skills certification program in conjunction with professional surveyors in the region. The result will be high-impact learning experiences for a subset of undergraduate students, culminating in a special “survey skills” certification placed on their transcript.

The Biology major developed new curriculum at the introductory and upper division level. The Molecular and Cell Biology and Animal Physiology Lab (BIO 210L) is a foundational course that develops a sound understanding and practice of laboratory safety and laboratory science, exposes students to the major techniques used in molecular biology laboratories, and gives students hands-on experience exploring the form and function of major animal organ systems. At the upper division level, the major developed a new course, Marine Experimental Physiology (BIO 430), related to scientific research on environmental physiology of marine and estuarine organisms, with a particular focus on metabolic processes.

In Year 3, faculty developed three courses for the new Statistics minor: Mathematics Consultants (MATH 362S), Statistical Theory I (STAT 420), Statistical Theory II (STAT 421), and revised curriculum for Applied Probability and Statistics (MATH 320). They also developed an online R module and extensive notes that form a textbook for the students in STAT 250. Moving forward, they will create R learning modules for a 1-credit course (Statistical Computing Tools (STAT 210)) and they are exploring options for more online supplementary materials for the introductory statistics courses (STAT 250 and MATH 320). In addition, faculty and students are working to expand the Statistics minor into a major.
Objective 6: Expand and enhance STEM tutoring support and course assistants for courses in the new majors and minors.

In Year 3, the project developed course-specific tutoring materials for Ecology, Evolution, and Biodiversity (BIO 240) and Cellular and Molecular Biology (BIO 241), bringing our project total to 8 courses. Training materials focused on tutor session planning, introduction to developing learning outcomes, strategies for facilitating group collaborative learning, and questioning strategies to promote critical thinking and problem-solving. To date, the project has also trained 17 students to function as course assistants for introductory Chemistry (CHEM 109). Building on the success of the course assistants in Chemistry, the Computer Science and Information Technology (CSIT) major adopted a similar model for their introductory courses. Eleven (11) CSIT students served as course assistants during this reporting period.

Objective 7: Create a STEM faculty development program in science writing instruction.

The Writing and Professional Communication Associate (WPCA) made great progress in our science-writing program. The WPCA is working with faculty to develop scaffolded writing instruction and support for writing-intensive courses in biology, ecology, and chemistry. The group is creating writing development modules for critical reading skills and strategies for reviewing. The WPCA also piloted a workshop for faculty on the use of CSUMB’s Shared Criteria Writing Criteria as a mechanism to give formative and summative feedback to students. We will refine and expand this workshop based on faculty feedback.

At the student level, the WPCA piloted the use of Calibrated Peer Review (CPR), a web-based tool that improves the quality of peer feedback while reducing faculty instruction time. The WPCA also developed a writing fellows program to train upper-division students to serve as peer reviewers for lower-division students on high-stakes professional writing products. Preliminary analysis indicates positive outcomes on writing development and critical thinking skills as a result of the collaborative peer review process. This model is now being considered to support the writing-intensive science courses. Finally, the WPCA designed an innovative online summer writing support course. The 10-week course uses a combination of blogging, structured review and feedback assignments, reflections, and a writer’s inventory of goals to help students develop their written voice, audience awareness, and personal identity. Initial results indicate increased confidence in writing for multiple audiences; improvements in organization and structure; and greatly improved ability to edit based on feedback from others.

Objective 8: Create a student enrichment program, including internships and research experiences directly related to the new STEM majors and minors through partnerships with CSUMB research faculty, regional research institutions, and agencies.

In early 2014, CSUMB was awarded an Ocean Science Research Experiences for Undergraduates (REU) grant. This is the first Ocean Science REU at a HSI and the only one at a California State University (CSU) campus. Our work on undergraduate research and internships, enrichment programs, and regional partnerships laid the foundation for this successful grant proposal. We continue to strengthen partnerships and are expanding our programming to better serve first and second year students. For example, we offered interactive workshops on undergraduate research in collaboration with CSUMB’s Living Learning Community (LLC). Looking to Year 4, we may work with the First-Year Seminar (FYS) Coordinator on an FYS STEM course focused on undergraduate research and inquiry-based learning.

We are also working across our majors (particularly Biology and Environmental Science Technology and Policy) to develop on-going research and monitoring programs to engage first and second year students. These authentic, small-scale research projects allow us to reach a broad range of students with the “hands on” experience they need to stay excited and engaged in the discipline.
U.S. Department of Education
Grant Performance Report (ED 524B)
Project Status Chart

PR/Award # (11 characters): P031C110121

SECTION A - Performance Objectives Information and Related Performance Measures Data (See Instructions. Use as many pages as necessary.)

3. Project Objective [X] Check if this is a status update for the previous budget period.

Employ Data-Based Decision-Making to inform decisions, assess performance, and provide effective feedback for continuous improvement and production of high quality products and services.

3.a. Performance Measure

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<th>Measure Type</th>
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<tr>
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<td>Raw Number</td>
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3.b. Performance Measure

<table>
<thead>
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<td>Raw Number</td>
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</table>

Explanation of Progress (Include Qualitative Data and Data Collection Information)

Objective 9: Collect, analyze, and utilize program data to inform decision-making.
Data-based Decision-Making drove a number of program improvements, including a renewed focus on transfers and first-year students, and the creation of online support courses for key STEM courses. Our Assessment and Educational Research Associate conducted an audit of our assessment and evaluation tools. Based on her findings, we are improving a few key elements our surveys and tracking systems.

Objective 10: Produce products of program achievements and best practices that can be used by other Hispanic Serving Institutions, and that will be published in journals, posted on CSUMB's web site, and presented at professional conferences and other appropriate venues.
The program is communicating best practices and program findings related to mentor preparation, faculty engagement, undergraduate research, and use of technology and writing interventions to support traditionally underrepresented students in the sciences. Professional sessions include: Mentor Training, Engagement and Evaluation at the Council on Undergraduate Research (June 2014); Putting the You in UR: The influences of faculty participating in undergraduate research at the Professional and Organizational Development Network in Higher Education (November 2014); Participation in Undergraduate Research at Minority-Serving In-
A Dream Leveled or Maintained: Shifting STEM aspirations among low-income university students at the Association for the Study of Higher Education (November 2014); Space and Place: Creating Space for Diverse Students in Research through Reflective Writing, and Building, Visualizing and Activating Social Capital: Digital Tools to Make the Most Out of Undergraduate Research at the AAC&U conference on Diversity, Learning, and Student Success: Assessing and Advancing Inclusive Excellence (March, 2015); and The Reflective Researcher: The Role of Writing and Self-reflection in the Undergraduate Research Experience and a roundtable session about our pre and post surveys at the American Educational Research Association (April 2015).
SECTION B - Budget Information (See Instructions. Use as many pages as necessary.)

During the next project period, unexpended funds will continue to be used towards the scope of work as outlined in the proposal.

SECTION C - Additional Information (See Instructions. Use as many pages as necessary.)
The AIMS$^2$ Program  
(Attract, Inspire, Mentor and Support Students)  
California State University, Northridge  
Engineering and Computer Science HSI-STEM Initiative  
www.ecs.csun.edu/aims2

S. K. Ramesh, Ph.D., Principal Investigator  
Dean, College of Engineering and Computer Science  
Funded by an HSI-STEM grant from the US Department of Education  
Award P031C11031
The AIMS² (Attract, Inspire, Mentor and Support Students) Program- CSU, Northridge Engineering and Computer Science HSI-STEM Initiative

This collaborative project is led by the College of Engineering and Computer Science at California State University, Northridge, in partnership with Glendale Community College (GCC) and the College of the Canyons (COC). The Project Team held nine monthly meetings during the most recent project period from Oct 2013-Sep 2014. Every meeting includes standing agenda items that relate to the three primary project objectives and reports from team members on progress to date and issues of concern that need to be resolved. The meeting calendar, meeting agendas and presentations may be accessed on the project web site at http://www.ecs.csun.edu/aims2/presentations.html.

The program received national recognition from the Excelencia Foundation in Washington DC on Sep 30, 2014 for our work during the past three years for enhancing the success of underrepresented minorities in engineering and computer science: http://www.ecs.csun.edu/aims2/documents/ExcerptfromExcelenciaProgramBrochure_102014.pdf See https://www.youtube.com/watch?v=I0Fzz-1t78s&list=PLi-dqTm4tmeeG9SabKxNd75UJl4s3UHBK&index=3 for Congressman Cardenas’ remarks commending the program during the Excelencia event. Also given the success of our program, CSUN was invited to host one of the four White House STEM workshops this fall (October 7th, 2014) to discuss strategies and develop action plans to broaden participation of underrepresented minorities especially in engineering and computer science. Videos from the invitation only event that attracted top policy leaders, academics, and industry professionals are available online at https://www.youtube.com/user/ceccsuns

Summary of Project Assessment (Year 3):

The primary project objectives guided the evaluation as an embedded mixed methods case study design. The overall evaluation goal was to assess project performance measures with baseline and actual performance data at each campus (CSUN, Glendale CC and College of the Canyons). The data sources included AIMS2 students, faculty, staff and institutional data. Our data collection procedures employed journal guides, surveys, and interviews. Finally, our data analysis procedures utilized frequency analysis and thematic data analysis. The cohort model of our program required a unique assessment approach. Using an approach similar to the one we used in Year 2, we focused on two cohorts for the purposes of our Year 3 APR: Cohort 2 that began in Fall 2012 and Cohort 3 that began in Fall 2013. Baseline data and actual performance data were collected by cohort, analyzed by cohort, and assessed by cohort targets. The 12 primary objectives of our grant shape the 35 performance measures that were used. The 35 performance measures guide assessment tasks and included the following types of measures: project (4), non-cohort (3), cohort (21). The data is shaped by 28 quantitative, 7 qualitative measures.

Big Picture Findings (Year 3):

Based on our assessment and evaluation of the 56 total measures, 36 measures (66%) met or exceeded project targets or demonstrated improvement in quality for both cohorts. The data for the quantitative measures (n=49) reveal that 30 (or 61%) measures met or exceed project targets. Results for the qualitative measures (n=7) point to improvement in quality of peer-peer interaction, student-faculty interaction, and research participation. All 4 project measures—transfer (1a), course articulation (2a/b), and completion (7a) met or exceeded project targets in the period. All 3 non-cohort measures—Counselor STEM PD (3a) at GCC/COC, academic advisors at CSUN (8a)—met or exceeded project targets. 32 of 49 (65%) cohort measures across campuses met or exceeded targets in the period. Transfer achievement exceeded target during the evaluation period. 64 new CSUN transfer students entered in 2013-14 from COC/GCC in a field housed in CECS. This represented a 178% increase over the project target (n=36) and a 305% increase over baseline figure (n=21) from 2010-11. Program completion exceeded target during the evaluation period. 39.2% (60/153) completed a degree program for the most recent period vs. 30.9% (21/68) project target. This also represents an increase over the first project year of 29.3% (22/75), and a slight increase over the second project year of 38.8% (31/80). The following strengths were observed in cohort measures in Year 3: GCC/COC counselor STEM professional development continues to show a steady increase; COC academic advising in Cohort 2 went up; and COC/GCC student-faculty interaction increased significantly. Student-faculty interaction at all three campuses dramatically increased during the period. We also observe consistent and strong student participation in CSUN faculty research projects. CSUN academic advising and peer mentoring increased in cohort 2.

To improve CSUN cohort peer mentoring of GCC/COC cohorts we have planned more joint activities between the cohorts in the coming year. Also with the growth in research project participation we are seeing several GCC/COC
cohort students working with CSUN cohort students. We expect that this will lead to an increase in mentoring opportunities enabling us to achieve or approach the target measure in the future. With respect to peer tutoring the data shows that we feel below the target measure for cohort 2. Many of the students in cohort 2 were in senior standing and doing well academically. Thus they may not have needed the same level of peer tutoring as they had when they first entered the program.

General Trends in Qualitative Measures:

In general, results reveal positive effects of student-faculty interaction, peer-peer interaction, and faculty research participation on student experiences and learning. Overall, 7 of 7 (100%) qualitative measures demonstrate improvement in quality of student-faculty and peer environments on campus and enhanced research environment for student participation. Students in the cohort who participated in faculty research projects had very positive learning experiences. Faculty research enhanced student learning by allowing students to apply knowledge relevant to their fields of study. Research projects connected students to their future careers and provided them with opportunities for skill building and identity development in the profession. Encouragement and support for developing beliefs in abilities to succeed is an important non-cognitive skill that has been enhanced for several cohort students. Cohort participants found a support system in their mentors that served to mitigate transfer shock, navigate academic systems, and guide them through their transition to CSUN, and through programs. In general, advising, workshops, labs, and faculty research are project strengths. Overall, student-faculty interaction tends to have the strongest effects on student experiences. Finally, peer interaction in the form of peer mentoring and tutoring appears to have strong, positive effects on student transitions, and learning.

During the project period the faculty team from GCC, COC and CSUN has reviewed gaps in the existing articulation agreements between our institutions [artifact link] and has been working diligently to develop curricula to address the gaps. All cohort students and faculty have been provided with iPad’s for use in their classes and research projects. Training sessions were offered to faculty members who received the iPad’s to develop curricula and e-texts for use in their classes. Usage statistics reveal that students in cohort 2 used their iPad’s 13,365 times, while those in cohort 3 used their iPad’s 5,554 times. The average usage/student in cohort 2 was 461 and cohort 3 was 617. Students report using their iPad’s to do their homework, access e-Texts and references for their classes and research, as well as peer/social interaction amongst fellow cohort members.

The success of cohort students is a testament to the quality and impact of the program. By way of example from cohort 3 – Catherine Hartnek was elected as the President of the IEEE-HKN (Electrical Engineering Honor Society) Lambda Beta Chapter at CSUN. Other cohort students have made presentations on their research at regional and national meetings including CCSC, ASM, SAMPE, and ASEE. Cohort students working under the supervision of their faculty mentor – Prof. Gloria Melara won a first Place Award for their poster – “An interactive classroom management tool – Class Pi” at the CCSC conference in March 2014. Details on student accomplishments may be found online on the project site at [artifact link].

The external advisory committee [artifact link] meets annually with the project team to review progress in meeting the objectives and offers suggestions for improvement. The data from the most recent annual performance report indicates that we have met or surpassed several of the program’s goals and objectives.
Intangible benefits

AIMS² cohort students have been actively engaged in research projects with faculty mentors on a variety of topics in engineering and computer science. This experience has impacted their learning positively and helped build self-confidence. Several students’ from our cohort have received scholarships and support to attend national conferences sponsored by HACU, HEENAC, and AHSIE. Many students have presented their work at regional and national conferences further enhancing their learning experiences. For an updated list of student accomplishments please visit the project web site at http://www.ecs.csun.edu/aims2/student_accomplishments.html

Locally students from the cohorts continue to present their research posters and projects during socials organized to welcome new and incoming cohort students from CSUN, GCC and COC. This has been an empowering experience for both groups – inspiring the incoming students while strengthening the communication skills and confidence of the continuing students.

Hearing about the success of our students, we were approached by Los Angeles Mission College (another HSI-STEM award recipient from our region) about some of their students participating in our summer research program. Based on interviews by the faculty mentors we were able to provide research opportunities for four LAMC students during summer 2013. These students were supported by LAMC but benefited from the interaction with our cohort on the summer research projects. We have continued this interaction over summer 2014.

The PI of the grant Dr. Ramesh was invited to be on a best practices panel at AHSIE 2014 where other faculty and staff from the grant also presented papers on our ongoing projects. Following that meeting and in conversations with our Program Director Ms. Sarah Beaton, a team of computer science students from the AIMS² cohort have been working to develop an HSI-STEM grantee web portal to enable grantees across the country to collaborate and share their experiences. The web site has been built and is expected to be deployed shortly. This is a great example of the creativity and talent of the students we serve under this grant which has actually resulted in a product that is of value to the entire community.

Several students from the AIMS² cohort also swept the top prizes in the Regional CCSC conference hosted and held at CSU Northridge in March 2014. For details see http://www.ecs.csun.edu/aims2/documents/CCSCCompetitionFirstPlaceWinners.pdf

The AIMS² iPad initiative that was launched during Year 2 has been very successful in improving collaboration and communication between students in the cohorts. The devices are used by the students extensively in all their classes. The AIMS² faculty members from CSUN, GCC and COC have been using the iPad’s for collaborative curriculum development. One of the key benefits has been the rapid progress made in addressing the gaps in articulation between the community colleges and CSUN. Although the articulation process itself may take a while to be completed based on the campus academic review protocols, the iPad enabled collaborative curriculum development efforts by the faculty from CSUN, GCC and COC ensures that students transferring into our programs have the background and appropriate pre-requisite content to be successful in upper division courses.
The AIMS$^2$ program has drawn the attention of key industry partners and national initiatives aimed at supporting underrepresented minorities in our disciplines. In September the program was recognized by Excelencia in Education and Congressman Cardenas for our work to date in supporting and enhancing the graduation of underrepresented minorities in engineering and computer science. See http://csunshinetoday.csun.edu/media-releases/csun-engineering-and-computer-science-program-honored-by-excelencia-foundation/ and http://www.edexcelencia.org/media/press-releases/excelencia-announces-top-programs-increasing-latino-student-success for more information.

Congressman Cardenas’ remarks may be found online at https://www.youtube.com/watch?v=i0Fzz-1t78s&list=PLi-dqTm4tmeeG95SabKxNd75UJJ4s3UH8K&index=3

Partially as a result of the success of the AIMS$^2$ program, CSUN was invited by the White House Office of Science and Technology Policy to host one of the four 2014 White House STEM Workshops at CSU Northridge on October 7, 2014. This event attracted top policy leaders, educators, industry and non-profits to discuss broadening participation of minorities in the STEM disciplines. Videos from the event at archived and available online at https://www.youtube.com/user/cecsscsun

CSUN President Dianne Harrison was subsequently invited to attend the White House College Opportunity Summit on December 4th, 2014 where she and fellow Presidents made specific commitments related to broadening participation and success in STEM initiatives. CSUN’s commitment that highlights the AIMS$^2$ program may be found on Page 91 of the report online at http://www.whitehouse.gov/sites/default/files/docs/121514_college_opportunity_commitment_report.pdf

Here is an excerpt from that section :  

“California State University Northridge (CSUN) will implement programs to reduce the 6-year STEM graduation rate gap by 50 percent between underrepresented minorities and non-underrepresented minorities (from 14% to 7%), and between Pell and non-Pell recipients (from 9% to 4%). CSUN commits to improving their AIMS$^2$ program to increase by 10 percent the number of students completing program requirements by 2015. Additionally, CSUN will be working towards an overall 6 percent increase in 6-year STEM graduation rate for the incoming class of 2019 and an 8 percent increase in 4-year STEM graduation rate for the incoming class of 2021.”

The students in our cohorts really appreciate the difference that this program is making in their lives and several of them are engaged actively in outreach efforts to promote engineering in K-12. Since the inception of the recent HSI-STEM grant we have made huge strides to address the academic needs of students in the cohort that includes proactive academic advisement and tracking, organized tutoring, peer and faculty mentoring, hands on research opportunities and project based learning, career advising and eventual transition to the workforce or advanced studies. Students in the cohort are supported with stipends to motivate and inspire them to succeed. Students in the cohort are excelling in their studies, making steady progress towards graduation, and working closely with faculty and peer mentors who provide academic and career guidance as well as opportunities to work on relevant “hands-on” projects.
This grant is already having an impact on the academic success and career choices of the talented youth in our region, and ultimately, we hope an enduring impact on the growth and health of California’s economy. As these talented students, who represent both minorities and females, matriculate to the university, they will, in turn, serve as role models for others in their communities. This collaborative partnership between CSUN, GCC and COC will be instrumental in creating a larger, more inclusive pool of STEM graduates.
<table>
<thead>
<tr>
<th>Project Performance Measure</th>
<th>CC Campus</th>
<th>Measure Type</th>
<th>Baseline and Target Data</th>
<th>Actual Performance Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>1a</td>
<td>After two years, increase by 15 the number of Hispanic and low-income students who transfer from College of the Canyons and Glendale Community College to CSUN in STEM fields over the 2010-11 baseline number</td>
<td>Project 2010-11</td>
<td>21 15 36 64</td>
<td>2013-14</td>
</tr>
<tr>
<td>2a</td>
<td>Increase by 15 the number of STEM courses that articulate over the 2010-11 baseline number</td>
<td>Project 2010-11</td>
<td>77 15 92 93</td>
<td>2013-14</td>
</tr>
<tr>
<td>2b</td>
<td>Increase by 15 the number of articulation agreements over the 2010-11 baseline number</td>
<td>Project 2010-11</td>
<td>77 15 92 93</td>
<td>2013-14</td>
</tr>
<tr>
<td>3a</td>
<td>Increase by two the number of counselors at College of the Canyons and Glendale Community College who participate in STEM professional development workshops over the 2010-11 baseline number</td>
<td>COC 2010-11</td>
<td>0 2 2 2</td>
<td>2013-14</td>
</tr>
<tr>
<td>3b</td>
<td>Increase by two the number of counselors at College of the Canyons and Glendale Community College who participate in STEM professional development workshops over the 2010-11 baseline number</td>
<td>GGC 2010-11</td>
<td>0 2 2 2</td>
<td>2013-14</td>
</tr>
<tr>
<td>3c</td>
<td>Increase by two the number of counselors at College of the Canyons and Glendale Community College advising/counseling sessions with students in STEM fields over the 2010-11 baseline number</td>
<td>Project Fall 2012</td>
<td>4*15 67 80</td>
<td>2013-14</td>
</tr>
<tr>
<td>4a</td>
<td>Increase by 75 percent the number of College of the Canyons and Glendale Community College students who participate in tutoring sessions in STEM classes and who participate in STEM academic workshops over the 2010-11 baseline rate</td>
<td>COC 2010-11</td>
<td>7/8 or 38% 75% 68 75 88 100</td>
<td>2013-14</td>
</tr>
<tr>
<td>4b</td>
<td>Increase by 75 percent the College of the Canyons and Glendale Community College students who enroll in online courses with CSUN faculty over the 2010-11 baseline rate</td>
<td>GGC 2010-11</td>
<td>0 15 1 0</td>
<td>2013-14</td>
</tr>
<tr>
<td>4c</td>
<td>Increase by 75 percent the College of the Canyons and Glendale Community College students who enroll in online courses with CSUN faculty over the 2010-11 baseline rate</td>
<td>Project Fall 2012</td>
<td>0 15 1 0</td>
<td>2013-14</td>
</tr>
<tr>
<td>5b</td>
<td>Increase by 90 percent the frequency of student-faculty interactions over the 2010-11 baseline rate</td>
<td>COC 2010-11</td>
<td>0 80% 80% 80%</td>
<td>2013-14</td>
</tr>
<tr>
<td>6a</td>
<td>Increase by 15 the number of College of the Canyons and Glendale Community College students who participate in peer-peer tutoring sessions over the 2010-11 baseline number</td>
<td>COC 2010-11</td>
<td>0 15 8 8</td>
<td>2013-14</td>
</tr>
<tr>
<td>6b</td>
<td>Increase by 15 the number of College of the Canyons and Glendale Community College students who participate in peer-peer tutoring sessions over the 2010-11 baseline number</td>
<td>Project Fall 2012</td>
<td>0 15 8 8</td>
<td>2013-14</td>
</tr>
<tr>
<td>6c</td>
<td>Increase by 15 the number of College of the Canyons and Glendale Community College students who are peer mentored by CSUN students over the 2010-11 baseline number</td>
<td>GGC 2010-11</td>
<td>0 15 1 1</td>
<td>2013-14</td>
</tr>
<tr>
<td>7a</td>
<td>After two years, increase from 26% to 30% the number of Hispanic and low-income students who complete baccalaureate degrees in STEM fields over the 2010-11 baseline number</td>
<td>Project 2010-11</td>
<td>18/68 or 26.5% 4% 21 15 38 120 39 2 153</td>
<td>2013-14</td>
</tr>
<tr>
<td>8a</td>
<td>Increase by one the number of academic advisors at CSUN in STEM fields over the 2010-11 baseline number</td>
<td>Project 2010-11</td>
<td>3 1 4 4</td>
<td>2013-14</td>
</tr>
<tr>
<td>9a</td>
<td>Increase by two the number of advising/counseling sessions with CSUN students in STEM fields over the 2010-11 baseline number</td>
<td>Project Fall 2012</td>
<td>4*29 69 95</td>
<td>2013-14</td>
</tr>
<tr>
<td>9b</td>
<td>Increase by 75 percent the CSUN students who participate in STEM academic workshops over the 2010-11 baseline rate</td>
<td>Project Fall 2012</td>
<td>6/29 or 23% 75% 11/29 38 6/29 21</td>
<td>2013-14</td>
</tr>
<tr>
<td>9c</td>
<td>Increase by 75 percent the students who participate in supplemental laboratory sessions with CSUN faculty over the 2010-11 baseline rate</td>
<td>Project Fall 2012</td>
<td>9/29 or 24% 75% 12/29 41 1/29 3</td>
<td>2013-14</td>
</tr>
<tr>
<td>9d</td>
<td>Increase by 50 percent CSUN students who participate in research-related activities with faculty in STEM fields</td>
<td>Project Fall 2012</td>
<td>0 29 0% 50% 1/29 3 9/29 3</td>
<td>2013-14</td>
</tr>
<tr>
<td>11a</td>
<td>Increase by 90 percent the frequency of student-faculty interactions over the 2010-11 baseline rate</td>
<td>Project Fall 2012</td>
<td>95 90% 181 100 834 181</td>
<td>2013-14</td>
</tr>
<tr>
<td>12a</td>
<td>Increase by 30 percent the number of CSUN students who participate in a cohort model over the 2010-11 baseline number</td>
<td>Project Fall 2012</td>
<td>0 12/29 3 29/29 100</td>
<td>2013-14</td>
</tr>
<tr>
<td>12b</td>
<td>Increase by 30 percent the number of CSUN students who participate in peer-peer tutoring sessions over the 2010-11 baseline number</td>
<td>Project Fall 2012</td>
<td>17 30% 22/29 76 10/29 34</td>
<td>2013-14</td>
</tr>
<tr>
<td>12c</td>
<td>Increase by 30 percent the number of CSUN students who participate in peer mentoring over the 2010-11 baseline number</td>
<td>Project Fall 2012</td>
<td>7 30% 9/29 31 22/29 76</td>
<td>2013-14</td>
</tr>
</tbody>
</table>

Note: Shaded rows indicate that actual performance measure data met or exceeded project targets for the cohort during the performance period.
### Project Performance Measure

<table>
<thead>
<tr>
<th>Measure Type</th>
<th>Baseline and Target Data</th>
<th>Actual Performance Data</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Project</td>
<td>Measure Type</td>
</tr>
<tr>
<td>1a Increase by 15 the number of Hispanic and low-income students who transfer from College of the Canyons and Glendale Community College to CSU in STEM fields over the 2010-11 baseline number</td>
<td>Project 2010-11</td>
<td>CC Campus</td>
</tr>
<tr>
<td>2a Increase by 15 the number of STEM courses that articulate over the 2010-11 baseline number</td>
<td>Project 2010-11</td>
<td>CC Campus</td>
</tr>
<tr>
<td>2b Increase by 15 the number of articulation agreements over the 2010-11 baseline number</td>
<td>Project 2010-11</td>
<td>CC Campus</td>
</tr>
<tr>
<td>3a Increase by two the number of counselors at College of the Canyons and Glendale Community College who participate in STEM professional development workshops over the 2010-11 baseline number</td>
<td>Project 2010-11</td>
<td>COC</td>
</tr>
<tr>
<td>3b Increase by four the number of College of the Canyons and Glendale Community College advising/counseling sessions with students in STEM fields over the 2010-11 baseline number</td>
<td>Project Fall 2013</td>
<td>CC Campus</td>
</tr>
<tr>
<td>3c Increase by 75 percent the number of College of the Canyons and Glendale Community College students who participate in STEM professional development workshops over the 2010-11 baseline number</td>
<td>Project Fall 2013</td>
<td>COC</td>
</tr>
<tr>
<td>4a Increase by 75 percent the College of the Canyons and Glendale Community College students who participate in tutoring sessions in STEM classes and who participate in STEM academic workshops over the 2010-11 baseline rate</td>
<td>Project Fall 2013</td>
<td>COC</td>
</tr>
<tr>
<td>4b Increase by 75 percent the College of the Canyons and Glendale Community College students who enroll in online courses with CSU faculty over the 2010-11 baseline rate</td>
<td>Project Fall 2013</td>
<td>GCC</td>
</tr>
<tr>
<td>5a Increase by 30 percent the number of CSUN students who participate in peer-to-peer tutoring sessions over the 2010-11 baseline number</td>
<td>Project Fall 2013</td>
<td>GCC</td>
</tr>
<tr>
<td>6a Increase by 15 the number of College of the Canyons and Glendale Community College students who are peer mentored by CSUN students over the 2010-11 baseline number</td>
<td>Project Fall 2013</td>
<td>GCC</td>
</tr>
<tr>
<td>7a Increase by 15 the number of CSUN students who participate in STEM classes (identified as barriers) over the 2010-11 baseline rate</td>
<td>Project 2010-11</td>
<td>CC Campus</td>
</tr>
<tr>
<td>8a Increase by two the number of academic advisors at CSU in STEM fields over the 2010-11 baseline number</td>
<td>Project 2010-11</td>
<td>CC Campus</td>
</tr>
<tr>
<td>9a Increase by 75 percent the CSU students who participate in tutoring sessions in STEM classes identified as barriers over the 2010-11 baseline rate</td>
<td>Project Fall 2013</td>
<td>CC Campus</td>
</tr>
<tr>
<td>9b Increase by 75 percent the CSU students who participate in STEM academic workshops over the 2010-11 baseline rate</td>
<td>Project Fall 2013</td>
<td>CC Campus</td>
</tr>
<tr>
<td>9c Increase by 75 percent the students who participate in supplemental labs sessions with CSUN faculty over the 2010-11 baseline rate</td>
<td>Project Fall 2013</td>
<td>CC Campus</td>
</tr>
<tr>
<td>9d Increase by 75 percent the CSU students who participate in research-related activities with faculty in STEM fields</td>
<td>Project Fall 2013</td>
<td>CC Campus</td>
</tr>
<tr>
<td>11a Increase by 90 percent the number of CSUN students who participate in a cohort model over the 2010-11 baseline number</td>
<td>Project Fall 2013</td>
<td>CC Campus</td>
</tr>
<tr>
<td>11b Increase by 75 percent the number of CSUN students who participate in peer-to-peer tutoring sessions over the 2010-11 baseline number</td>
<td>Project Fall 2013</td>
<td>CC Campus</td>
</tr>
<tr>
<td>11c Increase by 30 percent the number of CSUN students who participate in peer mentoring over the 2010-11 baseline number</td>
<td>Project Fall 2013</td>
<td>CC Campus</td>
</tr>
</tbody>
</table>

**Note:** Shaded rows indicate the actual performance measure data met or exceeded project targets for the cohort during the performance period.
2014 Annual Performance Report

Submitted:
U.S. Department of Education
Title III - Part F - HSI STEM and Articulation Programs

ED 524B Cover Sheet

1. PR/Award #: P031C110031
2. Grantee NCES ID#: 110608
3. Project Title: CSU, Northridge Engineering and Computer Science HSI-STEM Initiative
4. Grantee Name: The University Corporation -- Engineering & Computer Science
5. Grantee Address: 18111 Nordhoff Street Northridge, CA 91330
6. Project Director Name: S. Ramesh Title: Dean
   Ph #: 818-677-4501 Fax #: 818-677-2140
   Email Address: s.ramesh@csun.edu

Reporting Period Information
7. Reporting Period: From: 10/01/2013 To: 09/30/2014

Budget Expenditures (To be completed by your Business Office.)
8. Budget Expenditures:

<table>
<thead>
<tr>
<th></th>
<th>Federal Grant Funds</th>
<th>Non-Federal Funds (Match/Cost Share)</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Previous Budget Period</td>
<td>$954,603.00</td>
<td>$0.00</td>
</tr>
<tr>
<td>b. Current Budget Period</td>
<td>$95,453.00</td>
<td>$0.00</td>
</tr>
<tr>
<td>c. Entire Budget Period (For Final Performance Reports only)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Indirect Cost Information (To be completed by your Business Office.)
9. Indirect Costs
   a. Are you claiming indirect costs under this grant? No
   b. If yes, do you have an Indirect Cost Rate Agreement approved by the Federal Government?
   c. If yes, provide the following information:
      Period Covered by the Indirect Cost Rate Agreement: From: To:
      Approving Federal agency: __ED__ Other (Please specify):
      Type of Rate: (For Final Performance Reports only)
   d. For Restricted Rate Programs (check one) -- Are you using a restricted indirect cost rate that:
      Is included in your approved Indirect Cost Rate Agreement?
      Compiles with 34 CFR 76.564(c)(2)?

Human Subjects (Annual Institutional Review Board (IRB) Certification)
10. Is the annual certification of Institutional Review Board (IRB) approval attached? N/A

Performance Measures Status and Certification
11. Performance Measures Status
   a. Are complete data on performance measures for the current budget period included in the Project Status Chart? Yes
   b. If no, when will the data be available and submitted to the Department?

12. Authorized Representative Name: Scott Perez
    Date: 01/02/2015
    Phone: 818-677-2901
    E-mail: scott.perez@csun.edu
Summary of Project Assessment (Year 3):
The primary project objectives guided the evaluation as an embedded mixed methods case study design. The overall evaluation goal was to assess project performance measures with baseline and actual performance data at each campus (CSUN, Glendale CC and College of the Canyons). The data sources included AIMS2 students, faculty, staff and institutional data. Our data collection procedures employed journal guides, surveys, and interviews. Finally, our data analysis procedures utilized frequency analysis and thematic data analysis. The cohort model of our program required a unique assessment approach. Using an approach similar to the one we used in Year 2, we focused on two cohorts for the purposes of our Year 3 APR: Cohort 2 that began in Fall 2012 and Cohort 3 that began in Fall 2013. Baseline data and actual performance data were collected by cohort, analyzed by cohort, and assessed by cohort targets. The 12 primary objectives of our grant shape the 35 performance measures that we assessed. The 35 performance measures guide assessment tasks and included the following types of measures: project (4), non-cohort (3), cohort (21). The data is shaped by 28 quantitative, 7 qualitative measures.

Big Picture Findings (Year 3):
Based on our assessment and evaluation of the 56 total measures, 36 measures (66%) met or exceeded project targets or demonstrated improvement in quality for both cohorts. The quantitative measures (n=49) revealed that 30 (61.2%) measures met or exceeded project targets. Results for the qualitative measures (n=77) point to improvement in quality of peer-peer interaction, student-faculty interaction, and research participation.

All 4 project measures—transfer (1a), course articulation (2a/b), and completion (7a) met or exceeded project targets in the period. All 3 non-cohort measures—Counselor STEM PD (3a) at GCC/COC, academic advisors at CSUN (8a)—met or exceeded project targets. 32 of 49 (65%) cohort measures across campuses met or exceeded targets in the period. Transfer achievement exceeded target during the evaluation period. 64 new CSUN transfer students entered in 2013-14 from COC/GCC in a field housed in CECS. This represented a 178% increase over the project target (n=36) and a 305% increase over baseline figure (n=21) from 2010-11. Program completion exceeded target during the evaluation period. 39.2% (60/153) completed a degree program for the most recent period vs. 30.9% (21/68) project target. This also represents an increase over the first project year of 29.3% (22/75), and a slight increase over the second project year of 38.8% (31/80). The following strengths were observed in cohort measures in Year 3: GCC/COC counselor STEM professional development continues to show a steady increase; COC academic advising in Cohort 2 went up; and COC/GCC student-faculty interaction increased significantly. Student-faculty interaction at all three campuses dramatically increased during the period. We also observed consistent and strong student participation in CSUN faculty research projects. CSUN academic advising and peer mentoring increased in cohort 2.

Cohort Academic Advising at GCC/COC generally did not meet project targets. Similarly peer tutoring participation at CSUN was a mixed bag during this performance period with the exception of peer tutoring within cohort 3. Academic workshops and supplemental labs at CSUN generally fell below targets. Other cross-campus collaborative measures that fell short of targets were GCC/COC cohort enrollment in CSUN online courses, and CSUN cohort peer mentoring of GCC/COC cohorts. In retrospect the first measure may be too constraining since it specifically refers to students in the GCC/COC cohort enrolling in online courses at CSUN as opposed to online courses in general. We will seek to change this measure to capture that information for our next APR. To improve CSUN cohort peer mentoring of GCC/COC cohorts we have planned more joint activities between the cohorts in the coming year. Also with the growth in research project participation we are seeing several GCC/COC cohort students working with CSUN cohort students. We expect that this will lead to an increase in mentoring opportunities enabling us to achieve or approach the target measure in the future. With respect to peer tutoring the data shows that we feel below the target measure for cohort 2. Many of the students in cohort 2 were in senior standing and doing well academically. Thus they may not have needed the same level of peer tutoring as they had when they first entered the program.

General Trends in Qualitative Measures
In general, results reveal positive effects of student-faculty interaction, peer-peer interaction, and faculty research participation on student experiences and learning. Overall, 7 of 7 (100%) qualitative measures demonstrate improvement in quality of student-faculty and peer environments on campus and enhanced research environment for student participation. Students in the cohort who participated in faculty research projects had very positive learning experiences. Faculty research enhanced student learning by allowing students to apply knowledge relevant to their fields of study. Research projects connected students to their future careers and provided them with opportunities for skill building and identity development in the profession. Encouragement and support for developing beliefs in abilities to succeed is an important non-cognitive skill that has been enhanced for several cohort students. Cohort participants found a support system in their mentors that served to mitigate transfer shock, navigate academic systems, and guide them through their transition to CSUN, and through programs. In general, advising, workshops, labs, and faculty research are project strengths. Overall, student-faculty interaction tends to have the strongest effects on student experiences. Finally, peer interaction in the form of peer mentoring and tutoring appears to have strong, positive effects on student transitions, and learning.

During the project period the faculty team from GCC, COC and CSUN has reviewed gaps in the existing articulation agreements between our institutions. http://www.ecs.csun.edu/aims2/course_articulation.html and has been working diligently to develop curricula to address the gaps. All cohort students and faculty have been provided with iPad’s for use in their classes and research projects. Training sessions were offered to faculty members who received the iPad’s to develop curricula and e-texts for use in their classes. Usage statistics reveal that students in cohort 2 used their iPad’s 13,365 times, while those in cohort 3 used their iPad’s 5,554 times. The average usage/student in cohort 2 was 461 and cohort 3 was 617. Students report using their iPad’s to do their homework, access e-Texts and references for their classes and research, as well as peer/social interaction amongst fellow cohort members.

The success of cohort students is a testament to the quality and impact of the program. By way of example from cohort 3 – Catherine Hartnek was elected as the President of the IEE-HKN (Electrical Engineering Honor Society) Lambda Beta Chapter at CSUN. Other cohort students have made presentations on their research at regional and national meetings including ECSC, ASCE, SAMPE, and ASEE. Cohort students working under the supervision of their faculty mentor – Prof. Gloria Melara won a first Place Award for their poster – “An interactive classroom management tool – Class Pi” at the CCSC conference in March 2014. Details on student accomplishments may be found online at the project site at http://www.ecs.csun.edu/aims2/student_accomplishments.html

The external advisory committee http://www.ecs.csun.edu/aims2/advisory_committee.html meets annually to review progress to project team and offers suggestions for improvement. Section A describes in detail the project’s goals and the progress we have made to date in achieving the expected outcomes and performance measures—many of which have been met or surpassed.
Section A: Performance Objectives

Project Objective: 1. Increase the transfer of Hispanic and low-income students from College of the Canyons and Glendale Community College to CSUN in STEM fields

Check if this is a status update for the previous budget period.

<table>
<thead>
<tr>
<th>Performance Measure</th>
<th>Performance Type</th>
<th>Quantitative Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.a. After two years, increase by 15 the number of Hispanic and low-income students who transfer from College of the Canyons and Glendale Community College to CSUN in STEM fields over the 2010-11 baseline number**</td>
<td>Target</td>
<td>Actual Performance Data</td>
</tr>
<tr>
<td></td>
<td>Raw Number</td>
<td>Ratio %</td>
</tr>
<tr>
<td></td>
<td>CSUN institutional data</td>
<td>College of the Canyons and Glendale Community College planning to major in a field housed in the College of Engineering and Computer Science</td>
</tr>
</tbody>
</table>

Explanation of Progress (Include qualitative data and data collection information)

Explanation of Progress (Include Qualitative Data and Data Collection Information)

Evaluation Data Sources and Methods for the Objective

During the performance period, we collected actual performance data on the single performance measure for this objective. During the performance period of the first project year (2012-2013), we collected baseline data for the performance measure. Quantitative data sources for both baseline and actual performance data for this measure are from CSUN institutional data (from CSUN’s Office of Institutional Research). During the performance periods for the last three project years, we worked with CSUN’s Office of Institutional Research to prepare the 2010-11 baseline data on student transfer figures for both College of the Canyons (COC) and Glendale Community College (GCC) and to produce the 2013-14 figures of actual performance data.

Description of Preliminary Findings Related to the Objective

The baseline data for this measure (1a) is from CSUN’s Office of Institutional Research and includes institutional data (i.e., not project cohort data). Accordingly, the base-line data do not correspond to the number of project cohort participants but rather to all students who met the criteria for inclusion in the transfer cohort (see next sentence). The 2010-11 baseline data for all Hispanic and/or low-income (i.e., Pell grant recipients) students who transferred from College of the Canyons and Glendale Community College to CSUN planning to major in a field in the College of Engineering and Computer Science follows: 14 students from College of the Canyons and seven from Glendale Community College, for a total of 21 students from both colleges. Consequently, the target number of Hispanic and low-income students who will have transferred from College of the Canyons and Glendale Community College by Spring 2013 (two academic years from baseline) is 36, which represents an increase of 15 over the 2010-11 baseline number. When we interpret actual performance data against the project target of 36, we find that 64 students transferred from College of the Canyons and Glendale Community College in 2013-14. That is, 64 new CSUN transfer students entered in 2013-14 from College of the Canyons and Glendale Community College planning to major in a field housed in the College of Engineering and Computer Science. The increase in the number of new transfer students in 2013-14 (n=64) represents approximately a 178% increase over the project target (n=36) and a 305% increase over the baseline figure (n=21) from 2010-11. While the number of new transfer students in 2013-14 (n=64) surpassed the baseline and target measures, we note that the number represents near parity with the number of new transfer students from College of the Canyons and Glendale Community College in the first project year (n=65). In the current performance period, we can say that this project objective has been achieved given the performance data on this measure.

Description of Project Activities Related to the Objective

During the performance period, project faculty and staff supported the achievement of this objective through their efforts with cohort participants at College of the Canyons and Glendale Community College. Over the third project year, faculty mentors and project staff completed work to form two new student cohorts (Cohort 4 and Cohort 5, which will be reported next performance period) at both College of the Canyons and Glendale Community College. Anticipated and actual project activities at both community colleges include tutoring, mentoring, academic excellence workshops (College of the Canyons), textbook award program, joint leadership conference (College of the Canyons), joint outreach efforts (College of the Canyons), and engineering boot camps (College of the Canyons). In addition, project faculty at both CSUN and College of the Canyons/Glendale Community College have worked collaboratively to support early contact and connections between community college students and CSUN, including community college cohort attendance at CSUN’s Senior Project Design Showcase; CSUN’s Tech Fest; AIMS2 socials with CSUN, COC, and GCC students; and events hosted by and on Glendale Community College's/College of the Canyon’s campuses for project faculty and students across institutions to attend. Finally, during the performance period, select CSUN, Glendale Community College, and College of the Canyons cohort students participated in CSUN faculty mentor research projects during the Summer 2014 session (see "Description of Project Activities Related to the Objective" for Objective 10 below).

Plans to Use of Performance Data to Monitor Progress

With actual performance data for the last three project years for the performance measure of this objective, we plan to publish the figures from this year’s report on our project’s website (http://www.ecs.csun.edu/aims2/) and discuss progress related to COC/GCC transfer students at our project meetings. To support transfers to CSUN, we developed relationships through outreach to colleges like Los Angeles Mission College, from which we had participants in their Title V/HSI-STEM grant Join a summer research project with CSUN AIMS2 faculty and transfer to CSUN. As we move forward into the next performance period, we plan to continue these outreach efforts and anticipate that the Office of Institutional Research will produce actual student transfer data (as the receiving institution) from the 2014-15 academic year in January 2015. Accordingly, we plan to continue data collection to measure this objective with annual secondary data extracts from the Office of Institutional Research for each academic year to inform our discussions of progress.
Project Objective: 2. Increase the number of courses that articulate from College of the Canyons and Glendale Community College to CSUN and articulation agreements between College of the Canyons and Glendale Community College and CSUN.

Check if this is a status update for the previous budget period.

### Performance Measure

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<td>2.a. Increase by 15 the number of STEM courses that articulate over the 2010-11 baseline number**</td>
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<tr>
<td>2.b. Increase by 15 the number of articulation agreements over the 2010-11 baseline number**</td>
<td>Project</td>
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### Explanation of Progress (Include qualitative data and data collection information)

**Explanation of Progress (Include Qualitative Data and Data Collection Information)**

**Evaluation Data Sources and Methods for the Objective**

The two performance measures (2a and 2b) for this objective assess the same outcome: articulated courses. In the case of this objective, an articulated course is equivalent to an articulation agreement within the context of this project. Accordingly, performance measures 2a and 2b use the same baseline data and actual performance data. Document data collection (e.g., of course articulation agreements) and review constitute the data collection procedures for these two performance measures of this objective. We initiated data collection for these two performance measures in February 2012 (in the previous performance period) and have continued data collection through the current performance period as project faculty coordinate the articulation and curriculum approval process at College of the Canyons, Glendale Community College, and CSUN. Document data analysis for these two performance measures includes reviews to confirm the status of articulated courses and articulation agreements. In addition, Glendale Community College uses an online student-transfer information system to track progress on these two performance measures (see below under “Project Activities at Glendale Community College”). Finally, we include a discussion of course articulation as a standing agenda item at monthly AIMS2 project team meetings to confirm document data records at each site.

**Description of Preliminary Findings Related to the Objective**

Actual performance data for these two performance measures of this objective indicate that 77 courses currently articulate between College of the Canyons/Glendale Community College and CSUN. Specifically, data collected during the period through documents reveal that a total of 41 courses currently articulate between College of the Canyons and CSUN and a total of 36 courses currently articulate between Glendale Community College and CSUN. Of the 77 courses that currently articulate, remedial math courses have been excluded from the count and six courses are missing labs (four at College of the Canyons and two at Glendale Community College). Accordingly, the total of 77 courses that currently articulate between both community colleges and CSUN constitutes the baseline performance measure. Meanwhile, a total of 12 courses currently do not articulate between College of the Canyons and CSUN and 17 courses do not currently articulate between Glendale Community College and CSUN, for a total of 29 courses in the fields of engineering and computer science. Given the project target of 15 new articulated courses, the total number of courses that need to articulate between CSUN and the two community colleges is 92, which represents the project target number.

During the previous and current period of performance evaluation, 6 courses have been articulated between CSUN and COC and 10 courses have been articulated between CSUN and GCC, for a total of 16 articulated courses between CSUN and COC/GCC. Given the project increase of 16 and project target of 92 articulated courses/articulation agreements, the actual performance data for this period demonstrate achievement of this objective. Indeed, with the five articulated courses from the first project year, eight articulated courses from the second project year, and three articulated courses from the current (third) project year, the total number of articulated courses at the end of the first three performance periods is 93—which exceeds the project target (n=92). More specific details about the courses articulated during the period can be found in the sections immediately below.

**Preliminary Findings of College of the Canyons**

During the first three performance periods, the following courses have been articulated between CSUN and COC:

- CE 240 and 240L at CSUN is articulated with COC ENGR 152 (Articulated Pre-Project/Updated Project Year 2)
- CMT 110L at CSUN articulates with COC CONST 103 (Project Year 2)
- CMT 236L at CSUN articulates with COC SURV 101 (Project Year 1)
- CMT 210L at CSUN articulates with COC CONST 106 (Project Year 2)
- ME 186 and 186L at CSUN articulates with COC ENGR 114 (Project Year 2)
- MSE 227 and 227L at CSUN articulates with COC ENGR 151L (Project Year 2)

**Preliminary Findings of Glendale Community College**

During the first three performance periods, the following courses have been articulated between CSUN and GCC:

- CE 240L at CSUN articulates with GCC ENGR 152 (Project Year 2)
- CIT 101L at CSUN articulates with GCC CSIS 101 (Project Year 1)
- CIT 160L at CSUN articulates with GCC CSIS 260 (Project Year 1)
- COMP 108 at CSUN articulates with GCC CSIS 112 (Project Year 1)
- COMP 122L at CSUN articulates with GCC CSIS 165 (Project Year 1)
- COMP 256L at CSUN articulates with GCC CSIS 125 (Project Year 3)
- ECE 240L at CSUN articulates with GCC ENGR 240 (Project Year 3)
- ME 186L at CSUN articulates with GCC ENGR 111 (Project Year 2)
- ME 209 at CSUN articulates with GCC ENGR 156 (Project Year 3)
- MSE 227 and 227L at CSUN articulates with GCC ENGR 146 (Project Year 2)

**Description of Project Activities Related to the Objective**

During the performance period, project faculty made meaningful progress toward meeting these two performance measures. In fact, project faculty from CSUN, College of the Canyons, and Glendale Community College met to discuss course articulation. Since December 2011, project faculty members have met at monthly project team meetings. In fact, we include a discussion of course articulation as a standing agenda item at monthly AIMS2 project team meetings. At two monthly project team meetings (June 27, 2012, and March 15, 2012), project faculty established a framework to develop course articulation agreements and worked on articulating the individual courses listed above and additional courses below through the formation of work groups based on their disciplinary backgrounds and department affiliations (e.g., computer science, civil engineering and construction management, manufacturing systems engineering, etc.) and assigned themselves specific courses to review, revise, and articulate. During the monthly project team meetings of the first three performance periods (February 2012 through September 2014), faculty from CSUN, COC, and GCC reported on their collaboration through the articulation process. The meetings provided an opportunity for the faculty from each campus to
discuss their most recent collaborations and to report updated articulation findings. Outside of project team meetings, faculty exchanged course syllabi, course outlines, and consulted with curriculum committees on their respective campuses (COC/GCC). The articulation process included course equivalencies by examining respective course syllabi and course outlines for course descriptions, objectives/outcomes, and content for each community college course with CSUN’s course.

Descriptive of Project Activities at College of the Canyons

Since the start of the grant, College of the Canyons has increased the number of articulated courses with CSUN from 4 to 11 with one still pending (ENGR-114/114L). In the past performance period, College of the Canyons engineering faculty worked with CSUN faculty members to articulate one course and two labs. These included articulation between CSUN’s ME 166 and COC’s Engineering 114/114L and CSUN’s MSE 227L and COC’s Engineering 151L (completed—see above). In addition, COC and CSUN faculty updated CE 240 and CE 240/L (CSUN) and ENGR 152 (COC) to comply with articulation requirements of SB 1440. That is, CE 240 and 240 L had been articulated prior to the start of the project, but recent changes that were made to comply with the system-wide mandate (SB 1440) for transfer model curricula. Faculty in CSUN’s Computer Science department are also working with faculty in COC’s Computer Information Technology department to determine which courses could be developed at COC that would ease student transfer to the CSUN’s computer science department. Faculty in CSUN’s Construction Management department are also working with faculty in COC’s Construction Management and Land Surveying departments to determine which courses could be developed at COC that would ease student transfer to the CSUN’s construction management department. Articulations include Construction-106 and CSUN’s CMT110/L, COC’s Construction-106 and CSUN’s CMT210/L, and COC’s Surveying-101 and CSUN’s CMT208/L (see above). These faculty-faculty conversations about articulation issues are ongoing and expected to yield multiple clear course pathways so that community college students can successfully complete key courses prior to transfer. We measure the progress made during these discussions on the articulation of courses between COC and CSUN by monitoring the development of Memoranda of Understanding (MOUs) between individual departments at the two campuses by tracking the number of MOUs developed. We also track the number of courses in the curriculum process at COC and the number of fully articulated courses through a record of curriculum committee meetings.

Descriptive of Project Activities at Glendale Community College

In the current performance period, Glendale Community College faculty worked with CSUN faculty members to finalize the articulation of three courses. These included articulation between CSUN’s COMP 256L and GCC’s CSIS 125, CSUN’s ECE 240L and GCC’s ENGR 240, and CSUN’s ME and GCC’s ENGR 156 (completed—see above). With some courses that articulated between CSUN and GCC, Professor Rubke and Professor Voden from GCC collaborated closely with several of the courses; however, the curriculum committees at their college also provided input into the articulation process. Professor Melara from CSUN updated and articulated the computer science courses through her requests of each course syllabi.

Plans to Use of Performance Data to Monitor Progress

During the next performance period, plans to measure progress on these two measures include document data collection (e.g., course articulation agreements) and review. Data collection will occur as project faculty complete the articulation and curriculum approval process at College of the Canyons, Glendale Community College, and CSUN. As with the courses articulated during the current and previous performance periods, we plan to continue the documentation of course articulation work that supports our collaborative approach in the curriculum revision process and submission of revised courses to curriculum committees at our respective campuses once courses have been articulated.
The actual performance data for this objective is 2 counselors. Given that the baseline data for this project objective is 0 and the project target is to increase by two the number of SEPs created or modified, preliminary findings of Glendale Community College as of November 2013, April 2014, and November 2014, indicate that 3 contacts were provided for an overall total for Cohorts 2 and 3 of 63 contacts with AIMS2 counselor(s) during the performance period. These numbers were based on counseling appointments, including meetings to discuss student educational plans, to document data sources and collection methods.

3.b. Performance Measure for College of the Canyons** Increase by four the number of advising/counseling sessions with students in STEM fields over the 2010-11 baseline number*** Note that the performance measures for this objective have been disaggregated from the original performance measure for reporting purposes only. **Note that this performance measure is reported in separate tables for College of the Canyons and Glendale Community College. ***Baseline data per Instructions for Grant Performance Report; baseline data collected by cohort/short entry year. Upper row represents data for Cohort 2 (Fall 2012) and lower row represents data for Cohort 3 (Fall 2013)

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<td>3.a. Performance Measure* for College of the Canyons** Increase by two the number of counselors at College of the Canyons and Glendale Community College who participate in STEM professional development workshops over the 2010-11 baseline number*** Note that the performance measures for this objective have been disaggregated from the original performance measure for reporting purposes only. **Note that this performance measure is reported in separate tables for College of the Canyons and Glendale Community College. ***Baseline data per Instructions for Grant Performance Report</td>
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Explanation of Progress (Include qualitative data and data collection information)

Evaluation Data Sources and Methods for the Objective

College of the Canyons and Glendale Community College report their respective data sources and methods below.

Evaluation Data Sources and Methods at College of the Canyons
College of the Canyons used a combination of document data sources and collection methods—including counseling appointments, student educational plans, and attendance at the transfer planning events—to establish baseline data for these performance measures.

Evaluation Data Sources and Methods at Glendale Community College
Glendale Community College STEM and general counselors were asked to track and report any STEM professional development workshops they attended to the AIMS2 Counselor/Coordinator. The AIMS2 Counselor/Coordinator also tracked counseling appointments, including meetings to discuss student educational plans, to document data sources and collection methods.

Description of Preliminary Findings Related to the Objective

Preliminary findings for each college are reported below.

Preliminary Findings of College of the Canyons
For performance measure 3a, College of the Canyons reports that two (2) counselors have participated in staff development activities. Also during this performance period, we supported one (1) of our counseling faculty members, along with students, on a trip to participate in the Society for Hispanic Professional Engineers (SHPE) conference so that they will have the tools that they need to successfully prepare our AIMS2 scholars for transfer.

With respect to performance measure 3b, we see that Cohort 2 (n=8) had a total of 34 counseling contacts and Cohort 3 (n=8) logged a total of approximately 29 contacts for an overall total for Cohorts 2 and 3 of 63 contacts with AIMS2 counselor(s) during the performance period. These numbers were based on Counseling Appointments (20 for Cohort 2 and 13 for Cohort 3), Student Ed Plan sessions (8 each for Cohort 2 and 3) and transfer planning events 6 for Cohort 2 and 8 for Cohort 3. We will monitor the amount of progress toward the above objectives by tracking the number of counseling appointments and the number of SEPs created or modified and attendance at the transfer planning events.

Preliminary Findings of Glendale Community College
With respect to performance measure 3a (i.e., Glendale Community College counselors who participate in STEM professional development), up to four counselors reported on academic workshops and conferences. The AIMS2 Counselor/Coordinator attended the following: Great Minds in STEM conference (October 2013), and Society for Hispanic Professional Engineers Annual Conference (SHPE; October 2013, April 2014, November 2014); American Educational Research Association (April 2014), Excellence in Education Symposium (Sept 2014); Society of Women Engineers Conference (October 2014). The actual performance data for this objective is 2 counselors. Given that the baseline data for this project objective is 0 and the project target is to increase by two the number of SEPs created or modified and attendance at the transfer planning events.
number of counselors who participate in STEM-related professional development workshops, this performance measure has been met during the current project performance period.

Since Fall 2013, these professional development opportunities include:

- October 2013: HEENAC Conference, New Orleans (2 Counselors)
- November 2013: SHPE (Society for Hispanic Professional Engineers) 2013 Conference in Indianapolis (2 Counselors)
- April 2014: SHPE Leadership Conference at UCSD (2 Counselors), American Educational Research Association (3 Counselors)
- May 2014: Latinas in STEM/GCC Conference at GCC (4 Counselors)
- September 2014: Excelencia in Education Symposium (1 Counselor)
- October 2014: Society of Women Engineers Conference (2 Counselors)
- November 2014: SHPE (Society for Hispanic Professional Engineers) 2014 Conference in Detroit (2 Counselors)

With respect to performance measure 3b (i.e., students' participation in advising/counseling sessions), data were collected from an online student survey and from the AIMS2 Counselor/Coordinator tracking the number of advising/counseling sessions provided to students. Glendale Community College students participating in the program (Cohort 2-Fall 2012, Cohort 3-Fall 2013) were invited to participate in an online survey in June 2014 to collect data about the types of services and programs they participated in during the 2013-14 academic year, including the summer. The survey included items that asked if respondents attended any academic counseling sessions with a STEM counselor. The number of students in Cohort 2 (joined in Fall 2012) at GCC as of June 2014, who responded to the survey, is eight and for Cohort 3 (joined in Fall 2013); the number of survey respondents was nine. Of the students in Cohort 2, all eight students who responded indicated attending academic counseling sessions with a STEM counselor. Four students indicated attending indicated attending 2-3 academic counseling sessions and four attended 4-5 sessions. For Cohort 3, five students indicated attending 2-3 sessions, two attended 4-5 sessions, and one attended 6 or more sessions. The number of academic counseling sessions was verified by the AIMS2 Counselor/Coordinator, who recorded a total of 24 counseling sessions with Cohort 2 students and 35 counseling sessions with Cohort 3 students. The figures in the table above were calculated by adding the number of reported sessions by the AIMS2 Counselor (Cohort 2= 24 and Cohort 3=35) to the baseline/target number (Cohort 2= 7 and Cohort 3=7). Students are required to check in before their advising/counseling appointment by way of writing their names on the AIMS2 Counseling clipboard. An assistant to the counselor also verifies counseling visits by checking if each participant has completed their Student Educational Plans (SEPs).

Description of Project Activities Related to the Objective
Specific project activities at College of the Canyons and Glendale Community College, respectively, are detailed below.

Project Activities at College of the Canyons
During this performance period, our counseling plan includes having our AIMS2 scholars meet with counseling faculty twice a semester for every semester they are involved in the program at COC. These appointments will result in the development of a Student Educational Plan (SEP) for each scholar. Our counselors will also provide informational workshops on transfer planning during the fall semesters to support the scholars transfer process.

Project Activities at Glendale Community College
Counselors are notified of professional development opportunities through: their monthly AIMS2 project meetings at CSUN, STEMTech listservs, and networking with other STEM colleagues. At minimum, students participating in the program are required to meet one-on-one with the AIMS2 Counselor/Coordinator once per semester. During these sessions, students will develop or update their Student Educational Plans (SEP). SEPs are a list of required General Education and Major requirements prepared only by academic counselors. In addition, advising of prerequisite courses is provided to properly guide students. During participant focus groups, students in both cohorts acknowledged several benefits in meeting with a counselor, including quickly knowing which courses they are required to take.

Plans to Use of Performance Data to Monitor Progress
At College of the Canyons, progress toward the above performance measures of this objective will be tracked the number of counseling appointments, the number of SEPs created or modified, and attendance at the transfer planning events. Meanwhile, At Glendale Community College, progress toward the above performance measures of this objective will be tracked by the number of counseling sessions students have, results from an online survey, and recording counselor(s) attendance at professional development workshops.
4.a. Performance Measure* for College of the Canyons** Increase by 75 percent the College of the Canyons and Glendale Community College students who participate in tutoring sessions in STEM classes and who participate in STEM academic workshops over the 2010-11 baseline rate**** "Note that the performance measures for this objective have been disaggregated from the original performance measure for reporting purposes only. **Note that this performance measure is reported in separate tables for College of the Canyons and Glendale Community College, given differences in target/actual performance data for this reporting period. ***Note that in the ratio columns of the target and actual performance data the numerator represents the numerical target (e.g., the number of students that are expected to attain proficiency) or actual performance data (e.g., the number of students that attained proficiency), and the denominator represents the universe (e.g., all students served)" (Instructions for Grant Performance Report, p. 7). ****Baseline data per Instructions for Grant Performance Report; baseline data collected by cohort/cohort entry year *****Upper rows represent data for Cohort 2 (Fall 2012) and lower rows represent data for Cohort 3 (2013)

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<td>4.a. Performance Measure* for College of the Canyons** Increase by 75 percent the College of the Canyons and Glendale Community College students who participate in tutoring sessions in STEM classes and who participate in STEM academic workshops over the 2010-11 baseline rate**** &quot;Note that the performance measures for this objective have been disaggregated from the original performance measure for reporting purposes only. **Note that this performance measure is reported in separate tables for College of the Canyons and Glendale Community College, given differences in target/actual performance data for this reporting period. ***Note that in the ratio columns of the target and actual performance data the numerator represents the numerical target (e.g., the number of students that are expected to attain proficiency) or actual performance data (e.g., the number of students that attained proficiency), and the denominator represents the universe (e.g., all students served)&quot; (Instructions for Grant Performance Report, p. 7). ****Baseline data per Instructions for Grant Performance Report; baseline data collected by cohort/cohort entry year *****Upper rows represent data for Cohort 2 (Fall 2012) and lower rows represent data for Cohort 3 (2013)</td>
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"readiness" in these areas. The AIMS2 Counselor/Coordinator reminds students of the tutoring support available and their requirement to seek tutoring services.

During the course of the project, students have been supplemented with tutoring to improve their math, science and language skills to increase their "transfer

AIMS2 scholars it is difficult for them to enroll in courses at CSUN while they are still at College of the Canyons.

available for our AIMS2 scholars. There are 10 hours of engineering tutoring with faculty and student tutors, nineteen hours of physics tutoring with faculty and student

workshop attendance. Accordingly, we produced a full drop-in tutorial schedule including math, engineering and physics with faculty tutors and student peer tutors

During this performance period, we have monitored our progress toward these goals by collecting data on scholar participation in peer tutoring sessions and academic

Project Activities at College of the Canyons

Specific project activities at College of the Canyons and Glendale Community College, respectively, are detailed below.

For performance measure 4b (i.e., Glendale Community College students’ enrollment in online courses with CSUN faculty), data from the online survey questionnaire

students in Cohort 2 and 13 students in Cohort 3 reported participating in an activity related to performance measure 4a during 2013-14.

Glendale Community College faculty. Between tutoring sessions, STEM-facilitated academic workshops, and supplemental lab learning workshops, a total of 10

exercises centered on the course material. Of Cohort 2 participants, seven students indicated they attended a supplemental lab session led by either student leaders or

workshop, one student reported attending 2-3 workshops, and three students reported attending 4-5 workshops. The topics included: library workshops, student

Cohort 2 participants, seven out of the 10 students who responded indicated that they attended a STEM-facilitated workshop. Three students reported attending one

projects targets have been established that are intended to achieve the percent increase in both performance measures related to increases in the number of students (not sessions or workshops) that participate in tutoring (4a), workshops (4a), and online classes (4b).

Accordingly, the current target for performance measure 4a is set at 6/8 (75% of all Cohort 2 participants) and for performance measure 4b is 1/10 (10% of all Cohort 2 participants).

We used the same logic to develop project targets on performance measure 4b for Cohort 3 (i.e., 6/8 of 75% of all Cohort 3 participants). In terms of actual performance data, College of the Canyons reports that 16 students participating in Cohort 1 and Cohort 2, or 16/16 (100%), have sought tutoring with a faculty or student tutor—related to measure 4a. At the cohort level, if we look at Cohort 1 (n=8) and Cohort 2 (n=8), we see that 8 (8/8 or 100%) Cohort 2 and 8 (8/8 or 100%) Cohort 3 students participated in tutoring. Given actual performance data for Cohort 2 and Cohort 3, performance measure 4a has been achieved during this period.

Because of the financial situation for our AIMS2 scholars it is difficult for them to enroll in university courses while they are still at College of the Canyons. Accordingly, for performance measure 4b, College of the Canyons reports that no Cohort 2 or 3 students enrolled in online courses with CSUN faculty prior to cohort entry.

Preliminary Findings of Glendale Community College

With respect to performance measure 4a (i.e., Glendale Community College students’ participation in STEM tutoring), data were collected from an online survey questionnaire. Glendale Community College students participating in the program (Cohort 1-Spring 2012; Cohort 2-Fall 2012) were invited to participate in an online survey in August 2013 to collect data about the types of services and programs they participated in during the 2012-2013 academic year, including summer. The survey included items that asked if respondents attended tutoring sessions for STEM classes, academic workshops, and supplemental lab sessions for STEM classes. Due to attrition from the program (n=3) and graduation/transfer (n=2), the number of students in Cohort 2 as of August 2013 is nine. Of the students in Cohort 2 (n=9), eight out of the 10 students who responded indicated that he/she participated in tutoring sessions for a STEM class during the 2012-2013 academic year. Students reported attending tutoring in science (4 students), technology (2 students), engineering (2 students), and mathematics (6 students) classes. Several students indicated that the tutoring they received was provided by student-tutors who were contracted specifically by the AIMS2 program to assist program participants. One student stated that having a student tutor was "extremely helpful and essential to understanding the material." The number of tutoring sessions was verified by the AIMS2 Counselor/Coordinator, who tracked tutoring hours with tutoring log-in sheets. The AIMS2 Counselor/Coordinator found that five students in Cohort 1 participated in a total of 51 hours of tutoring. Nine students in Cohort 2 participated in a total of 76 hours of tutoring. For Cohort 3 (n=16), 3 dropped and 13 students received a total of 70 hours of tutoring.

Cohort 2-Fall 2012 were asked to indicate the number of STEM facilitated academic workshops they attended during the 2012-2013 academic year). These academic workshops include workshops that help students with skills such as planning coursework and time management, etc. and were sponsored by a STEM department. Of Cohort 2 participants, seven out of the 10 students who responded indicated that they attended a STEM-facilitated workshop. Three students reported attending one workshop, one student reported attending 2-3 workshops, and three students reported attending 4-5 workshops. The topics included: library workshops, student development classes, and transfer application workshops. In addition to STEM-facilitated academic workshops, students were asked in the survey if they participated in any supplemental lab sessions for a STEM class. Supplemental lab sessions consist of learning workshops offered to specific classes that focus on problem solving exercises centered on the course material. Of Cohort 2 participants, seven students indicated they attended a supplemental lab session led by either student leaders or Glendale Community College faculty. Between tutoring sessions, STEM-facilitated academic workshops, and supplemental lab learning workshops, a total of 10 students in Cohort 2 and 13 students in Cohort 3 reported participating in an activity related to performance measure 4a during 2013-14.

For performance measure 4b (i.e., Glendale Community College students’ enrollment in online courses with CSUN faculty), data from the online survey questionnaire indicated that none of GCC’s Cohort 2 or Cohort 3 participants reported enrolling in online courses with CSUN faculty.

Description of Project Activities Related to the Objective

Specific project activities at College of the Canyons and Glendale Community College, respectively, are detailed below.

The AIMS2 Counselor/Coordinator reminded students of the tutoring support available and their requirement to seek tutoring services. During the course of the project, students have been supplemented with tutoring to improve their math, science and language skills to increase their "transfer

"transfer

target in these areas. The AIMS2 Counselor/Coordinator reminded students of the tutoring support available and their requirement to seek tutoring services.
“readiness” in these areas. The AIMS2 Counselor/Coordinator reminds students of the tutoring support available and their requirement to seek tutoring services. Glendale Community College program administrators and the AIMS2 Counselor/Coordinator are continuing to work on articulating present and new courses with CSUN faculty. We will continue to monitor progress toward these goals by collecting data on scholar participation in peer tutoring sessions and academic workshop attendance.

Project Activities at CSUN and College of the Canyons/Glendale Community College

Clearly, the actual data for performance measure 4b for both College of the Canyons and Glendale Community College identify challenges for us as a collaborative project team. In project meetings in previous performance periods, we discussed the general approach to teaching engineering and computer science courses online and the need to deliver on-ground courses and offer face-to-face instructional experiences in the disciplines associated with the project. In addition, we discussed the issue with affordability with enrolling in courses at CSUN while COC and GCC cohort participants are still enrolled as community college students. Given these issues, we concluded that we will need to address how to best perform within the parameters of this performance measure (i.e., 4b at College of the Canyons and 4b at Glendale Community College) while meeting the pedagogical needs of CSUN faculty and financial needs of COC and GCC students. One possible alternative to student enrollment in online courses that we discussed is extending the CSUN faculty summer research projects in which COC and GCC students participate through an online environment. Since these discussions, we took constructive steps to move in a direction of more mobile technology accessible to students and faculty via the iPad initiative to support student contact with faculty and instructional tools available online in a web-based environment. As an example, Professors Behzad and Reimer created modules in an the eText initiative for MSE 227, which illustrates how a course that we have worked to articulate with COC and GCC and CSUN, MSE 227, supports student skills development and intellectual growth.

Plans to Use of Performance Data to Monitor Progress

At College of the Canyons, progress toward the above performance measures of this objective will be tracked using a tracking mechanism, which will be developed so that AIMS2 scholars are able to quantify their time with both peer and faculty tutors and participation in peer tutoring session and academic workshops. Meanwhile, Glendale Community College plans to monitor performance on these two measures using the online survey questionnaire results. Between CSUN and COC/GCC, we plan to continue discussions of cross-institutional collaboration into the next performance period.
Preliminary findings for each college are reported below.

**Description of Preliminary Findings Related to the Objective**

For performance measure 5a (student-faculty interaction), Glendale Community College used an online student survey questionnaire and informal conversations with COC faculty members. Evaluation data sources and methods at Glendale Community College included a survey questionnaire to establish baseline data regarding faculty contact. During the course of this performance period, all COC faculty contacts were recorded. Interactions with CSUN faculty and students through summer research and CSUN Engineering Day (April 25, 2014) opportunities were also recorded.

**Explanation of Progress (Include qualitative data and data collection information)**

**Explanation of Progress (Include Qualitative Data and Data Collection Information)**

Evaluation Data Sources and Methods for the Objective

College of the Canyons and Glendale Community College report their respective data sources and methods below.

**Evaluation Data Sources and Methods at College of the Canyons**

COC used a survey questionnaire to establish the baseline data regarding faculty contact. During the course of this performance period, all COC faculty contacts were recorded. Interactions with CSUN faculty and students through summer research and CSUN Engineering Day (April 25, 2014) opportunities were also recorded.

**Description of Preliminary Findings Related to the Objective**

Preliminary findings for each college are reported below.
Preliminary Findings of College of the Canyons

For performance measure 5a, College of the Canyons is working to strengthen its schedule of appointments for our engineering faculty to spend one-on-one time with each research student cohort. This is also to provide professional development workshops related to math anxiety, financial aid, and summer research experience. Each student will be scheduled for monthly one-on-one time with faculty in the engineering department to discuss their academic goals, their professional aspirations, and the barriers they may face along the way. During this reporting period, 57 faculty-student interactions in Cohorts 2 and 3 were made. When we examine the total number of interactions by student headcount, we find that 6/8 (Cohort 2) and 6/8 (Cohort 3) students interacted with faculty. We recorded students scheduling one-on-one meetings with faculty in the engineering department to discuss their academic goals, professional aspirations, and barriers to academic success; we also made note of those students who attended at least one of our workshops. Given baseline data for Cohort 2 (n=0)—and the same model applied to Cohort 3 (n=0)—for performance measure 5a, we see that actual performance data allows us to conclude that this performance measure has been achieved. We took a qualitative sample of a few of our cohort 2 and 3 students regarding faculty-student interaction in order to better understand how successful our activities are. Here are a few of the responses:

“I have been able to develop two relationships with faculty that participated in the [AIMS2] program. This has helped me to bond with and interact with these professors outside of the [classroom]. One has become a mentor to me. [The professor] is guiding and advising me through my engineering career.”
“I have been able to get to know and connect with [my] physics professor and speak with [the instructor] about stem topics.”
“They are related to STEM. I have met many professors from CSUN and from COC that have helped me get involved in school and extracurricular programs [that are] engineering based.”
“I’ve had about 5 interactions with faculty this semester which were from office hours and AIMS bi weekly meetings.”

In terms of performance measure 5b, College of the Canyons students interacted with Glendale CC students, as well as with CSUN faculty and students at the CSUN Engineering day. 4/8 Cohort 2 students and 6/8 Cohort 3 students participated in this event. During the summer of 2014, 4/8 Cohort 2 and 3/8 Cohort 3 students were involved with hands-on research with CSUN faculty and students as well as GCC students. The research lasted for a period of 8-10 weeks.

Preliminary Findings of Glendale Community College

For performance measure 5a (i.e., student-faculty interaction), data were collected from a cohort survey questionnaire. Glendale Community College students participating in the program (Cohort 2-Fall 2012, Cohort 3-Fall 2013) were invited to participate in an online survey in June 2014 to collect data about the types of services and programs they participated in during the 2012-2013 academic year, including any interactions with CSUN and GCC faculty. Eight participants from Cohort 2 and nine from Cohort 3 participated in the June 2014 survey. The types of student-faculty interactions consisted of: office hour visits (7 students), email communication (7 students), communication by phone (6 students), and out-of-class discussions (7 students). All cohorts have had an opportunity to seek mentors from Glendale Community College faculty and CSUN faculty. Faculty mentors have provided students academic support, career advice, and a sense of what will be expected of them when they transfer to CSUN.

With the advancement of mobile technology, texting and email have become the preferred choice for weekly communication between the AIMS2 Counselor/Coordinator and students. The AIMS2 Counselor/Coordinator found that the use of a cell phone device is an effective tool when sending AIMS2 scholars regular announcements pertaining to AIMS2 meetings, AIMS2 events/field trips, individual counseling sessions, financial aid follow-up sessions. Similarly, program participants often use this preferred method of communication for a variety of requests including counseling appointments, tutoring, mentoring, letters of recommendation, and other related pro-gram issues. As a result, many of the participants feel that the AIMS2 Counselor is extremely accessible and feel that their needs are met given this informal mode of communication. Additionally, the AIMS2 Counselor/Coordinator communicates via e-mail and Facebook twice or more per week. Finally, the iPad initiative of the AIMS2 project enhanced contact and communication between students and the AIMS2 Counselor/Coordinator.

With respect to performance measure 5b (i.e., quality of student-faculty interactions), data were collected from a cohort survey questionnaire, as well as participant group interviews. Students and the AIMS2 Counselor/Coordinator described several events and opportunities for which Glendale Community College participants could interact with CSUN faculty. Guest speakers, including faculty from GCC and CSUN, have attended the club’s monthly sessions and shared information with participants on a range of STEM issues and disciplines. Topics have included: robotics, mechanical engineering, and the science behind Glendale Water and Power. Students have been able to hear about how different STEM fields are connected, the process and benefits of furthering their education after earning their bachelor’s degree, and how different science theories are applicable to day-to-day life. Additionally, students were encouraged to participate in internship opportunities with CSUN faculty. Three participants in the survey indicated that they participated in an internship in 2013-2014.

Description of Project Activities Related to the Objective

Specific project activities at College of the Canyons and Glendale Community College, respectively, are detailed below.

Project Activities at College of the Canyons

At College of the Canyons, each student will be scheduled for monthly one-on-one time with faculty in the engineering department to discuss their academic goals, their professional aspirations, and the barriers they may face along the way. During the spring semester, CSUN hosted an Engineering Day for both COC and GCC students. Here, our students were able to interact and explore the various labs, which would be available to do research over the summer. This chance to interact informally with CSUN faculty and learn about their research will provide a unique experience for College of the Canyons AIMS2 students. During this performance period 8 of COC’s AIMS2 scholars participated in CSUN’s Senior Design Day, which provided them an opportunity to interact with CSUN’s faculty. We will track the number of faculty/scholar appointments and scholar participation in CSUN faculty events at COC.

Project Activities at Glendale Community College

At College of the Canyons, each student will be scheduled for monthly one-on-one time with faculty in the engineering department to discuss their academic goals, their professional aspirations, and the barriers they may face along the way. During the spring semester, CSUN hosted an Engineering Day for both COC and GCC students. Here, our students were able to interact and explore the various labs, which would be available to do research over the summer. This chance to interact informally with CSUN faculty and learn about their research will provide a unique experience for College of the Canyons AIMS2 students. We will track the number of faculty/scholar appointments and scholar participation in CSUN faculty events at COC.

Summer Project Research Activities at CSUN

In addition to the project activities included above under College of the Canyons and Glendale Community College, CSUN faculty mentors facilitated interaction between themselves and COC and GCC students during the performance period. Specifically, select CSUN faculty mentors invited COC and GCC students to join CSUN students in faculty research projects at CSUN with CSUN faculty mentors in Summer 2014. The CSUN faculty mentors, research project names, and number of students (COC, GCC, and CSUN) who participated in the projects are listed below:

Professors Bob Ryan and George Youssif:
“Fabrication and Characterization of Thin-Film PZT Using Sol-Gel Spin Coating Process” with 2 COC students and 2 CSUN students

Professors Bob Ryan and Vibhav Durgesh:
“Designing Experimental Setup for Flow Visualization to Understand Complex Fluid Dynamics Flows” with 1 CSUN student and 1 LA Mission student

Professor Steward Prince:
“5-Axis Machining” with 2 CSUN students

Professor Behzad Bavarian:
“Graphene Properties and Engineering Applications” with 1 CSUN student
“Corrosion Inhibitors for Materials” with 1 MHC student
“Alternatives for Environmentally Friendly Battery Materials” with 3 COC students, 1 GCC student, 2 CSUN students

Professor Bruno Osomo:
“The Importance of Renewable Energy and Sustainability” with 2 COC students, 1 GCC student, and 3 CSUN students
Professor Gloria Melara:
"Challenges of Supporting Technology K-6: Is a Raspberry PI a Solution?" and "Pragmatic Experience on Concurrency, Parallel, and Distributed Programming" with 5 CSUN students, 2 GCC students, and 1 LA Mission College student

In terms of the performance measures of this objective, these projects facilitated interaction between CSUN faculty, CSUN students, and COC/GCC students within a re-search context and supported the achievement of the objective.

Plans to Use of Performance Data to Monitor Progress
At College of the Canyons, progress toward the performance measures of this objective is tracked using pre-participation and post-participation surveys, faculty/scholar appointment records, records of counseling contacts and scholar participation in COC and CSUN events and research opportunities. Glendale Community College will continue monitoring performance on these two measures through the use of results from the online survey questionnaire and group interviews (i.e., participant focus groups). Specifically, Glendale Community College plans to collect data on the quality of student-faculty interactions in 2015 through student participant focus groups and a follow-up online survey. For the student focus groups, a protocol will be developed to inquire about students’ experiences in interacting with CSUN faculty, the frequency of interactions, the types of interactions, and what was most and least beneficial about the support they received. The focus groups will be led by the program evaluators and will be audio recorded as well as have handwritten notes taken during the discussion.
### Project Objective: 6. Enhance the peer environment of College of the Canyons and Glendale Community College students in STEM fields

Check if this is a status update for the previous budget period.

<table>
<thead>
<tr>
<th>Performance Measure</th>
<th>Measure Type</th>
<th>Quantitative Data</th>
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<tbody>
<tr>
<td></td>
<td>Project</td>
<td>Target Raw Number</td>
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<tr>
<td>6.a. Performance Measure* for College of the Canyons** Increase by15 the number of the Canyons and Glendale Community College students who participate in peer-peer tutoring sessions over the 2010-11 baseline number*** &quot;Note that the performance measures for this objective have been disaggregated from the original performance measure for reporting purposes only.&quot; **Note that this performance measure is reported in separate tables for College of the Canyons and Glendale Community College. ***Note that in the ratio columns of the target and actual performance data &quot;the numerator represents the numerical target (e.g., the number of students that are expected to attain proficiency) or actual performance data (e.g., the number of students that attained proficiency), and the denominator represents the universe (e.g., all students served)” (Instructions for Grant Performance Report, p. 7). ****Baseline data per Instructions for Grant Performance Report; baseline data collected by cohort/cohort entry year *****Upper row represents data for Cohort 2 (Fall 2012) and lower row represents data for Cohort 3 (Fall 2013)</td>
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<td>Project</td>
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<tr>
<td>6.a. Performance Measure* for Glendale Community College** Increase by15 the number of the Canyons and Glendale Community College students who participate in peer-peer tutoring sessions over the 2010-11 baseline number*** &quot;Note that the performance measures for this objective have been disaggregated from the original performance measure for reporting purposes only.&quot; **Note that this performance measure is reported in separate tables for College of the Canyons and Glendale Community College. ***Note that in the ratio columns of the target and actual performance data &quot;the numerator represents the numerical target (e.g., the number of students that are expected to attain proficiency) or actual performance data (e.g., the number of students that attained proficiency), and the denominator represents the universe (e.g., all students served)” (Instructions for Grant Performance Report, p. 7). ****Baseline data per Instructions for Grant Performance Report; baseline data collected by cohort/cohort entry year *****Upper row represents data for Cohort 2 (Fall 2012) and lower row represents data for Cohort 3 (Fall 2013)</td>
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Evaluation Data Sources and Methods for the Objective

During the performance period, College of the Canyons and Glendale Community College support the assessment of these measures through data collection methods designed to meet their unique project needs.

Evaluation Data Sources and Methods at College of the Canyons
College of the Canyons collected data on student participation in tutoring sessions, AIMS2 activities and the tutor/mentor training workshop through existing tracking and recording mechanisms.

Evaluation Data Sources and Methods at Glendale Community College
Glendale Community College used an online survey questionnaire and group interviews (i.e., participant focus groups) (see below under "Description of Preliminary Findings Related to the Objective" for details) to collect actual performance data on these performance measures.

Description of Preliminary Findings Related to the Objective
Preliminary findings for each college are reported below.

Preliminary Findings of College of the Canyons
During this performance period, a total of 85 hours in STEM tutoring in biology, chemistry, engineering, physics, and mathematics were provided by both faculty and student tutors. On average each week there were fifteen hours of tutoring in chemistry, physics, and mathematics. In addition to one-on-one tutoring, there were 5 AEW workshops each week in chemistry and math. Attendance at these workshops was as follows:
- Chemistry 201 (General Chemistry I): 18 student participants/2 AIMS2 Scholars
- Chemistry 202 (General Chemistry II): 9 student participants/1 AIMS2 Scholars
- Math 212 (Calculus II): 25 student participants/4 AIMS2 scholars
- Math 214 AEW (Linear Algebra): 19 participants/2 AIMS2 scholars
- Math211 (Calculus I): 18 student participants/3 AIMS2 scholars

During the performance period each of the 16 students in Cohorts 2 and 3 participated in tutoring or academic workshops (see performance measure 4a). Given project targets, we can conclude that, while substantive progress has been made, project respective targets for both cohorts have been met this performance period. In terms of peer mentoring (performance measure 6b), College of the Canyons reports that no Cohort 2 or Cohort 3 students participated in peer mentoring by CSUN students during the period. In terms of performance measure 6c, qualitative data on the quality of peer (student-student) interaction was recorded. A selection of their statements is found below:
- "I study with [AIMS] students that are also in my classes."
- "I have made a lot of non-classroom contacts and gotten to use these contacts for tutoring purposes."
- "I have met many other students that are pursuing a degree in engineering at COC and transferring to CSUN that has helped me form study groups to study during the period."
- "I have [had] more than 50. Mostly related to HSI-STEM. Those interactions include studying, group projects, club meetings, volunteer work, and social gatherings."
- "I have stayed involved with my fellow peers, as we have similar majors, and are participating in the same organizations. These mostly are STEM related, and SHPE has been great by enabling to help others through volunteering."

One question asked "what was the most valuable aspect of the peer-to-peer interaction":
- Academic Excellence workshops
- Tutoring
- Getting to know each other during the conferences and meetings
- Opportunity to do summer Research at CSUN Field trips to out of state conference
- "Finding and connecting with people that have the same or similar academic goals as me and working with them to succeed and improve in school."
- "AIMS2 at College of the Canyons played a pivotal role in advancing my academic experience beyond the classroom. Through this program I also became involved in SHPE (Society of Hispanic Professional Engineers), we were given the opportunity to attend the National SHPE Conference in 2014. This was a great experience as my peers and I talked with companies, students, and professionals from all over the country and world as well. These experiences enhanced my professional development, and the faculty at COC helped me gain my first internship at an Aerospace company."
- "It is the unity of majors that relate. Knowing you are surrounded by people that have to go through many of the same classes gives you strength. Also they can help you more than anyone else because of this."
- "My fellow peers are willing to share their experiences with classes or how they improved their skills taking a step forward towards their goals. Seeing how they progressed and improved really helps set a perspective on how I can reach my goals."

Preliminary Findings of Glendale Community College
With respect to performance measure 6a, (i.e., Glendale Community College students' participation in peer-peer tutoring), data were collected from a survey conducted during the performance period. The survey results indicated that 15% of the students at Glendale Community College participated in peer tutoring, with an average of 1.5 hours per week. The survey also revealed that 85% of the students found peer tutoring to be a valuable tool for academic success.

### Evaluation Data Sources and Methods for the Objective

**6.b. Performance Measure** for Glendale Community College **Increase by 15 the number of College of the Canyons and Glendale Community College students who are peer mentored by CSUN students over the 2010-11 baseline number****

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<td><strong>Ratio %</strong></td>
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<td><strong>Glendale Community College</strong></td>
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**6.c. Performance Measure** for Glendale Community College **Improve the quality of peer-peer interaction**

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<td><strong>Glendale Community College</strong></td>
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questionnaire. Glendale Community College students participating in the program (Cohort 2- Fall 2013; Cohort 3-Fall 2013) were invited to participate in an online survey in June 2014 to collect actual performance data about the types of services and programs they participated in during the 2013-2014 academic year, including peer-peer tutoring. Five students who responded to the survey indicated they participated in peer tutoring sessions. The number of peer tutoring sessions that these students attended varied. The courses that students indicated that they received peer tutoring in were: science, technology, and mathematics.

For performance measure 6b (i.e., Glendale Community College students’ peer mentored by CSUN students), data were collected from a survey questionnaire. Glendale Community College students participating in the program (Cohort 2- Fall 2013; Cohort 3-Fall 2013) were invited to participate in an online survey in June 2014 to collect actual performance data about the types of services and programs they participated in during the 2013-2014 academic year, including whether they received mentoring from a CSUN student. Three students indicated they had a CSUN mentor and explained how their mentors provided support by sharing their experiences on class selection, transfer requirements, and career selection. Participants who worked with their CSUN peer mentor in a lab or internship setting expressed appreciation for the opportunity for being engaged, challenged, and supported by their mentors.

For performance measure 6c (i.e., quality of peer interactions), data were collected from a survey questionnaire and group interviews (i.e., participant focus groups). Cohort participants have had many opportunities to interact with other Glendale Community College peers and CSUN peers. Cohort participants meet monthly for one hour in a club capacity to work as a team to tackle real, tangible, and ambitious projects, as well as enhance their knowledge of STEM through guest speakers. As one student described, they are being “given opportunities to apply science to real life.” In addition to their monthly meetings, students engage in quality interactions during field trips and internships. In 2013-2014, field trips included: CSUN Speed Mentoring Event, California Science Center/IMAX Hubble Space Documentary/Space Shuttle Endeavor, Golden Road Brewery Technical Tour, CSUN Civil Engineering Professors Lecture at GCC, JPL Internship Presentation at GCC, Van Nuys Airport Airplane Manufacturing Tour, and Universal Studios Technical Tour. Students were able to see the inner workings of what takes place in these facilities, and engage in follow up conversation with their peers about how their learning relates to their coursework and career interest. In addition to community field trips, participants had the opportunity to attend an AIMS2 Leadership retreat where they were covered topics such as: how to conduct themselves in the public setting and how to be a leader. Through team building activities, students were able to overcome fears and develop trust with one another. Students from GCC, CSUN, and COC participated.

In addition to the AIMS2 Leadership retreat, GCC participants had the opportunity to interact with peers from COC and CSUN through summer internship programs. One student appreciated being able to work with students from the other colleges as it made her feel “less anxious to be the only person in the lab.” She concluded: “[it] was fun collaborating on work.”

Description of Project Activities Related to the Objective
College of the Canyons and Glendale Community College, respectively, report specific project activities in detail both immediately above and below.

Project Activities at College of the Canyons
During this performance period, College of the Canyons established a drop-in tutorial schedule for math, engineering, and physics hosted by faculty and students.
College of the Canyons project faculty and staff are currently developing additional training workshops for peer tutors and, as mentioned earlier, are developing a tracking mechanism for AIMS2 scholars using peer tutors. With regard to this performance measures, COC’s AIMS2 scholars have participated in the following activities:

MESA STEM Week (http://www.canyons.edu/Offices/MESA/Pages/STEMWeek.aspx)
Company tour to Aerospace Dynamic Inc. (ADI)
Egg Drop competition
Various “lunch with alum” activities
Pasta and marshmallow tower competition, paper tower competition

We will track all scholar interactions with peer mentors from both COC and CSUN. We are currently developing additional training workshops for peer tutors and as mentioned earlier have developed a tracking mechanism for AIMS2 scholars using peer tutors.

Project Activities at Glendale Community College
Glendale Community College students are required to participate in tutoring to increase their math, science and language skills. The Glendale Community College Learning Center provides tutoring services for students, and is responsible for screening and training all student tutors. The AIMS2 Counselor/Coordinator reminds students of the tutoring support available and their requirement to seek tutoring services. The AIMS2 Counselor/Coordinator works with the GCC Supplemental Instructor Coordinator for tutor referrals. Additionally, the AIMS2 Counselor/Coordinator is continuing to work with CSUN administrators to identify additional CSUN students who can mentor GCC Cohort participants who have not been assigned a mentor. Feedback from participants, however, suggests that student-mentor relationships are best established naturally (i.e., making connections through internships or field trips), rather than randomly assigned by program administrators. Glendale Community College students will continue to have opportunities for peer-peer interaction by attending club meetings, field trips, and participating in club projects.

Plans to Use of Performance Data to Monitor Progress
College of the Canyons will track all scholar interactions with peer mentors from both College of the Canyons and CSUN. Glendale Community College plans for monitoring performance on these two measures include tracking student participation in tutoring and peer- peer interactions by using the results from the online survey questionnaire and group interview (i.e., participant focus group). Specifically, the quality of peer interactions will be collected in 2014 through student participant focus groups and a follow-up online survey. For the student focus groups, a protocol will be developed to inquire about students’ experiences in their peer mentorship, the types and frequency of activities, and what was most and least beneficial about the support they received. The focus groups will be led by the program evaluators and will be audio recorded as well as have hand-written notes taken during the discussion. Finally, we plan to address the need for peer mentoring of College of the Canyons and Glendale Community College students by CSUN students.
Description of Project Activities Related to the Objective

During the performance period, project faculty mentors and staff worked to support this project objective. For example, faculty mentors met with their cohort participants (in both Cohort 1, Cohort 2, and Cohort 3 starting in Fall 2013) to establish a faculty mentoring relationship and coordinate project activities with cohort participants, including cohort meetings and research project groups. Project activities currently under way and/or planned for the current and next performance periods include the following: participation in CSUN’s Tech Fest and Senior Design Project Showcase, peer tutoring and peer mentoring, participation in undergraduate research projects, projects or activities in an instructional lab of the faculty mentor, and introduction to an appropriate professional society student chapter in a discipline of the faculty mentor. In addition, project staff facilitated student participation in a resume workshop and participation in national organization for Latino/a students, including ASHIE (Alliance of HSI Educators) conference, HACU (Hispanic Association of Colleges and Universities) conference, Great Minds in STEM (formerly known as Hispanic Engineer National Achievement Awards) conference, and ASME (American Society of Mechanical Engineers) workshops. In fact, during the performance period, one AIMS2 Cohort 1 participant earned a national scholarship to the ASHIE conference (for more information on the national scholarship recipient, please see: http://www.ecs.csun.edu/aims2/documents/Florescongrats.pdf). In addition, 3 Cohort 2 participants attended the HACU conference with 2 of these participants earning national scholarships to attend (please see the following link for more information on these two national scholarship recipients, which comprised two out of twenty scholarship recipients: http://www.ecs.csun.edu/aims2/documents/HACUScholarshiprecipients.pdf). In addition, four cohort participants (1 from Cohort 1 and 3 from Cohort 2)—along with GCC cohort participants—attended the Great Minds in STEM conference with one cohort participant from CSUN on the Northrop Grumman team winning third place in the College Bowl competition (for more information on this CSUN student’s accomplishments, please see: http://www.ecs.csun.edu/aims2/documents/LeesiePumaHENAAC10-3-13.pdf). Finally, two cohort participants earned prestigious internships at Northrop Grumman and Honda Performance Division, respectively.

Plans to Use of Performance Data to Monitor Progress

With both baseline and actual performance data for the performance measure of this objective, we plan to publish the figures from this year’s report on the AIMS2 project website (http://www.ecs.csun.edu/aims2/) and discuss progress at our project meetings.

Table: Performance Measure

<table>
<thead>
<tr>
<th>Performance Measure</th>
<th>Measure Type</th>
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<tbody>
<tr>
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<tr>
<td>21 / 68</td>
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Explanation of Progress (Include qualitative data and data collection information)

Evaluation Data Sources and Methods for the Objective

During the performance period, we collected actual performance data on the single performance measure for this objective. During the performance period of the first project year (2012-2013), we collected baseline data for the performance measure. Quantitative data sources for both baseline and actual performance data for this measure are from CSUN institutional data (from CSUN’s Office of Institutional Research). During the performance periods for the last two project years, we worked with CSUN’s Office of Institutional Research to prepare the 2010-11 baseline data on student transfer figures for both College of the Canyons (COCC) and Glendale Community College (GCC) and to produce the 2013-14 figures of actual performance data.

Description of Preliminary Findings Related to the Objective

The baseline data for this measure is from CSUN’s Office of Institutional Research and includes institutional data (i.e., not project cohort data). Accordingly, the baseline data do not correspond to the number of project cohort participants but rather to all students who met the criteria for inclusion in the transfer cohort (see next sentence). The baseline data for Hispanic and/or low-income students in engineering and computer science at CSUN indicates that the three-year program completion (i.e., graduation) rate for the most recent entry term (Fall 2007) at project formation for Hispanic and/or low-income (i.e., Pell grant recipients) transfer students planning to major in a field in the College of Engineering and Computer Science was 26.5% (18/68). This program completion rate—26.5%—comprises the baseline data for the project and the basis for which the project target of 30% is set. Given the project target increase, the number of students who graduated is 21/68 (or just over 30%–30.9%). When we interpret actual performance data against the project target of 30.9% (21/68), we find that 39.2% (60/153) completed a degree program for the most recent period for which institutional data are available (entry term: Fall 2010). That is, of the 153 Hispanic and/or low-income transfer students planning to major in a field in the College of Engineering and Computer Science who entered in Fall 2010, 60 students completed a program of study within three years, for a total of 39.2% of all students in the entry cohort. What is more, this figure represents a nearly 10 percentage point increase over the Fall 2008 data (reported in the performance period for the first project year) of 29.3% (22/75) and a slight increase over last project year's data (i.e., second project year) of 38.8% (n=31/80) from the Fall 2009 entry cohort. Given the project target, we can conclude that we have exceeded the baseline and target measure for the performance measure of this objective.

Description of Project Activities Related to the Objective

During the performance period, project faculty mentors and staff worked to support this project objective. For example, faculty mentors met with their cohort participants (in both Cohort 1, Cohort 2, and Cohort 3 starting in Fall 2013) to establish a faculty mentoring relationship and coordinate project activities with cohort participants, including cohort meetings and research project groups. Project activities currently under way and/or planned for the current and next performance periods include the following: participation in CSUN’s Tech Fest and Senior Design Project Showcase, peer tutoring and peer mentoring, participation in undergraduate research projects, projects or activities in an instructional lab of the faculty mentor, and introduction to an appropriate professional society student chapter in a discipline of the faculty mentor. In addition, project staff facilitated student participation in a resume workshop and participation in national organization for Latino/a students, including ASHIE (Alliance of HSI Educators) conference, HACU (Hispanic Association of Colleges and Universities) conference, Great Minds in STEM (formerly known as Hispanic Engineer National Achievement Awards) conference, and ASME (American Society of Mechanical Engineers) workshops. In fact, during the performance period, one AIMS2 Cohort 1 participant earned a national scholarship to the ASHIE conference (for more information on the national scholarship recipient, please see: http://www.ecs.csun.edu/aims2/documents/Florescongrats.pdf). In addition, 3 Cohort 2 participants attended the HACU conference with 2 of these participants earning national scholarships to attend (please see the following link for more information on these two national scholarship recipients, which comprised two out of twenty scholarship recipients: http://www.ecs.csun.edu/aims2/documents/HACUScholarshiprecipients.pdf). In addition, four cohort participants (1 from Cohort 1 and 3 from Cohort 2)—along with GCC cohort participants—attended the Great Minds in STEM conference with one cohort participant from CSUN on the Northrop Grumman team winning third place in the College Bowl competition (for more information on this CSUN student’s accomplishments, please see: http://www.ecs.csun.edu/aims2/documents/LeesiePumaHENAAC10-3-13.pdf). Finally, two cohort participants earned prestigious internships at Northrop Grumman and Honda Performance Division, respectively.

Plans to Use of Performance Data to Monitor Progress

With both baseline and actual performance data for the performance measure of this objective, we plan to publish the figures from this year’s report on the AIMS2 project website (http://www.ecs.csun.edu/aims2/) and discuss progress at our project meetings.

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Project Objective: 8. Enhance the academic advising capacity in STEM fields at CSUN

Check if this is a status update for the previous budget period.

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8.b. Performance Measure* | Increase by two the number of advising/counseling sessions with students** in STEM fields over the 2010-11 baseline number*** **Note that the performance measures for this objective have been disaggregated from the original performance measure for reporting purposes only. **CSUN cohort participants only.***Baseline data per Instructions for Grant Performance Report; baseline data collected by cohort/cohort entry year.***Upper row represents data for Cohort 2 (Fall 2012) and lower row represents data for Cohort 3 (Fall 2013)

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Explanation of Progress (Include qualitative data and data collection information)

Explanation of Progress (Include Qualitative Data and Data Collection Information)

Evaluation Data Sources and Methods for the Objective

During the performance period, we collected baseline and actual performance data for these two measures through a combination of document data, student recruitment/applicant interviews, and student-structured journal sources. Specifically, we collected baseline data for Cohort 2 in early Fall 2012 and actual performance data for both Cohorts 2 and 3 for the second project objective (8b) through document (structured journal) data collection in late Fall 2013, Spring 2014, Summer 2014, and early Fall 2014. Previously, during the first project year, we collected baseline and actual performance data for the first objective (8a) through document data collection in Spring 2012. In addition, we collected baseline data for Cohorts 2 and 3 for the second objective (8b) in the CSUN student recruitment process in the late Spring 2012/early Fall 2012 terms (Cohort 2) and questionnaire administration process for Cohort 3. During baseline data collection for both Cohorts 2 and 3, we asked cohort participant applicants the number of academic advising sessions that they had attended in the Fall 2011 term or immediately prior to the formation of the cohort in Fall 2012 (Aims2 Cohort 2) or immediately prior to the formation of the cohort in Fall 2013 (Cohort 3). Finally, we collected Cohort 2 and Cohort 3 actual performance data during the period through structured journals data, which cohort participants completed on a monthly basis and submitted through an online project site. Student journaling occurs through student completion of an electronic journal form with items related to project outcomes including an item related to the number of academic advising sessions for the month. That is, students complete and submit an electronic journal entry related to academic advising (and other project activities) by the end of the month or the beginning of the next month. Once submitted, journal entry data entries in Excel occurred, followed by a tabulation of the aggregate number of counseling sessions. While baseline data for Cohort 4 (Spring 2014) and Cohort 5 (Fall 2014) have been collected, both baseline data and actual performance data for this cohort will be presented in the report for the final two project years (i.e., fourth and fifth project years).

Description of Preliminary Findings Related to the Objective

Preliminary Findings for Performance Measure 8a

With respect to the first performance measures (8a) for this objective, baseline data reveal that CSUN's College of Engineering and Computer Science had three full-time staff academic advisors in 2010-11. Given that the college had three staff academic advisors prior to the project, the project target is four total academic advisors. During the first project year (2012-13), we augmented the academic advising capacity of the college through the seven faculty mentors who offer academic advising to the their cohort participants. Further, actual performance data for the first performance measure (8a) demonstrate that, during the first project performance period (2012-13), we met the project target and achieved this component of the project objective with the addition of one new staff academic advisor to the college. The staff academic advisor, LaTesha Hagler, works with the student services office of the college and coordinates project activities related to cohort participant advising. With the addition of Tesha, the college now has four staff academic advisors in total, one above the baseline data. Given the actual performance data (n=4) and the project target (n=4), we have met this performance measure of the objective.

Overview of Preliminary Findings for Cohorts 2 and 3: Performance Measure 8b

When we turn to the second performance measure (8b) of this objective, we find baseline data collection for Cohorts 2 and 3 began with the CSUN student recruitment/applicant process in the late Fall 2012 term (Cohort 2) and early Fall 2013 term (Cohort 3). During recruitment interviews, we asked cohort participant applicants the number of academic advising sessions that they had received immediately prior to the formation of Cohort 2 in Fall 2012 or prior to the formation of Cohort 3 in Fall 2013.

Preliminary Findings for Cohort 2: Performance Measure 8b

The number of academic advising sessions that CSUN Cohort 2 participants reported prior to project entry is 11 (CSUN students only), which represents the baseline figure for this measure. Given the project target of increasing the number of academic advising sessions by two sessions per student, the current target number of sessions for Cohort 2 is 23. We derived this target by multiplying the number of unduplicated Cohort 2 participants at CSUN (n=29) by two (sessions per student) and adding 11 sessions to the total for a total of 69. Further, actual performance data for the second performance measure (8b)—collected through cohort participant journaling during the performance period—reveals that Cohort 2 participants reported 95 total academic advising sessions through the end of performance period. This figure (n=95) represents a decrease of 10 fewer advising sessions reported from the total number of academic advising sessions (n=105) for the performance period of the second project year but still falls above the total project target (n=69). The figure (n=95) for this performance period exceeds the project target of 69 total academic advising sessions.

Preliminary Findings for Cohort 3: Performance Measure 8b

Meanwhile, the number of academic advising sessions that CSUN Cohort 3 participants reported prior to project entry is 5 (CSUN students only), which represents the baseline figure for this measure. Given the project target of increasing the number of academic advising sessions by two sessions per student (n=9), the current target number of sessions for Cohort 3 is 23. We derived this target by multiplying the number of unduplicated Cohort 3 participants at CSUN (n=9) by two (sessions per student) and adding 5 sessions to the total for a total of 23. By contrast, actual performance data for the second performance measure (8b) shows that Cohort 3 participants reported 74 total academic advising sessions through the end of performance period for this performance period. This figure (n=74) exceeds the total project target (n=23) for the performance measure in the performance period and demonstrates a strong commitment to academic advising with cohort participants.

Description of Project Activities Related to the Objective

Current and planned project activities that support the two performance measures for this objective include faculty mentoring through cohort and individual student meetings, career advising through cohort meetings with faculty mentors, and resume workshops, academic advising in the student services center, an Academic Success Center, and Facilitated Academic Workshops. In addition, more informal advising occurs at events like AIMS2 orientations—which occurred on 8/23/13 for
Cohort 3 and 2/21/14 for Cohort 4—and AIMS2 workshops (which occurred on 2/12/14 in the past performance period). To support academic and career advising, we disseminate information through posts of upcoming workshops and events on our project’s website (http://www.ecs.csun.edu/aims2/) on the “Workshop Schedules” page. In addition, with the distribution of iPads to all cohort participants (in Cohorts 1, 2, 3, 4, and 5) by Fall 2014, we hope to support student access to academic and career advising tools available online and via email exchanges with project faculty and staff.

Plans to Use of Performance Data to Monitor Progress

We plan to continue to collect data to support performance measure 8b with structured journaling (via a web-based form in the Moodle cohort sites) and will continue on an ongoing basis through the next performance period. We anticipate the reporting of actual performance data for second measure (8b) in the next performance report for Cohort 3 and Cohort 4 and plan to monitor progress on this second performance measure through planning discussions in project meetings.
Preliminary Findings for Cohort 2: Performance Measures 9a, 9b, and 9c

**Description of Preliminary Findings Related to the Objective**

The University Corporation -- Engineering & Computer Science

**Explanation of Progress (Include qualitative data and data collection information)**

Evaluation Data Sources and Methods for the Objective

With respect to baseline data for these three performance measures of this objective, data collection began with the Cohort 2 and Cohort 3 student recruitment cycles in early Fall 2012 (Cohort 2) and early Fall 2013 (Cohort 3). During the interview and/or questionnaire administration process, we asked cohort applicants for Cohorts 2 and 3 the number of tutoring sessions, academic workshops, and supplemental lab sessions in which they had participated prior to program application.

**Description of Preliminary Findings Related to the Objective**

Preliminary Findings for Cohort 2: Performance Measures 9a, 9b, and 9c

Similarly, baseline data for the three performance measures of this objective during the performance period reveal that the number of Cohort 2 students who reported—prior to program entry—having participated in tutoring sessions is 13, the total number of Cohort 2 students who reported having participated in an academic workshop is six, and the total number of Cohort 2 students who reported participating in supplemental lab sessions is seven. These three figures relate to the actual number of Cohort 2 students (i.e., headcount) rather than sessions or workshops. As such, these three figures represent Cohort 2 baseline data for these three measures, respectively. With these baseline data, the project targets—all of which represent a 75% increase—for Cohort 2 for the three measures are 23 students (9a), 11 students (9b), and 12 students (9c). When we turn to actual performance data for Cohort 2 on the three measures, we discover that 10 students reported participating in tutoring sessions, representing 34% (10/29) of all Cohort 2 participants. Indeed, actual performance data for this performance measure indicate that the number of students who participated in tutoring (n=10) approached the target (n=23). For performance measure 9b, 6 students reported participating in academic workshops...
through the period, which represents 21% (6/29) of Cohort 2 participants and suggests that actual performance data (n=6) fell short of the project target (n=11). Finally, with respect to performance measure 9c, 1 student reported participating in a supplemental lab, which points to actual data (or 3% of all Cohort 2 participants) falling short of the project target (n=12) and demonstrates progress on this project performance measure (9c) during the period. Actual performance data on these three measures demonstrate continued progress in meeting this project objective (via performance measures 9a, 9b, and 9c) related to increasing student participation in three key academic activities: tutoring, academic workshops, and supplemental labs. Finally, we suspect that students in Cohort 2 may not have demonstrated a level of participation in the three activities that relate to this objective sufficient to meet or exceed the target because they were moving toward senior standing.

Preliminary Findings for Cohort 3: Performance Measures 9a, 9b, and 9c

During the performance period, baseline data for the three performance measures of this objective reveal that 5 students reported having participated in tutoring sessions in Cohort 3, while a total of three students reported having participated in an academic workshop prior to program entry. Furthermore, three students from Cohort 3 had reported participating in supplemental lab sessions prior to project entry (i.e., in Fall 2013) during the baseline data collection process. These three figures relate to the number of students (i.e., headcount) rather than sessions or workshops. Accordingly, these three figures represent Cohort 3 baseline data for these three measures. Given the baseline data, the Cohort 3 project targets—all of which represent a 75% increase—for the three measures include 9 students (9a), 5 students (9b), and 5 students (9c). In contrast, actual performance data for the three measures for Cohort 1, collected through structured journaling, reveal that 7 students reported participating in tutoring sessions (performance measure 9a). As a performance measure that requires us to collect headcount data rather than frequency data, these data demonstrate substantial progress toward the project target for student participation in tutoring sessions and represents 78% (7/9) of all Cohort 3 participants. The actual performance data for this performance measure indicate that the number of students who participated in tutoring (n=7) approached the target (n=9). When we examine tutoring participation by major, we find that students across all majors participated in tutoring. As we see in the table below, computer science (n=4) and electrical engineering (n=6) recorded the most students who participated in tutoring. Finally, while more students from Cohort 2 participated in tutoring (10 in Cohort 2 vs. 7 in Cohort 3), a greater percentage of Cohort 3 students (78%) engaged in peer tutoring during the performance period.

Peer Tutoring Participation by Major and Cohort, AIMS2 Cohort Participants, Cohorts 2 and 3, October 2013-September 2014

<table>
<thead>
<tr>
<th>Cohort 2: (Total = 10)</th>
<th>Cohort 3: (Total = 7)</th>
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<tbody>
<tr>
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</tr>
<tr>
<td>Computer Science – 3</td>
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With respect to performance measure 9b, 6 students from Cohort 3 reported participating in academic workshops through the period, which represents 67% (6/9) of Cohort 3 participants and indicates that actual performance data (n=6) exceeded the project target (n=5) and the project objective has been achieved for this performance measure. Finally, with respect to performance measure 9c, 4 students (Cohort 3) reported participating in a supplemental lab. Accordingly, actual data indicate that performance in this area of the objective (i.e., 44% of all Cohort 3 participants) fell short of the project target (n=5). Taken together, actual performance data on these three measures demonstrate substantial progress in meeting (performance measures 9a and 9c) or evidence of achieving (performance measures 9b) this project objective related to increasing student participation by 75% in tutoring, academic workshops, and supplemental labs.

Description of Project Activities Related to the Objective

With respect to the first performance measure (9a), with the formation Cohort 2 in August 2012 and Cohort 3 in August 2013, we have continued to recruit, hire, train, and assign classes to peer tutors from CSUN to work with cohort participants. In addition, we developed a model to recruit, hire, train, and assign peer tutors within faculty mentor groups to facilitate closer ties between faculty mentors, peer tutors, and cohort participants. As part of the process, project faculty and staff developed a process to advertise, recruit, hire, and train peer tutors from CSUN’s upper-division undergraduate and graduate students in the College of Engineering and Computer Science at the department or discipline level—within the respective faculty mentor groups. Similarly, faculty mentors worked with project staff to identify the "bottleneck" and/or "gateway" courses where tutoring may be needed for cohort participants. Also as part of the process, we developed a complete tutoring list with names and contact information of tutors to distribute and disseminate to cohort participants (see: http://www.ecs.csun.edu/aims2/peer_tutors.html). With these strategies, we seemed to have supported an increase in cohort participant use of peer tutoring and peer mentoring. In addition to these activities related to tutoring (i.e., performance measure 9a), the second performance measure (9b) guides our work with workshops, where we post and disseminate information on upcoming workshops on our project’s website (http://www.ecs.csun.edu/aims2/) on the “Workshop Schedules” page (http://www.ecs.csun.edu/aims2/workshop_schedules.html). Finally, faculty mentors formed and/or planned to form small group sessions with cohort participants in their instructional labs (to support performance measure 9c). To support student participation in supple-mental labs (performance measure 9c), we adopted technology resources during the first three years of the project. During the first project year, we received the HP tab-lets (2760’s) and loaded DyKnow, the software that allows users to collaborate interactively so that faculty mentors and cohort participants can use them during supple-mental lab, research, or mentor sessions. Over the second project year, we added Apple tablets to the cohort experience with the distribution of iPads to each faculty and student in the project to support workshops and supplemental lab participation.

Plans to Use of Performance Data to Monitor Progress

Data collection to measure actual performance on these three performance measures for this objective consists of survey data collection (e.g., cohort journaling), which occurs through student completion of an electronic journal form with items related to project outcomes. Specifically, we included items to measure performance in these three objectives when we ask students to indicate the number of sessions or workshops that they attended in the past month, including the number of supplemental lab sessions, the number of academic advising sessions, and the number of academic workshops. As part of the journaling process, students complete and submit an electronic journal entry by the end of every month. Once submitted, data extracts in Excel occur, after which a tabulation of the aggregate number of counseling sessions are performed. Finally, we plan to continue student journaling so that we can continue monitoring and reporting actual performance data for all three measures in the performance report for next year’s project period.
The primary instrument that we used to collect data from the 6 participants was an interview protocol. One facet of the interview protocol was included to collect descriptive data related to the students’ interests, participation, and impediments regarding on-campus research. We asked the participants to respond to the following questions to frame this conversation: “Do you feel like it is necessary for you to work while you attend CSUN?” Has this affected your ability to take research opportunities in the AIMS2 program? How so?” Using the interview protocol, we conducted one-on-one, 60-minute personal interviews with students from Cohorts 1, 2, 3, and 4, whom we invited to participate in the interviews through email. Once we received their response, we set times and dates for the interviews when both the particular student and one of the re-searchers could meet. The Dean’s office arranged a secure, quiet room available for the interviews, which we conducted during Summer/Fall 2014. To keep track of the participants, we assigned each cohort participant a three-digit random number. During the interview session, we read an informed consent form aloud to the participants and audio recorded the session. Upon completion of the interviews, we transcribed the audio files into a de-identified document.

### Performance Measure

**Performance Measure**

**10.a. Performance Measure** Increase by 50 percent CSUN students who participate in research-related activities with faculty in STEM fields ***Note that the performance measures for this objective have been disaggregated from the original performance measure for reporting purposes only. **Note that in the ratio columns of the target and actual performance data (the numerator represents the number of students that are expected to attain proficiency or actual performance data (e.g., the number of students that attained proficiency), and the denominator represents the universe (e.g., all students served)” (Instructions for Grant Performance Report, p. 7).***

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**Performance Measure**

**10.a. Performance Measure** Increase by 50 percent CSUN students who participate in research-related activities with faculty in STEM fields ***Note that the performance measures for this objective have been disaggregated from the original performance measure for reporting purposes only. **Note that in the ratio columns of the target and actual performance data (the numerator represents the number of students that are expected to attain proficiency or actual performance data (e.g., the number of students that attained proficiency), and the denominator represents the universe (e.g., all students served)” (Instructions for Grant Performance Report, p. 7).***

<table>
<thead>
<tr>
<th>Measure Type</th>
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**Performance Measure**

**10.b. Performance Measure** Improve the research interests/skills of CSUN students in STEM fields ***Note that the performance measures for this objective have been disaggregated from the original performance measure for reporting purposes only. **Baseline data per Instructions for Grant Performance Report; baseline data collected by cohort/cohort entry year ***Upper row represents data for Cohort 2 (Fall 2012) and lower row represents data for Cohort 3 (Fall 2013) **Baseline data per Instructions for Grant Performance Report; baseline data collected by cohort/cohort entry year ***Upper row represents data for Cohort 2 (Fall 2012) and lower row represents data for Cohort 3 (Fall 2013) **Baseline data per Instructions for Grant Performance Report; baseline data collected by cohort/cohort entry year ***Upper row represents data for Cohort 2 (Fall 2012) and lower row represents data for Cohort 3 (Fall 2013) **Baseline data per Instructions for Grant Performance Report; baseline data collected by cohort/cohort entry year ***Upper row represents data for Cohort 2 (Fall 2012) and lower row represents data for Cohort 3 (Fall 2013) **Baseline data per Instructions for Grant Performance Report; baseline data collected by cohort/cohort entry year ***Upper row represents data for Cohort 2 (Fall 2012) and lower row represents data for Cohort 3 (Fall 2013) **Baseline data per Instructions for Grant Performance Report; baseline data collected by cohort/cohort entry year ***Upper row represents data for Cohort 2 (Fall 2012) and lower row represents data for Cohort 3 (Fall 2013) **Baseline data per Instructions for Grant Performance Report; baseline data collected by cohort/cohort entry year ***Upper row represents data for Cohort 2 (Fall 2012) and lower row represents data for Cohort 3 (Fall 2013) **Baseline data per Instructions for Grant Performance Report; baseline data collected by cohort/cohort entry year

**Explaination of Progress (Include qualitative data and data collection information)**

**Explaination of Progress (Include Qualitative Data and Data Collection Information)**

**Evaluation Data Sources and Methods for the Objective**

**Quantitative Data Sources and Data Collection Procedures for Performance Measure 10a**

For Cohort 2 (Spring 2013), data collection for the first performance measure (10a) of this objective commenced with the cohort recruitment process in late Summer 2012 session and early Fall 2012 term during applicant interviews. Meanwhile, Cohort 3 baseline data collection for this performance measure (10a) occurred via cohort questionnaire administration. During the baseline data collection process for both cohorts, we asked cohort applicants for the number of faculty research-related sessions that they had in the Fall 2012 term (one term prior to program entry for Cohort 2) and Spring 2013 term (one term prior to program entry for Cohort 3). We found that Cohort 2 students (n=0) had not participated in any faculty research session prior to entry into the project, while a third of Cohort 3 students (n=3) had participated in faculty research. Across the 2 years, Cohort 2 and 3 project target for the first performance measure was an increase of over 50% of the baseline figure. The actual project target for Cohort 2 is 1/29 and for Cohort 3 is 6/9. Data collection to measure actual performance on these two performance measures consists of a combination of document data and survey/questionnaire data collection (e.g., structured journaling), which occurs through student completion of a web-based journal form with items related to project objectives. Specifically, we included items to assess performance on measure 10a of this objective where we ask students to indicate the number of faculty research sessions that they attended in the past month. Once submitted, we extracted data from journal entries into Excel, after which we tabulated the aggregate number of re-search-related sessions with faculty.

**Interview Data Sources and Sample for Performance Measure 10b**

In evaluating performance measure 10b, we analyzed a subsample of 6 interviews from a pool of 26, all of which were conducted during Summer and early Fall 2014. Participants from the total sample were selected using a mixed sampling strategy of criterion and stratified purposeful sampling. Specifically, we used a criterion sample to select participants that met specific criteria for inclusion in the AIMS2 program. These criteria include: a declared STEM major enrolled full-time in a CECS program; inclusion in a group that is economically, educationally, and environmentally disadvantaged; and/or transfer status as a student of Hispanic background. Additional criteria for inclusion in the interviews match AIMS2 participation requirements, including the following: (a) pass all courses enrolled in each semester, (b) continue to be a declared STEM major, (c) enroll in a minimum of 12 units each semester, (d) earn a grade of “C+” or better in each class enrolled, and (e) participate in all components of the program. In addition to the criterion strategy described above, we used stratified purposeful sampling in order to achieve a diverse sample. As such, we solicited inter-view participation from Cohorts 1, 2, 3 and 4 in Summer 2014 with a stratification based on gender, ethnicity, and program major. That is, we reviewed the full roster of AIMS2 students in all cohorts and purposefully tried to fill certain strata. The goal of this sampling strategy was to create diverse strata by major and ethnicity. The sub-sample of 6 interviews used to evaluate performance measure 10b also reflects this diversity. For example, 1 participant is from Cohort 1, 3 are from Cohort 2, 1 is from Cohort 3, and 1 is from Cohort 4. With respect to gender, 4 of the participants are male while 2 are female. In terms of ethnicity, 4 of the interviewees are of Hispanic background, 1 is Middle Eastern, and 1 is White. Although African Americans and Asian groups are not included in this subsample, these groups are also represented by low numbers in the total sample and in the entire AIMS2 program. Additionally, these 6 participants come from majors across engineering and computer science fields, and populate the following distribution: 2 from Mechanic Engineering (1 male, 1 female), 2 from Computer Science and Computer Information Technology (1 male, 1 female), and 2 from Electrical and Computer Engineering (both male). In this subsample, none of the participants were majoring in Civil Engineering and Construction Management or Manufacturing Systems Engineering.

**Interview Data Collection Instruments and Procedures for Performance Measure 10b**

The University Corporation -- Engineering & Computer Science
Description of Preliminary Findings Related to the Objective

Overall, given that student journaling began in February 2012 for Cohort 1 and August 2012 for Cohort 2, continuing through the current performance period and that student interviews took place over the Summer 2012, Spring 2013, and Summer 2013 terms, we are reporting actual performance data for both measures for the second project year. In addition to the procedures described above, student interviews are used here to assess the second performance measure (10b). For this performance period, we used these two procedures to support a mixed-methods approach with the collection of both quantitative and qualitative data.

Preliminary Findings for Cohorts 2 and 3: Performance Measure 10a

For Cohort 2, actual performance data for this first measure indicate that we have partially achieved this part of this objective. In fact, during the current performance period, 9 participants from Cohort 2 reported engagement in faculty research, which represents 31% of Cohort 2. From Cohort 3 participants, 5 students reported involvement in faculty research, a figure which represents 56% (5/9) of all Cohort 3 participants. As a result, actual performance data related to this performance measure (10a) of this objective demonstrate that we have exceeded the project target (n=1) for Cohort 2 and made substantive progress toward the target for Cohort 3.

We suspect that the reason that we did not meet the project target for Cohort 3 during this performance period relates to the status of Cohort 3 students as AIMS2 cohort participants at Glendale Community College and College of the Canyons, where they had opportunities to participate in faculty research with their respective college faculty and CSUN faculty mentors.

Preliminary Findings for Cohorts 2 and 3: Performance Measure 10b

Over the past year, AIMS2 students have participated in a variety of campus research projects. In evaluating the second performance measure (10b), which relates to the improvement of research skills and interests, we learned that participants had worked on solar panels, smart grids, satellites, Internet hardware, and data collection technology. These projects have also been service-oriented, and include 1) the development of a website that showcases cohort members’ research and 2) the implementation of computer science/computer information technology programs for elementary school children. For these individuals, research experience has facilitated effective interaction with faculty and the application of knowledge relevant to their majors. On this point, one student stated, “Originally I didn’t know anything about it so it was good experience. I’m glad I learned something.” Another student added, “I was able to learn the basics and apply it and put it all together.” For more information related to student and faculty research, please see the Student Accomplishments section of the project website that is updated regularly with information on accomplishments: http://www.ecs.csun.edu/aims2/student_accomplishments.html.

Although most of the interviewees had participated in research and indicated beneficial experiences, some participants detailed issues concerning being accepted for re-search positions as well as the practice of the research itself. Specifically, two of the students we spoke to had not conducted any research. Referring to her work obligations, one participant stated, “There was a lot. It kept me from participating in those opportunities.” Students also expressed how grades could preclude them from re-search experience. This same student continued: “I was kind of limited because my GPA had dropped since I had gone back to work and wasn’t able to maintain those grades as much as I would have wanted to.”

Despite these drawbacks associated with faculty research, the overall sentiment evoked in the interviews was one of appreciation. Cohort participants illustrated how re-search within the AIMS2 program engendered valuable exposure to the field, application to their classes, and career opportunities. One participant shared, “This summer I’m working on the [redacted] with Dr. [redacted] so it’s different research. I’m doing it as my senior design project.” Another commented on the equipment available, saying, “With the [redacted], we can actually save our data because [redacted] so it’s a cool thing. I like it. And the other equipment is very modern. Whatever we ask for, we can get it at the main equipment lab.” Furthermore, working closely with AIMS2 faculty members in a research capacity allows students to demonstrate their aptitude in the field. Such an environment creates opportunities for validation. To this point, one student reflected: “[Redacted] said, ‘I would take you into my company.’” Similarly, interviewees recognize the influence that research experience has in the job market. As one student shared, “If I put down working on a [redacted] it is pretty impressive.” Importantly, the students also value the research prospects the program affords them, as indicated by the following statement: “If I wasn’t in AIMS, I wouldn’t have done the [redacted] project.”

Description of Project Activities Related to the Objective

During the current performance period, faculty mentors worked to develop research-related activities with Cohort 2 and Cohort 3 participants. Current and/or planned activities that faculty mentors considered for Cohort 2 and Cohort 3 participants during the period include projects in one of their instructional labs and/or research labs, and participation in related student professional events, networking, and competitions (please see “Description of Project Activities Related to the Objective” for objectives 1 and 7 for more details). Further, faculty mentors facilitated research project group coordination and meetings (including the recruitment of cohort participants for summer research) as part of their faculty mentor sessions with cohort participants. With information from the AIMS2 website, project staff, and faculty mentors, we can report that following Summer 2014 research projects with faculty mentors:

**Professors Bob Ryan and George Youssuff:**
“Fabrication and Characterization of Thin-Film PZT Using Sol-Gel Spin Coating Process” with 2 COC students and 2 CSUN students

**Professors Bob Ryan and Vihbah Durghes:**
“Designing Experimental Setup for Flow Visualization to Understand Complex Fluid Dynamics Flows” with 1 CSUN student and 1 LA Mission student

**Professor Steward Prince:**
“5-Axis Machining” with 2 CSUN students

**Professor Behzad Bavarian:**
“Graphene Properties and Engineering Applications” with 1 CSUN student
Corrosion Inhibitors for Materials” with 1 MHC student
“Alternatives for Environmentally Friendly Battery Materials” with 3 COC students, 1 GCC student, 2 CSUN students

**Professor Bruno Osorno:**
“The Importance of Renewable Energy and Sustainability” with 2 COC students, 1 GCC student, and 3 CSUN students

**Professor Gloria Melara:**
“Challenges of Supporting Technology K-6: Is a Raspberry Pi a Solution?” and “Pragmatic Experience on Concurrency, Parallel, and Distributed Programming” with 5 CSUN students, 2 GCC students, and 1 LA Mission College student

Other project activities that facilitated cohort participation in faculty research activities included small group mentoring sessions with faculty mentors, individual faculty mentoring appointments, participation in CSUN’s Tech Fest (2/18/14) and Senior Design Project Showcase (4/18/14), and introduction to appropriate professional society student chapters in the discipline of the faculty mentor.

Plans to Use of Performance Data to Monitor Progress

With actual performance measure data for both measures in this project objective for this period, we have reported baseline and actual performance measure in this report. As a result, we plan to continue to monitor progress on both performance measures through use of structured journaling in Moodle. During the next performance period, discussions of results from both data collection procedures will support the monitoring or progress of this objective.
Project Objective: 11. Increase and enhance student-faculty interaction in STEM fields at CSUN

Check if this is a status update for the previous budget period.

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<th>Measure Type</th>
<th>Quantitative Data</th>
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<td>11a. Performance Measure* Increase by 90 percent the frequency of student-faculty interactions over the 2010-11 baseline rate*** &quot;Note that the performance measures for this objective have been disaggregated from the original performance measure for reporting purposes only.&quot; **Note that in the ratio columns of the target and actual performance data the numerator represents the numerical target (e.g., the number of students that are expected to attain proficiency) or actual performance data (e.g., the number of students that attained proficiency), and the denominator represents the universe (e.g., all students served).&quot; (Instructions for Grant Performance Report, p. 7). ***Baseline data per Instructions for Grant Performance Report; baseline data collected by cohort/cohort entry year. Upper row represents data for Cohort 2 (Fall 2012) and lower row represents data for Cohort 3 (Fall 2013).</td>
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<td>11b. Performance Measure Improve the quality of interactions between CSUN students and faculty in STEM fields. &quot;Note that the performance measures for this objective have been disaggregated from the original performance measure for reporting purposes only.&quot; **Baseline data per Instructions for Grant Performance Report; baseline data collected by cohort/cohort entry year.</td>
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<td>Project</td>
<td>68 / 68</td>
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Explanation of Progress (Include qualitative data and data collection information)

Evaluation Data Sources and Methods for the Objective

Quantitative Data Sources and Data Collection Procedures for Performance Measure 11a During the current performance period, we employed both structured journals and interviews to assess the two performance measures of this objective with both Cohort 2 and Cohort 3 participants. These two data collection procedures represent a mixed-methods approach with the collection of both quantitative and qualitative data. In the student journals, guided by a set of close- and open-ended items, we asked respondents to indicate the number of interactions during the month and the types of interactions, including in-class interactions, faculty office hours, email contact, phone contact, research session, individual mentor appointment, group mentor meeting, on-campus project event, off-campus project event, or other event. Further, we asked cohort participants to describe their interactions with their faculty mentor during the month. In addition to structured journaling, we conducted cohort participant interviews in Summer 2014 and Fall 2014, which we detail below.

Interview Data Sources and Sample for Performance Measure 11b In evaluating performance measure 11b, we analyzed a subsample of 6 interviews from a pool of 26, all of which were conducted during Summer and early Fall 2014. Participants from the total sample were selected using a mixed sampling strategy of criterion and stratified purposeful sampling. Specifically, we used a criterion sample to select participants that met specific criteria for inclusion in the AIMS2 program. These criteria include: a declared STEM major enrolled full-time in a CECS program; inclusion in a group that is economically, educationally, and environmentally disadvantaged; and/or transfer status as a student of Hispanic background. Additional criteria for inclusion in the interviews match AIMS2 participation requirements, including the following: (a) pass all courses enrolled in each semester, (b) continue to be a declared STEM major, (c) enroll in a minimum of 12 units each semester, (d) earn a grade of "C+" or better in each class enrolled, and (e) participate in all cohort meetings. In addition to the criterion strategy described above, we used stratified purposes to the sampling in order to achieve a diverse sample. As such, we solicited inter-view participation from Cohorts 1, 2, 3 and 4 in Summer 2014 with a stratification based on gender, ethnicity, and program major. That is, we reviewed the full roster of AIMS2 students in all cohorts and purposefully tried to fill certain strata. The goal of this sampling strategy was to create diverse strata by major and ethnicity. The sub-sample of 6 interviews used to evaluate performance measure 11b also reflects this diversity. For example, 1 participant is from Cohort 1, 3 are from Cohort 2, 1 is from Cohort 3, and 1 is from Cohort 4. With respect to gender, 4 of the participants are male while 2 are female. In terms of ethnicity, 4 of the interviewees are of Hispanic background, 1 is Middle Eastern, and 1 is White. Although African Americans and Asian groups are not included in this subsample, these groups are also represented by low numbers in the total sample and in the entire AIMS2 program. Additionally, these 6 participants come from majors across engineering and computer science fields, and populate the following distribution: 2 from Mechanical Engineering (1 male, 1 female), 2 from Computer Science and Computer Information Technology (1 male, 1 female), and 2 from Electrical and Computer Engineering (both male). In this subsample, none of the participants were majoring in Civil Engineering and Construction Management or Manufacturing Systems Engineering.

Interview Data Collection Instruments and Procedures for Performance Measure 11b The primary instrument that we used to collect data from the 6 participants was an interview protocol. We designed the interview protocol to collect descriptive data related to the cohort students’ interactions with faculty. We asked the cohort participants to respond to the following main questions—in addition to follow-up and probing questions—to guide the conversation: “In general, how do your faculty members make you feel as a student? Do you feel like they think you can succeed?” We also asked the participants the following: “Do you find that faculty members have a genuine concern for teaching students? Are they personable and approachable toward students? Do they treat students equally? Structure learning experiences that make students feel like they can understand the material? Work individually with those students needing extra help? Provide meaningful feedback to students?” Lastly, we asked, “Do you feel capable of getting to know the faculty here well enough that they will be important connection for you in the future?” Using the interview protocol, we conducted one-on-one, 60-minute personal interviews with Cohorts 1, 2, 3, and 4, whom we invited to participate in the interviews through email. Once we received their responses, we se treated mutually agreed-upon times for the interviews. The Dean’s office arranged a secure, quiet room available for the interviews, which we conducted during Summer/early Fall 2014. To keep track of the participants, we assigned each cohort participant a three-digit random number. During the interview session, we read an informed consent form aloud to the participants and audio recorded the session. Upon completion of the interviews, we transcribed the audio files into a de-identified data file. The recorded audio files were subsequently destroyed. We stored the transcribed files on a password-protected, secure laptop.

Interview Data Analysis Procedures for Performance Measure 11b After transcription, we proceeded with coding and thematic data analysis using ATLAS.ti, a computer-aided qualitative data analysis software program. Specifically, we used the themes that emerged from the ATLAS.ti analysis and from codes developed in hard copy transcribed data files. We then categorized the themes that emerged from codes that we clustered according to experiences and interactions of the cohort participants. These categories were used to align thematic findings to the performance measures associated with program objectives. Finally, we extracted direct quotes taken from the interviewees to illustrate themes and support overall
findings.

Description of Preliminary Findings Related to the Objective

Preliminary Findings for Cohorts 2 and 3: Performance Measure 11a

During Cohort 2 (formation in Fall 2012) applicant interviews and Cohort 3 (formation in Fall 2013) questionnaire administration, we asked interviewee the number of student-faculty interactions that they had in the Fall 2012 (Cohort 2) and Spring 2013 (Cohort 3)—to establish baseline data. Results from interview and questionnaire responses suggest that students in Cohort 2 logged a total of 96 separate interactions with faculty in Spring 2012 prior to cohort entry in Fall 2012 and students in Cohort 3 recorded 36 discrete interactions with faculty in Spring 2013 prior to cohort entry in Fall 2013. These figures represent the respective cohort baseline data for the first performance measure (11a) and set the respective project targets of 181 (Cohort 2) and 68 (Cohort 3) total interactions between students and faculty. When we examine actual performance data for the first measure (11a), we find that Cohort 2 students reported that they had 834 total interactions with faculty in the current performance period, a dramatic increase over the number of interactions (n=897) reported during the previous performance period that exceeds the project target (n=181) for Cohort 2 on this measure. Meanwhile, Cohort 3 students recorded a total of 302 interactions with faculty during the period, which clearly indicates that Cohort 3 surpassed the project target of 68 interactions. These figures (n=834 for Cohort 2 and n=302 for Cohort 3) represent increases over the respective baseline figures (n=181 for Cohort 2 and n=68 for Cohort 3) for both cohorts and demonstrate achievement of the performance measure to increase student-faculty interaction by 90% for both cohorts.

Preliminary Findings for Cohorts 2 and 3: Performance Measure 11b

Performance measure 11b relates to the quality of student-faculty interaction. After careful analysis of the interviews, we found that cohort participants generally maintained meaningful interactions with their faculty mentors. Moreover, each of the 6 individuals interviewed expressed beneficial and worthwhile relationships with our assigned faculty members. The causes for these attitudes include faculty mentors offering information related to studying, resources, and classes. For example, one student noted, “I would ask ways to improve my studying in order to get better grades. How can I improve myself? What kind of sources can I get in order to get a better under-standing of the concepts taught in class? They were really helpful with these things.” Another student agreed: “I always sought guidance from Prof. [redacted] here. [Redacted] was kind of like the person to go to if I had any issues for any problems. I’m not able to take this class. What can I do? [Redacted] would offer different suggestions, different paths I could take.” A member from Cohort 2 expressed a similar situation: “Dr. [redacted] gave us advice and told us what we needed to do and asked how were we doing.”

While faculty mentors have proved to be a trove of information for pathways at CSUN, they have also given advice to AIMS2 members regarding the STEM industry, internships, and job opportunities. One student shared: “[Redacted] helped me a lot with the internship. [Redacted] was really friendly and [redacted] helped me to get familiar with my courses. Those were the main things that helped me get very comfortable here.” In addition, several faculty mentors are in the habit of sending job and intern-ship opportunities via email, as demonstrated by the following quote: “They tell you about all of the internships and opportunities going on. There’s always an email from [redacted]. [Redacted] always sending out a bunch of emails about opportunities. [Redacted] always showing us these are the jobs that match your field.” In some instances, faculty members have detailed their previous career experiences before coming to CSUN, lending unique insight to students for what lies ahead. On this point, one cohort participant stated, “Dr. [redacted] used to work for [redacted] also but [redacted] stopped and started teaching. I asked [redacted] once why [redacted] did that and [redacted] just said [redacted] preferred teaching. [Redacted] got a Ph.D. in engineering and started teaching.”

Overall, though, the general support and encouragement that the faculty mentors provide seems to be their most effective qualities. As one student expressed, “So it’s really nice. The professor explained everything to me and everything was great. [Redacted] really helps me a lot.” In one instance, a faculty mentor provided encouragement for a student who had just been told by a different professor to switch majors. The student reflected, “I even told Dr. [redacted] about it. And [redacted] just told me that it was strange but you should just blow it off. Just do better and show him different.” Additionally, faculty members can turn their regular weekly meetings with AIMS2 participants into a quasi-support group. For example, one student stated, “We meet every week and we meet for about an hour or two hours with Dr. [redacted] and [redacted] two advisors are there...so then we have access to them. Apart from that they also give us their email and phone number and make themselves very accessible.” At these meetings, faculty mentors can imbue students with confidence and the ability to take risks. Indeed, one participant described, “[Redacted] still goes ahead and gives us confidence and when we get to points where we might be stuck [redacted] shall bring in either former students or people in the field to give us a little help and we’ll go from there. And because [redacted] gives us so much freedom I think that’s where we get the confidence from that.” The preceding quotes paint a picture of the beneficial inter-action between AIMS2 cohort members and their faculty members. A Cohort 2 member sums it up nicely: “If I wasn’t in the AIMS program then I probably would have floundered a little bit...but I had that support group.”

Description of Project Activities Related to the Objective

Overall, project activities are intended to facilitate frequent and quality student-faculty interaction in the current performance period. To that end, faculty mentors met regularly with their cohort participants to foster a faculty mentoring relationship; plan project activities; and to design research activities. More specifically, faculty mentoring with cohort participants facilitated the development of the peer tutor/mentor relationships, academic advisement and individual student meetings, supervision of student club/organization and club start-up, and coordination and facilitation of small group workshops. Additionally, faculty mentoring relationships tended to facilitate more frequent communication with cohort participant through multiple modes of communication such as email messages and phone calls. One result of these exchanges is that students secured permission numbers for closed classes for cohort participants. More broadly, the AIMS2 project presented the Summer 2014 research projects to the project staff and faculty during the monthly meeting (September 18, 2014), which was a key opportunity for faculty mentors to interact with students. Furthermore, the AIMS2 socials (which occurred on 8/23/14 and 2/21/14) supported interaction with faculty mentors. We should note that as upcoming events and activities approached, they were included on a calendar on the project’s website (http://www.ecs.csun.edu/aims2/) under the “Upcoming Events” and “Field Trips” pages. Finally, the iPad initiative appears to have facilitated contact between faculty and students. For instance, Cohort 2 students reported using the iPad 770 times during the month of November during the project period. For the same month, Cohort 3 students reported using the iPad 270 times. For a complete picture of iPad use by month and cohort, AIMS2 Cohort Participants, Cohorts 2 and 3, October 2013-September 2014

Oct 13
Cohort 2 – 1870
Cohort 3 – 210
Total Oct 13 – 2080

Nov 13
Cohort 2 – 770
Cohort 3 – 270
Total Nov 13 – 1040

Dec 13
Cohort 2 – 1401
Cohort 3 – 115
Total Dec 13 – 1516

Jan 14
Cohort 2 – 1470
Cohort 3 – 212
Total Jan 14 – 1682

Feb 14
Cohort 2 – 765
Cohort 3 – 1132
Total Feb 14 – 1897

Mar 14
Cohort 2 – 1527
As seen in the table above, Cohort 2 and Cohort 3 students used the iPad 13,365 and 5,554 times during the course of the performance period. Not surprisingly, the peak months for iPad use among students included August through October and February through May. On a per-student basis, Cohort 2 students logged an average of approximately 461 iPad uses and Cohort 3 students recorded an average of approximately 617 iPad uses during the period. When we explore how students used the iPad, we find that they reported academic and social functions that support their work as students. One student shared: "The iPad has become integral to my academic life. It houses all my notes, assignments, appointments, and even textbooks." Another student noted, "My iPad has drastically improved my academic experience. I can do all my homework on my iPad and read all my books. Also, I found a way to use, programs typically used on PC's, on my iPad." Finally, a student detailed: "I am very fortunate to have the iPad. It has been extremely useful. I use it daily to access information including classes, books, research, etc. I have transitioned to using it to take notes for several classes." Further, some students reported using the iPad for specific engineering and math applications. On this note, a student described: "I've been using "computer networking" app lately. It gives me lots of information about Cisco, preparing me to get a Cisco certificate." Another student shared, "I've found fast math apps that make mathematical calculations quicker when doing lab reports." Beyond general academic and specific engineering and math functions, students report iPad use for communication and social reasons. Here, one student noted, "My iPad is so useful. I take it with me to school everyday and I use it everyday for both recreational and academic purposes. I use it everyday to communicate via email to my professors and peers. In fact I'm using my iPad to fill out this journal entry right now." Another student shared: "The most useful thing I use my iPad for is to check Moodle for anything new my professors post. It allows me to keep updated for anything new that my professors want us to have access to. Almost all of my professors use moodle and it helps me keep on top of my studies and keep in contact with my professors." Finally, a student detailed how he or she used the iPad for "emails, networking with others, note-taking, saving pictures of the board for later reference, and lately, for sharing those special moments such as graduation pictures in social networks."

**Plans to Use of Performance Data to Monitor Progress**

During the current performance period, data collection for both performance measures (11a and 11b) demonstrates substantive progress toward achieving this project objective. With the results from monthly student journaling and student interviews from Spring 2014/Summer 2014, we have presented actual performance data for both measures to the project team. Further, we have used results from data collection in both Moodle and interviews to monitor progress in meeting this objective. Specifically, we have used Moodle cohort participant journal results to assess further progress on the first performance measure (11a) and student interviews to evaluate progress on the second performance measure (11b). During the next performance period, our plans to use data collected through these procedures include discussions of the results in project meetings to address areas of improvement. Specifically, we plan to present data collected through cohort participant interviews. In addition, we plan to continue to ask faculty mentors to record their reflections about faculty mentoring. On this note, comments from faculty mentors during this performance period include: "They like weekly meetings because they get ideas as to how to deal with different instructors and how to approach their time management." Another faculty mentor reported: "Fall semester began and student focus changed from research to coursework. It took several weeks to work out the kinks and establish consistent work schedules." Faculty mentors also reported their encouragement of students in the program has led to writing letters of recommendations to various programs, scholarships, and conference participation—all indicative of mentoring between faculty and students. An additional faculty mentor stated, "The only issue I continue to see is that some of the students in the [redacted] cohort (which is pretty large) do not really get involved in the program activities and meetings. There probably needs to be a ‘stick’ to force a minimum level of participation."
**Cohort 3 (Fall 2013)**

***Baseline data per Instructions for Grant Performance Report; baseline data collected by cohort/cohort entry year. Upper row represents data for Cohort 2 (Fall 2012) and lower row represents data for Cohort 3 (Fall 2013).***

### Performance Measure 12.a.

**Increase by 30 percent the number of CSUN students who participate in a cohort model over the 2010-11 baseline number.**

*Note that the performance measures for this objective have been disaggregated from the original performance measure for reporting purposes only.*

**Note that in the ratio columns of the target and actual performance data ‘the numerator represents the numerical target (e.g., the number of students that are expected to attain proficiency) or actual performance data (e.g., the number of students that attained proficiency), and the denominator represents the universe (e.g., all students served)” (Instructions for Grant Performance Report, p. 7).***

**Baseline data per Instructions for Grant Performance Report; baseline data collected by cohort/cohort entry year. Upper row represents data for Cohort 2 (Fall 2012) and lower row represents data for Cohort 3 (Fall 2013).***

<table>
<thead>
<tr>
<th>Project</th>
<th>Target Raw Number</th>
<th>Ratio %</th>
<th>Actual Performance Data Raw Number</th>
<th>Ratio %</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1 / 9</td>
<td>11</td>
<td>9 / 9</td>
<td>100</td>
</tr>
</tbody>
</table>

### Performance Measure 12.b.

**Increase by 30 percent the number of CSUN students who participate in peer mentoring over the 2010-11 baseline number.**

*Note that the performance measures for this objective have been disaggregated from the original performance measure for reporting purposes only.*

**Note that in the ratio columns of the target and actual performance data ‘the numerator represents the numerical target (e.g., the number of students that are expected to attain proficiency) or actual performance data (e.g., the number of students that attained proficiency), and the denominator represents the universe (e.g., all students served)” (Instructions for Grant Performance Report, p. 7).***

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<th>Ratio %</th>
<th>Actual Performance Data Raw Number</th>
<th>Ratio %</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>22 / 29</td>
<td>76</td>
<td>10 / 29</td>
<td>34</td>
</tr>
</tbody>
</table>

### Performance Measure 12.c.

**Increase by 30 percent the number of CSUN students who participate in a cohort model over the 2010-11 baseline number.**

*Note that the performance measures for this objective have been disaggregated from the original performance measure for reporting purposes only.*

**Note that in the ratio columns of the target and actual performance data ‘the numerator represents the numerical target (e.g., the number of students that are expected to attain proficiency) or actual performance data (e.g., the number of students that attained proficiency), and the denominator represents the universe (e.g., all students served)” (Instructions for Grant Performance Report, p. 7).***

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<tr>
<th>Project</th>
<th>Target Raw Number</th>
<th>Ratio %</th>
<th>Actual Performance Data Raw Number</th>
<th>Ratio %</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>9 / 29</td>
<td>31</td>
<td>22 / 29</td>
<td>76</td>
</tr>
</tbody>
</table>

### Performance Measure 12.d.

**Improve the quality of peer-peer interaction.**

*Note that the performance measures for this objective have been disaggregated from the original performance measure for reporting purposes only.*

**Baseline data per Instructions for Grant Performance Report; baseline data collected by cohort/cohort entry year.**

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<thead>
<tr>
<th>Project</th>
<th>Target Raw Number</th>
<th>Ratio %</th>
<th>Actual Performance Data Raw Number</th>
<th>Ratio %</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>/</td>
<td>/</td>
<td>/</td>
<td>/</td>
</tr>
</tbody>
</table>

---

**Explanation of Progress (Include qualitative data and data collection information)**
Baseline data aggregated from results of Cohort 2 (Summer 2013) applicant interviews (see section above) indicate that the total number of students who participated in peer tutoring and peer mentoring in the Fall 2011 term is 17 and 9, respectively. In addition, results from document data collection of college records reveal that prior to Cohort 2 program entry, no students participated in a cohort model. These figures represent the baseline measures for all three measures, respectively, for Cohort 2. For Cohort 3, our findings from questionnaire data collection indicate that the total number of students who participated in peer tutoring and peer mentoring prior to program entry is 7 and 3, respectively. In this subsample, none of the participants were majoring in Civil Engineering and Construction Management or Manufacturing Systems Engineering.

After transcription, we proceeded with coding and thematic data analysis using ATLAS.ti, a computer-aided qualitative data analysis software program. Specifically, we used the themes that emerged from the ATLAS.ti analysis and from codes developed in hard copy transcribed data files. We then categorized the themes that emerged from codes that we clustered according to experiences and interactions of the cohort participants. These categories were used to align thematic findings to the performance measures associated with program objectives. Finally, we extracted direct quotes taken from the interviewees to illustrate themes and support overall findings.

Description of Preliminary Findings Related to the Objective

Baseline data for Cohorts 2 and 3: Performance Measures 12a, 12b, and 12c

During the performance period, actual performance data for the three measures reveal mixed results across cohorts. Not surprisingly, data demonstrate that one measure—cohort model participation (12c)—exceeded project targets for both cohorts. Further, data for performance measure 12b show that the number of students who participated in peer tutoring and peer mentoring prior to program entry is 7 and 3, respectively. In this subsample, none of the participants were majoring in Civil Engineering and Construction Management or Manufacturing Systems Engineering.
As we see in the table above, computer science (n=4) and electrical engineering (n=6) recorded the most students who participated in tutoring. Finally, while more students from Cohort 2 participated in tutoring (10 in Cohort 2 vs. 7 in Cohort 3), a greater percentage of Cohort 3 students (78%) engaged in peer tutoring during the performance period.

Preliminary Findings for Cohorts 2 and 3: Performance Measure 12c

When we look at performance measure 12c, we see that 22 of 29 students in Cohort 2 (or 76% of all Cohort 2 participants) and 3 of 9 students in Cohort 3 (or 33% of all Cohort 2 participants) engaged in peer mentoring during the performance period. In light of the baseline data (7/29 or 24% of all cohort participants), we can conclude that actual performance data on this measure demonstrates progress on the performance measure (project target: 9/29 students or 31% of all students) for Cohort 2 but shows a decline on performance measure in comparison to data from the 2012-13 project period (21/29 students). We may speculate that the decline in the number of students in Cohort 2 who participated in peer mentoring could be related to the fact that their academic standing moved from junior-level to senior-level with some of their peer mentors graduating at the end of the 2013-14 period. When we look at the data for Cohort 3, three students (33% or 3/9 students) reported participation in peer mentoring. For Cohort 3, these data indicate that the performance measure has not been achieved for the period (33% actual vs. 100% target).

Preliminary Findings for Performance Measure 12d

With respect to the fourth and final performance measure (12d), which evaluates the quality of peer-peer interaction, the interview data reveal a peer environment conducive to meaningful connections. In particular, the AIMS2 program promotes mutually beneficial relationships between students. This can be seen in the projects and study partnerships they create. For one student, his peers in AIMS2 helped make his academic experience more manageable: “No, it was hard. A lot of the concepts were new and I didn’t know anyone so I really didn’t have that much confidence. I didn’t want to talk to other people or get into study groups. So the first semester, a lot of it was studying on my own until I started connecting with people in AIMS. It eventually clicked; it eventually got easier.” Another student shared a similar story: “We do. We help each other whenever we have trouble with projects or homework or anything like that.” Interestingly, several of these students describe another as motivators. According to one student, “I get to see most of the same students here and I get to see that they are pretty focused and dedicated toward their major. It kind of inspires me to also be focused.” One cohort student supported this statement, saying, “I feel more capable. I see that they work very hard for their major and for their career and it makes me want to work harder for my major and my career. So if they could do it, I could do it.” Yet another student echoed this sentiment, citing a specific cohort member: “I’ve taken a lot of classes with him so we studied together a lot and he’s pretty motivated and really wants to succeed. It helps me also to succeed because he always wants study.”

Another notable facet of the peer-peer interaction within AIMS2 includes the effectiveness of the peer tutors and advisors. These individuals hold valuable institutional knowledge that aids cohort participants as they progress through their undergraduate education. As we heard in the interviews, advisors answer practical questions (“I would ask her questions like, ‘How did you apply? What did they ask you?’”), offer encouragement (“It’s just the thought of someone saying you can do it and keep doing it. Eventually it’s going to come to you. It motivates you to do better”), and even listen to mundane details about life outside of school. The tutors appear to be especially dedicated to the AIMS2 students. Illustrating this point, one participant remarked, “The tutors were there if you ever had trouble. You could call them up and set up an appointment to go over your homework or prep for a test or something. Actually, I have a few of them in my phone.”

Nevertheless, a minority of the students did vocalize some challenges integrating with their peers. For example, one student expressed, “I don’t think knowing the right people has helped. I don’t know anyone.” Additionally, AIMS2 participants recognize that some of their peers prefer to keep a distance. On this point, a participant said, “I think it’s just some of them don’t want to make those connections. Even in our group we have people who do want to work with others and people who don’t want to work with others. You can’t really force either one, you just kind of see who wants to and that’s about it.”

Clearly, though, the peer-peer environment within AIMS2 mostly fosters a positive academic experience. As one student put it: “At first, [I had] culture shock, but now I feel more at home because everybody is in the same place as me. Like we are all new to this kind of thing so it feels good.”

Description of Project Activities Related to the Objective

During the performance period, project faculty and staff worked to meet these four project measures of this objective. Specifically, we formed the second (Cohort 2) and third (Cohort 3) cohorts of student participants during the Fall 2012 and Fall 2013 terms, respectively. Further, we formed Cohort 4 in Spring 2014 and Cohort 5 in Fall 2014, which we will report over the next two years. To support the development of a quality peer environment and frequent peer-peer interaction, we developed both a peer-tutoring component and a peer-mentoring component to the project and hope to foster peer interaction through both peer- and faculty-mentors. In particular, we continued to advertise, recruit, hire, and train peer tutors from CSUN’s upper-division undergraduate and graduate students in the College of Engineering and Computer Science. In addition to peer tutoring, we conducted training of peer mentors for cohort participants. Finally, to facilitate a strong environment connected to both instructional and faculty research activities, faculty mentors facilitated weekly small group mentor sessions with cohort participants during the period. In addition to supporting student-faculty interaction and student development, these sessions are intended to facilitate peer-peer interaction. Finally, project faculty and staff planned project theses to encourage peer interactions, including on- and off-campus projects and events. These include an introduction to an appropriate professional society student chapter in the discipline and related activities – technical talks, presentations, student chapter activities etc. and visits with the cohort students from Glendale Community College and College of the Canyons. Finally, the iPad initiative likely has facilitated contact between peers—as Cohort 2 and Cohort 3 students reported use throughout the performance period. For instance, Cohort 2 students reported using the iPad 770 times during the month of November during the project period. For the same month, Cohort 3 students reported using the iPad 270 times. For a complete picture of iPad use during the project period, please see the table of distribution of iPad use by cohort and month below:

<table>
<thead>
<tr>
<th>iPad Use by Month and Cohort, AIMS2 Cohort Participants, Cohorts 2 and 3, October 2013-September 2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oct 13</td>
</tr>
<tr>
<td>Cohort 2 – 1870</td>
</tr>
<tr>
<td>Cohort 3 – 210</td>
</tr>
<tr>
<td>Total Oct 13 – 2080</td>
</tr>
<tr>
<td>Nov 13</td>
</tr>
<tr>
<td>Cohort 2 – 770</td>
</tr>
<tr>
<td>Cohort 3 – 270</td>
</tr>
<tr>
<td>Total Nov 13 - 1040</td>
</tr>
<tr>
<td>Dec 13</td>
</tr>
<tr>
<td>Cohort 2 – 1401</td>
</tr>
<tr>
<td>Cohort 3 – 115</td>
</tr>
<tr>
<td>Total Dec 13 – 1516</td>
</tr>
</tbody>
</table>
### Performance Data

<table>
<thead>
<tr>
<th>Month</th>
<th>Cohort 2</th>
<th>Cohort 3</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jan 14</td>
<td>1470</td>
<td>212</td>
<td>1682</td>
</tr>
<tr>
<td>Feb 14</td>
<td>765</td>
<td>1132</td>
<td>1897</td>
</tr>
<tr>
<td>Mar 14</td>
<td>1527</td>
<td>72</td>
<td>1599</td>
</tr>
<tr>
<td>Apr 14</td>
<td>1462</td>
<td>1221</td>
<td>2683</td>
</tr>
<tr>
<td>May 14</td>
<td>1251</td>
<td>1053</td>
<td>2304</td>
</tr>
<tr>
<td>Jun 14</td>
<td>395</td>
<td>5</td>
<td>400</td>
</tr>
<tr>
<td>Jul 14</td>
<td>366</td>
<td>122</td>
<td>488</td>
</tr>
<tr>
<td>Aug 14</td>
<td>1028</td>
<td>1047</td>
<td>2075</td>
</tr>
<tr>
<td>Sep 14</td>
<td>1060</td>
<td>95</td>
<td>1155</td>
</tr>
</tbody>
</table>

**Total:**
- Cohort 2: 13,365
- Cohort 3: 5,554
- Total: 18,919

As we see in the table above, Cohort 2 and Cohort 3 students used the iPad 13,365 and 5,554 times during the course of the performance period. Not surprisingly, the peak months for iPad use among students included August through October and February through May. On a per-student basis, Cohort 2 students logged an average of approximately 461 iPad uses and Cohort 3 students recorded an average of approximately 617 iPad uses during the period. When we explore how students used the iPad, we find that they reported academic and social functions that support their work as students. One student shared: "The iPad has become integral to my academic life. It houses all my notes, assignments, appointments, and even textbooks." Another student noted, "My iPad has drastically improved my academic experience. I can do all my homework on my iPad and read all my books. Also, I found a way to use, programs typically used on PC's, on my iPad." Finally, a student detailed: "I am very fortunate to have the iPad. It has been extremely useful. I use it daily to access information including classes, books, research, etc. I have transitioned to using it to take notes for several classes." Further, some students reported using the iPad for specific engineering and math applications. On this note, a student described: "I've been using "computer networking" app lately. It gives me lots of information about Cisco, preparing me to get a Cisco certificate." Another student shared, "I've found a few apps that have made note taking quicker and easier allowing me to consolidate notes and wirelessly share them with peers. I've also found fast math apps that make mathematical calculations quicker when doing lab reports." Beyond general academic and specific engineering and math functions, students report iPad use for communication and social reasons. Here, one student noted, "My iPad is so useful. I take it will me to school everyday and I use it everyday for both recreational and academic purposes. I use it everyday to communicate via email to my professors and peers. In fact I'm using my iPad to fill out this journal entry right now." Another student shared: "The most useful thing I use my iPad for is to check Moodle for anything new my professors post. It allows me to keep updated for anything new that my professors want us to have access to. Almost all of my professors use Moodle and it helps me keep on top of my studies and keep in contact with my professors." Finally, a student detailed how he or she used the iPad for "emails, networking with others, note-taking, saving pictures of the board for later reference, and lately, for sharing those special moments such as graduation pictures in social networks."

**Plans to Use of Performance Data to Monitor Progress**

With monthly student journaling during the performance period and student interviews during the first year, we have reported actual performance data for all four measures in the performance report for the first year of the project period. We have used results from data collection in both Moodle and interviews to monitor progress on all four performance measures related to this objective. In particular, we have used Moodle cohort participant journal results to assess further progress on the first performance three measures (12a-12c) and student interviews to evaluate progress on the final performance measure (12d). During the fourth project year, we plan to discuss the results of data collection in project meetings and address areas of improvement.
Section B: Budget Information

Budget Information

We received $1,096,856 in Year 1 (2011-12), $1,134,630 in Year 2 (2012-13), and $1,128,888 in Year 3 (2013-14) for a total of $3,360,374. To date we have expended 80% of the funds that were received for a total of $2,693,546. Our Year 3 expenditures totaled $954,603. Our projected carry forward amount entering Year 4 is $637,203. We have plans in place to fully utilize the carry forward funds by the expiration of the grant that is described below. In our APR for Year 1 we had described the plans to utilize the available carry forward balance from Year 1 to subsequent years to cover additional costs for faculty release time, clerical support, student research support, and project web site support.

Background: The total requested funding under the solicitation for five years was $5,562,768 including a total of $1,490,915 that was requested by the two supporting community colleges under this proposal. The total budget for Year 1 of the grant was $1,096,856 of which $299,893 was awarded to the two partner community colleges as sub-contractors. The budget for Year 2 of the grant in the amount of $1,134,630 was awarded in November 2012 following the acceptance of the Interim Report in April 2012. The budget for Year 3 of the grant in the amount of $1,128,888 was awarded in November 2013 following acceptance of our APR for Year 2.

The grant award was announced in October 2011 and as of September 30, 2012 (end of Year 1) we had expended $604,276 of the Year 1 budget. In our original proposal to the US Department of Education we envisioned a start date of July 1, 2011. Given the announcement of the grant award in October 2011 the team organized rapidly to recruit the first cohorts of students from all three institutions by January-February 2012 and put in place the various project activities envisioned under the grant. Thus the first expenditures on the grant began to occur in early spring 2012.

In summary we anticipate the following expenditures for the proposed carry forward funds of $637,203:

**Budget Reduction (Year 4):** $54,574

- Student Outreach Efforts to K-12 partner schools: $20,000
- Student Stipends for additional cohorts at CSUN, GCC, COC (two years): $216,000
- Faculty release time (additional): $89,000 (For Dr. Robert Ryan - described in detail in APR Year 1)
- Faculty release time (additional): $11,266 (For Dr. Nathan Durdella, Assessment, Year 5)
- Clerical Support: $60,000 (estimated at $30,000/year for the remaining 2 years)
- Student Research Assistant (additional): $120,000 (estimated at $60,000/year for the remaining 2 years)
- Student/Faculty Travel to Conferences: $30,000 (estimated at $15,000/year over the remaining 2 years)
- Organizing Conference to share best practices among S. California HSI Grantees: $10,000
- HSI-STEM Grantee Web Portal: $15,000

Total projected expenditures for utilizing carry forward funds: $625,840

The following paragraphs describe the projected expenditures in detail:

**Budget Reduction (Year 4):** $54,574

There were small reductions in the budget in Year 2 ($6,368) and Year 3 ($3,623), and a more significant reduction in the Year 4 budget that was just awarded ($54,574)

- Student Outreach Efforts to K-12 schools: $20,000
- The students in the AIMS cohorts have been actively serving as mentors at several K-12 schools in the community. The goal is to broaden participation in the STEM disciplines and attract underrepresented minorities to consider studying engineering and computer science. Since the students from the cohorts are themselves underrepresented minorities, their leadership role as mentors sends a very powerful message to the students in K-12.
- Student Stipends for additional cohorts at CSUN, GCC, COC (two years): $216,000
- The original proposal envisioned two separate cohorts from each of the partner institutions, i.e., 30 students/cohort at CSUN, and 15 students/cohort at GCC and COC respectively for a total of 120 students over the grant period. However, the success of the program has sparked tremendous interest from incoming transfer students in three partner institutions. The project team discussed this at length and decided to support an additional cohort of 60 students (30 from CSUN and 15 each from GCC and COC) to begin in Year 3. Students who are recruited directly into the new CSUN cohort will receive an annual stipend of $2,400 similar to previous community colleges as sub-contractors.
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- Faculty release time (additional): $89,000
- The faculty member from the College of Education was originally scheduled to receive 3-units of release time in years 1 and 5, and 6-units of release time in years 2 through 4. He was also scheduled to receive 2 months of summer salary during the grant period. Based on the assessment and project evaluation work during the period from January – April 2012 and the preparation of the Interim Performance report in April 2012, it became evident that he would need additional release time over the budgeted 6 units for Year 2 and Year 5 of the grant to complete the project tasks. The second cohort of students was recruited at all three institutions in fall 2012 and it is necessary to keep them distinct and separate for project analysis and performance comparison purposes. Since Year 2 funding was yet to be announced in April 2012, we covered the cost of the 3 units of additional release time for fall 2012 of approximately $10,300 by reducing his summer salary for Year 1 from 2 months to 1 month, leaving us $2,452 short. The shortage was covered from the carry-forward funds in Year 1 and we were able to restore his summer funding to 2 months for Year 2 and beyond. The anticipated cost of the additional 3 units of release time in Year 5 of the grant is $11,266.
- Clerical Support: $60,000
- We added clerical support to provide administrative assistance for the project. This was not originally budgeted but it became apparent that we would need this support to accomplish the goals of the project. Some of the duties that are being performed by staff in this category are: Filtering information on cohort students for PI’s, Contacting students to set up appointments with Chairs and PI’s, maintaining the project web site once it is established to ensure that it is up to date. Other duties include Scheduling meetings, E-mail correspondence, arranging teleconferences for the project, arrangement of parking, photocopying, compilation of materials, scheduling of rooms, and maintenance of records. Presently Miss. Cindy Barrett and Ms. Kathleen Pohl are providing clerical support. Since our original budget request missed including this category a separate budget category has been created to cover the anticipated expenses under this category. The approximate annual budget for administrative support including benefits is $30,000. Information on Project Staff may be found on the project web site at http://www.ecs.csun.edu/aims2/project_staff.html
- Student Research Assistants (additional): $60,000/year (2 Years - $120,000)
- With the addition of the new cohort we anticipate needing additional funds to support students from the cohort group to participate in paid research activities under the supervision of the faculty mentors during the academic year and the summer. Beginning with 15 students in the first summer of the grant, the program had over 25 students working on research projects during the summer of Years 2 and 3. These students worked on the average between 12-15 hours/week during the summer and

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were paid at the rate of $ 15/hour. We currently have over 150 students who are active in the cohort and several of them expect to participate in research activities.

Student/Faculty Travel to Conferences (additional) - $ 15,000/year (2 Years - $ 30,000)

Given the increase in the numbers of students participating in research projects we have several students participating in regional and national conferences to present their work. We anticipate that this will require an additional travel budget of approximately $ 15,000/year.

Organizing Conference to share best practices among S. California HSI Grantees - $ 10,000

We discussed the idea of organizing a regional conference among the HSI-STEM grantees from S. California to share best practices with our Program Officer (at that time) Peter Fuscas during the HEP Project Directors meeting in Washington DC in March 2013. This is envisioned to be a 1 day conference hosted with partial support from CSU Northridge.

HSCI-STEM Grantee Web Portal - $ 15,000

Based on discussions with our Program Officer, Ms. Sarah Beaton, a team of students from our Computer Science AIMS cohort under the supervision of Prof. Gloria Melara have been working to develop a web portal for use by all HSI-STEM grantees. The portal is functional right now and more work needs to be done over the next two years as it is deployed and finds widespread use amongst grantee institutions. We are budgeting approximately $ 15 K to cover the costs of ongoing development.

Section C: Additional Information

AIMS2 cohort students have been actively engaged in research projects with faculty mentors on a variety of topics in engineering and computer science. This experience has impacted their learning positively and helped build self-confidence. Several students from our cohort have received scholarships and support to attend national conferences sponsored by HACU, HEENAC, and AHSIE. Many students have presented their work at regional and national conferences further enhancing their learning experiences. For an updated list of student accomplishments please visit the project web site at http://www.ecs.csun.edu/aims2/student_accomplishments.html

Locally students from the cohorts continue to present their research posters and projects during socials organized to welcome new and incoming cohort students from CSUN, GCC and COC. This has been an empowering experience for both groups – inspiring the incoming students while strengthening the communication skills and confidence of the continuing students.

Based on the success of our students, we were approached by Los Angeles Mission College (another HSI-STEM award recipient from our region) about some of their students participating in our summer research program. Following interviews by the faculty mentors we were able to provide research opportunities for four LAMC students during summer 2013. These students were supported by LAMC but benefited from the interaction with our cohort on the summer research projects. We have continued this interaction over summer 2014.

The PI of the grant Dr. Ramesh was invited to be on a best practices panel at AHSIE 2014 where other faculty and staff from the grant also presented papers on our ongoing projects. Following that meeting and in conversations with our Program Director Ms. Sarah Beaton, a team of computer science students from the AIMS2 cohort have been working to develop an HSI-STEM grantee web portal to enable grantees across the country to collaborate and share their experiences. The web site has been built and is expected to be deployed shortly. This is a great example of the creativity and talent of the students we serve under this grant which has actually resulted in a product that is of value to the entire community.

Several students from the AIMS2 cohort also swept the top prizes in the Regional CCSC conference hosted and held at CSU Northridge in March 2014. For details see http://www.ecs.csun.edu/aims2/documents/CCSCCompetitionFirstPlaceWinners.pdf

The AIMS2 iPad initiative that was launched during Year 2 has been very successful in improving collaboration and communication between students in the cohorts. The devices are used by the students extensively in all their classes. The AIMS2 faculty members from CSUN, GCC and COC have been using the iPad’s for collaborative curriculum development. One of the key beneficial initiatives has been the rapid progress made in addressing the gaps in articulation between the community colleges and CSUN. Although the articulation process itself may take while to be completed based on the campus academic review protocols, the iPad enabled collaborative curriculum development efforts by the faculty from CSUN, GCC and COC ensures that students transferring into our programs have the background and appropriate pre-requisite content to be successful in upper division courses.

The AIMS2 program has drawn the attention of key industry partners and national initiatives aimed at supporting underrepresented minorities in our disciplines. In September the program was recognized by Excellence in Education and Congressman Cardenas for our work to date in supporting and enhancing the graduation of underrepresented minorities in engineering and computer science. See http://www.excelencia.org/media/press-releases/excelencia-announces-top-programs-increasing-latino-student-success-for-more-information. Congressman Cardenas’ remarks may be found online at https://www.youtube.com/watch?v=0F2z-17fSAs&list=PLi-dqTm4tmeeG9SabKxNd75JJU4s3UHBK&index=3

Partially as a result of the success of the AIMS2 program, the PI of the grant, Dr. Ramesh was invited by the White House Office of Science and Technology Policy to host one of the four 2014 White House STEM Workshops at CSU Northridge on October 7, 2014. This event attracted top policy leaders, educators, industry and non-profits to discuss broadening participation of minorities in the STEM disciplines. Videos from the event at archived and available online at https://www.youtube.com/user/cecscsun

CSUN President Dianne Harrison was subsequently invited to attend the White House College Opportunity Summit on December 4th, 2014 where she and fellow Presidents made specific commitments related to broadening participation and success in STEM initiatives. CSUN’s commitment that highlights the AIMS2 program may be found on Page 91 of the report online at http://www.whitehouse.gov/sites/default/files/docs/121514_college_opportunity_commitment_report.pdf

Here is an excerpt from the White House Report: “California State University Northridge (CSUN) will implement programs to reduce the 6-year STEM graduation rate gap by 50 percent between underrepresented minorities and non-underrepresented minorities (from 14 % to 7 %), and between Pell and non-Pell recipients (from 9 % to 4 %). CSUN commits to improving their AIMS program to increase by 10 percent the number of students completing program requirements by 2015. Additionally, CSUN will be working towards an overall 6 percent increase in 6-year STEM graduation rate for the incoming class of 2019 and an 8 percent increase in 4-year STEM graduation rate for the incoming class of 2021.”

The students in our cohorts really appreciate the difference that this program is making in their lives and several of them are engaged actively in outreach efforts to promote engineering in K-12. Since the inception of the recent HS/STEM grant we have made huge strides to address the academic needs of students in the cohort that includes proactive academic advisement and tracking, organized tutoring, peer and faculty mentoring, hands on research opportunities and project based learning, career advising and eventual transition to the workforce or advanced studies. Students in the cohort are supported with stipends to motivate and inspire them to succeed. Students in the cohort are excelling in their studies, making steady progress towards graduation, and working closely with faculty and peer mentors who provide academic and career guidance as well as opportunities to work on relevant “hands-on” projects.

This grant is already having a huge impact on the academic success and career choices of the talented youth in our region, and ultimately, we hope an enduring impact on the growth and health of California’s economy. As these talented students, who represent both minorities and females, matriculate to the university, they will, in turn, serve as role models for others in their communities. This collaborative partnership between CSUN, GCC and COC will be instrumental in creating a larger, more inclusive pool of STEM graduates.
2013 Annual Performance Report

Submitted:
U.S. Department of Education
Title III - Part F - HSI STEM and Articulation Programs

ED 524B Cover Sheet

1. PR/Award #: P031C110031
2. Grantee NCES ID#: 110608
3. Project Title: CSU, Northridge Engineering and Computer Science HSI-STEM Initiative
4. Grantee Name: The University Corporation -- Engineering & Computer Science
5. Grantee Address: 18111 Nordhoff Street Northridge, CA 91330
6. Project Director Name: S. Ramesh Title: Dean
   Ph #: 818-677-4501 Fax #: 818-677-2140
   Email Address: s.rameshi@csun.edu

Reporting Period Information

7. Reporting Period: From: 10/01/2012 To: 09/30/2013

Budget Expenditures *(To be completed by your Business Office.)*

8. Budget Expenditures:

<table>
<thead>
<tr>
<th></th>
<th>Federal Grant Funds</th>
<th>Non-Federal Funds (Match/Cost Share)</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Previous Budget Period</td>
<td>$1,134,862.47</td>
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</tr>
<tr>
<td>b. Current Budget Period</td>
<td>$113,624.54</td>
<td>$0.00</td>
</tr>
<tr>
<td>c. Entire Budget Period <em>(For Final Performance Reports only)</em></td>
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</tr>
</tbody>
</table>

Indirect Cost Information *(To be completed by your Business Office.)*

9. Indirect Costs
   a. Are you claiming indirect costs under this grant? No
   b. If yes, do you have an Indirect Cost Rate Agreement approved by the Federal Government?
   c. If yes, provide the following information:
      Period Covered by the Indirect Cost Rate Agreement: From: To:
      Approving Federal agency: ED Other (Please specify):
      Type of Rate:
      *(For Final Performance Reports only)*
   d. For Restricted Rate Programs (check one) -- Are you using a restricted indirect cost rate that:
      Is included in your approved Indirect Cost Rate Agreement?
      Complies with 34 CFR 76.564(c)(2)?

Human Subjects (Annual Institutional Review Board (IRB) Certification)

10. Is the annual certification of Institutional Review Board (IRB) approval attached? N/A

Performance Measures Status and Certification

11. Performance Measures Status
   a. Are complete data on performance measures for the current budget period included in the Project Status Chart? Yes
   b. If no, when will the data be available and submitted to the Department?

12. Authorized Representative Name: Scott Perez
    Date: 12/11/2013
    Phone: 818-677-2901
    E-mail: scott.perez@csun.edu
Executive Summary

The AIMS2 (Attract, Inspire, Mentor and Support Students) Program- CSU, Northridge Engineering and Computer Science HSI-STEM Initiative

This collaborative project is led by the College of Engineering and Computer Science at California State University, Northridge, in partnership with Glendale Community College (GCC) and the College of the Canyons (COC).

The Project Team held seven monthly meetings during the most recent project period from Oct 2012-Sep 2013. Every meeting includes standing agenda items that relate to the three primary project objectives and reports from team members on progress to date and issues of concern that need to be resolved. The meeting calendar, meeting agendas and presentations may be accessed on the project web site at http://www.ecs.csun.edu/aims2/presentations.html.

Summary of Project Assessment (Year 2):

The primary project objectives guided the evaluation as an embedded mixed methods case study design. The overall evaluation goal was to assess project performance measures with baseline and actual performance data at each campus (CSUN, Glendale CC and College of the Canyons). The data sources included AIMS2 students, faculty, staff and institutional data. Our data collection procedures employed journal guides, surveys, and interviews. Finally, our data analysis procedures utilized frequency analysis and thematic data analysis. The 12 primary objectives of our grant shape the 35 performance measures that were used. The 35 performance measures guide assessment tasks and included the following types of measures: project (4), non-cohort (3), cohort (28). The data is shaped by 28 quantitative, 7 qualitative measures. The quantitative measures cover transfer, completion, articulation, advisors, advising sessions, online courses, tutoring, mentoring, supplemental lab, student-faculty interaction, research participation, and cohort participation. The qualitative measures address the effects of interaction: student-faculty, peer-peer, faculty research. The cohort model of our program required a unique assessment approach. With the formation of the second cohort, we needed to assess cohort measures by cohort. Baseline data and actual performance data were collected by cohort, analyzed by cohort, and assessed by cohort targets. This approach applied the 28 cohort measures (21 quantitative and 7 qualitative measures) to each cohort for the performance period. Thus cohort data reported across 28 cohort measures resulted in 56 discrete (quantitative and qualitative) data points.

Big Picture Findings (Year 2):

Based on our assessment and evaluation of the 63 total measures, 36 measures (57%) met or exceeded project targets or demonstrated improvement in quality for both cohorts. The data for the quantitative measures (n=49) reveal that 26 (or 53%) measures met or exceed project targets. Results for the qualitative measures (n=10/14) point to improvement in quality of peer-peer interaction, student-faculty interaction, and research participation. All 4 project measures—transfer (1a), course articulation (2a/b), and completion (7a) met or exceeded project targets in the period. All 3 non-cohort measures—Counselor STEM PD (3a) at GCC/COC, academic advisors at CSUN (8a)—met or exceeded project targets. 19 of 42 (45%) cohort measures across campuses met or exceeded targets in the period. Transfer achievement exceeded target during the evaluation period. 44 new CSUN transfer students entered in 2012-13 from COC/GCC in a field housed in CECS. This represented a 122% increase over the project target (n=36) and a 210% increase over baseline figure (n=21) from 2010-11. Program completion exceeded target during the evaluation period. 40% (25/63) completed a degree program for the most recent period vs. 31% (21/68) project target. The following strengths were observed in cohort measures: GCC/COC counselor STEM professional development increased; COC academic advising in Cohort 2 went up; and the quality of GCC student-faculty interaction improved. Student-faculty interaction at all three campuses dramatically increased during the period. Academic workshops, supplemental labs, and faculty research at CSUN exceeded targets. CSUN academic advising and peer mentoring increased.

General Trends in Qualitative Measures

In general, results reveal positive effects of student-faculty interaction, peer-peer interaction, and faculty research participation on student experiences and learning. Overall, 10 of 14 (71%) qualitative measures demonstrate improvement in quality of student-faculty and peer environments on campus.

Students in the cohort who participated in faculty research projects had very positive learning experiences. Faculty research prepared students academically by presenting them with typical problems and solutions in the field and concepts in class. Research projects connected students to their future careers. Research competitions helped build career capital and practical skills that are marketable in career fields. Overall, students reported meaningful, fulfilling interactions with supportive CSUN faculty in advising and research. At CSUN, the peer environment facilitated friendships, study groups, and research groups among students. Cohort participants found a support system in their mentors that served to guide them through their transition to CSUN, and through programs. Peer tutors/mentors tend to enhance student academic/social experiences, and support learning. In general, advising, workshops, labs, and faculty research are project strengths. Overall, student-faculty interaction tends to have the strongest effects on student experiences. Finally, peer interaction in the form of peer mentoring and tutoring appears to have strong, positive effects on student transitions, and learning.

During the project period the faculty team from GCC, COC and CSUN has reviewed gaps in the existing articulation agreements between our institutions http://www.ecs.csun.edu/aims2/course_articulation.html and has been working diligently to develop curricula to address the gaps. The WITEC initiative (Wireless Technology Initiative) under this grant is a unique collaborative solution that capitalizes on the past successes of the partners to develop relevant curricula to enable seamless transfers for students in the cohort. All cohort students and faculty were provided with iPad’s for use in their classes and research projects. Training sessions were offered to faculty members who received the iPad’s to develop curricula and e-texts for use in their classes. Students in the cohort are able to use iPad’s in their classes and laboratories for collaboration.

The success of cohort students in numerous national conferences during the past year is a testament to the quality and impact of the program. Stephanie Medina and Noe Hernandez were two of the 20 recipients selected nationally to attend the 27th annual HACU Conference in Chicago. Leslie Puma was a member of the third place winning College Bowl team sponsored by Northrop Grumman at the HEENAC- Great Minds in STEM conference in October 2013. Melissa Flores was one of the two students selected from a nationwide pool of 80 applicants for a Tier 1 scholarship that included conference travel, registration and an iPad that enabled her to participate in AHSIE 2013. Melissa was elected as the President of the ASME Student Chapter this year and is currently working as an intern at Northrop Grumman. Samuel Gaxiola was elected as the President of the IEEE-HKN (Electrical Engineering Honor Society) Lambda Beta Chapter at CSUN. Other cohort students have made presentations on their research at regional and national meetings including ASEM, SAMPE, and ASEE. Details on student accomplishments may be found online on the project site at http://www.ecs.csun.edu/aims2/student_accomplishments.html

CSUN Peer Mentors http://www.ecs.csun.edu/aims2/peer_mentors.html and Tutors http://www.ecs.csun.edu/aims2/peer_tutors.html were selected based on the needs of the cohort. Faculty mentors http://www.ecs.csun.edu/aims2/faculty_mentors.html meet regularly with their students in the cohort to discuss their academic progress. Participation in college wide events such as Tech Fest, the annual Senior Design Project Showcase etc., visits between the cohort students from the partner colleges, as well as outreach visits by cohort students to other colleges and high schools to raise awareness of the grant and encourage future students, are some of the cohort activities.

In accordance with the project’s goals an external advisory committee was formed in 2012 with experts and industry representatives to review progress in meeting the objectives and offers suggestions for improvement. For the current roster of the external advisory committee please see http://www.ecs.csun.edu/aims2/advisory_committee.html. Section A describes in detail the project’s goals and the progress we have made to date in achieving the expected outcomes and performance measures. We have already met or surpassed several of the objectives and anticipate being able to provide additional data as appropriate for relevant outcomes with our next annual performance report for Year 3 of the grant.
Section A: Performance Objectives

Project Objective: 1. Increase the transfer of Hispanic and low-income students from College of the Canyons and Glendale Community College to CSUN in STEM fields

Check if this is a status update for the previous budget period.

<table>
<thead>
<tr>
<th>Performance Measure</th>
<th>Measure Type</th>
<th>Quantitative Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.a. After two years, increase by 15 the number of Hispanic and low-income students who transfer from College of the Canyons and Glendale Community College to CSUN in STEM fields over the 2010-11 baseline number. *CSUN institutional data (not project cohort data)-Performance Measure **Baseline data (per Instructions for Grant Performance Report) - Actual Performance Data</td>
<td></td>
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</tr>
</tbody>
</table>

**Explanation of Progress (include qualitative data and data collection information)**

Evaluation Data Sources and Methods for the Objective

During the performance period, we collected actual performance data on the single performance measure for this objective. During the performance period of the first project year (2012-2013), we collected baseline data for the performance measure. Quantitative data sources for both baseline and actual performance data for this measure are from CSUN institutional data (from CSUN's Office of Institutional Research). During the performance periods for the last two project years, we worked with CSUN's Office of Institutional Research to prepare the 2010-11 baseline data on student transfer figures for both College of the Canyons (COC) and Glendale Community College (GCC) and to produce the 2012-13 figures of actual performance data, which mark the end of the academic year after formation of Cohort 1 and 2 participants and two academic years from the project baseline data year.

Description of Preliminary Findings Related to the Objective

The baseline data for this measure (1a) is from CSUN's Office of Institutional Research and includes institutional data (i.e., not project cohort data). Accordingly, the base-line data do not correspond to the number of project cohort participants but rather to all students who met the criteria for inclusion in the transfer cohort (see next sentence). The 2010-11 baseline data for all Hispanic and/or low-income (i.e., Pell grant recipients) students who transferred from College of the Canyons and Glendale Community College to CSUN planning to major in a field in the College of Engineering and Computer Science follows: 14 students from College of the Canyons and seven from Glendale Community College, for a total of 21 students from both colleges. Consequently, the target number of Hispanic and low-income students who will have transferred from College of the Canyons and Glendale Community College by Spring 2013 (two academic years from baseline) is 36, which represents an increase of 15 over the 2010-11 baseline number. When we interpret actual performance data against the project target of 36, we find that 44 students transferred from College of the Canyons and Glendale Community College in 2012-13. That is, 44 new CSUN transfer students entered in 2012-13 from College of the Canyons and Glendale Community College planning to major in a field housed in the College of Engineering and Computer Science. This increase in the number of new transfer students in 2012-13 (n=44) represents approximately a 122% increase over the project target (n=36) and a 210% increase over the baseline figure (n=21) from 2010-11. While the number of new transfer students in 2012-13 (n=44) surpassed the baseline and target measures, we note that the number represents a decline from the performance measure data from the first project year (n=65). One reason that may partially explain a decline in this figure relates to the institutional (CSUN) decision to close spring admissions in favor of a fall admissions cycle. In spite of the decline in new transfers from College of the Canyons and Glendale Community College in a field housed in the College of Engineering and Computer Science, this project objective has been achieved during the current period given the performance data on this measure.

Description of Project Activities Related to the Objective

During the performance period, project faculty and staff worked to support the achievement of this objective through their efforts with cohort participants at College of the Canyons and Glendale Community College. Over the second project year, faculty mentors and project staff completed work to form two new student cohorts (Cohort 2 and Cohort 3, which will be reported next performance period) at both College of the Canyons and Glendale Community College. Anticipated project activities at both community colleges include tutoring, mentoring, academic excellence workshops (College of the Canyons), textbook award program, joint leadership conference (College of the Canyons), joint outreach efforts (College of the Canyons), and engineering boot camps (College of the Canyons). In addition, project faculty at both CSUN and College of the Canyons/Glendale Community College have worked collaboratively to support early contact and connections between community college students and CSUN, including community college cohort attendance at CSUN’s Senior Project Design Showcase, CSUN’s Tech Fest, two AIMS2 socials with CSUN, COC, and GCC students, and events hosted by and on Glendale Community College/College of the Canyon’s campuses for project faculty and students across institutions to attend. Finally, during the performance period, select CSUN, Glendale Community College, and College of the Canyons cohort students participated in CSUN faculty mentor research projects during the Summer 2013 session (see “Description of Project Activities Related to the Objective” for Objective 10 below).

Plans to Use of Performance Data to Monitor Progress

With actual performance data for the last two project years for the performance measure of this objective, we plan to publish the figures from this year’s report on our project’s website (http://www.ecs.csun.edu/aims2/) and discuss progress related to COC/GCC transfer students at our project meetings. While we have surpassed the project target for this project objective, we recognize a decline in new transfer students from COC/GCC over the last two years. With the closure of spring admissions and an overall decline in transfers to CSUN, we developed relationships through outreach to colleges like Los Angeles Mission College, from which we had participants in their Title V/HSI-STEM grant join a summer research with CSUN AIMS2 faculty and transfer to CSUN. As we move forward into the next performance period, we plan to continue these outreach efforts and anticipate that the Office of Institutional Research will produce actual student transfer data (as the receiving institution) from the 2013-14 academic year in November-December 2013. Accordingly, we plan to continue data collection to measure this objective with annual secondary data extracts from the Office of Institutional Research for each academic year to inform our discussions of progress.
Project Objective: 2. Increase the number of courses that articulate from College of the Canyons and Glendale Community College to CSUN and articulation agreements between College of the Canyons and Glendale Community College and CSUN

Check if this is a status update for the previous budget period.

<table>
<thead>
<tr>
<th>Performance Measure</th>
<th>Measure Type</th>
<th>Quantitative Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.a. Increase by 15 the number of STEM courses that articulate over the 2010-11 baseline number *Note that the performance measures for this objective have been disaggregated from the original performance measure for reporting purposes only. *<em>Baseline data (per Instructions for Grant Performance Report)</em></td>
<td>Project</td>
<td>Target</td>
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<td>Raw Number</td>
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<td></td>
<td></td>
<td>92</td>
</tr>
<tr>
<td>2.b. Increase by 15 the number of articulation agreements over the 2010-11 baseline number *Note that the performance measures for this objective have been disaggregated from the original performance measure for reporting purposes only. *<em>Baseline data (per Instructions for Grant Performance Report)</em></td>
<td>Project</td>
<td>Target</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Raw Number</td>
</tr>
<tr>
<td></td>
<td></td>
<td>92</td>
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</tbody>
</table>

Explanation of Progress (include qualitative data and data collection information)

Evaluation Data Sources and Methods for the Objective

The two performance measures (2a and 2b) for this objective assess the same outcome: articulated courses. In the case of this objective, an articulated course is equivalent to an articulation agreement within the context of this project. Accordingly, performance measures 2a and 2b use the same baseline data and actual performance data. Document data collection (e.g., course articulation agreements) and review constitute the data collection procedures for these two performance measures of this objective. We initiated data collection for these two performance measures in February 2012 (in the previous performance period) and have continued data collection through the current performance period as project faculty coordinate the articulation and curriculum approval process at College of the Canyons, Glendale Community College, and CSUN. Document data analysis for these two performance measures includes reviews to confirm the status of articulated courses and articulation agreements. In addition, Glendale Community College uses an online student-transfer information system to track progress on these two performance measures (see below under “Project Activities at Glendale Community College”). Finally, we include a discussion of course articulation as a standing agenda item at monthly AIMS2 project team meetings to confirm document data records at each site.

Description of Preliminary Findings Related to the Objective

Actual performance data for these two performance measures of this objective indicate that 77 courses currently articulate between College of the Canyons/Glendale Community College and CSUN. Specifically, data collected during the period through documents reveal that a total of 41 courses currently articulate between College of the Canyons and CSUN and a total of 36 courses currently articulate between Glendale Community College and CSUN. Of the 77 courses that currently articulate, remedial math courses have been excluded from the count and six courses are missing labs (four at College of the Canyons and two at Glendale Community College). Accordingly, the total of 77 courses that currently articulate between both community colleges and CSUN constitutes the baseline performance measure. Meanwhile, a total of 12 courses currently do not articulate between College of the Canyons and CSUN and 17 courses currently do not articulate between Glendale Community College and CSUN, for a total of 29 courses in the fields of engineering and computer science. Given the project target of 15 new articulated courses, the total number of courses that need to articulate between CSUN and the two community colleges is 92, which represents the project target number.

During the previous and current period of performance evaluation, 8 courses have been articulated between CSUN and COC and 9 courses have been articulated between CSUN and GCC, for a total of 15 articulated courses between COC and GCC. Given the project increase of 15 and project target of 92 articulated courses/articulation agreements, the actual performance data for this period demonstrate achievement of this objective. Indeed, with the 5 articulated courses from the first project year and 10 articulated courses from the current (second) project year, the total number of articulated courses at the end of the first two performance periods is 92—which matches the project target (n=92). More specific details about the courses articulated during the period can be found in the sections immediately below.

Preliminary Findings of College of the Canyons

During the first two performance periods, the following courses have been articulated between CSUN and COC:

- CE 240/L at CSUN is articulated with COC ENGR 152 (Articulated Pre-Project/Updated Project Year 2)
- CMT 110/L at CSUN articulates with COC CONST 103 (Project Year 2)
- CMT 208/L at CSUN articulates with COC SURV 101 (Project Year 1)
- CMT 210/L at CSUN articulates with COC CONST 106 (Project Year 2)
- ME 186 and 186/L at CSUN articulates with COC ENGR 114 (Project Year 2)
- MSE 227 and 227/L at CSUN articulates with COC ENGR 151L (Project Year 2)

Preliminary Findings of Glendale Community College

During the first two performance periods, the following courses have been articulated between CSUN and GCC:

- CE 240/L at CSUN articulates with GCC ENGR 152 (Project Year 2)
- CIT 101/L at CSUN articulates with GCC CSIS 101 (Project Year 1)
- CIT 160/L at CSUN articulates with GCC CSIS 260 (Project Year 1)
- COMP 108 at CSUN articulates with GCC CSIS 112 (Project Year 1)
- COMP 122/L at CSUN articulates with GCC CSIS 165 (Project Year 1)
- COMP 256/L at CSUN articulates with GCC CSIS 125 (Project Year 2/Pending Final Approval)
- ECE 240/L at CSUN articulates with GCC ENGR 240 (Project Year 2/Pending Final Approval)
- ME 186/L at CSUN articulates with GCC ENGR 111 (Project Year 2)
- MSE 227 and 227/L at CSUN articulates with GCC ENGR 146 (Project Year 2)

Description of Project Activities Related to the Objective

During the performance period, project faculty made meaningful progress toward meeting these two performance measures. In fact, project faculty from CSUN, College of the Canyons, and Glendale Community College met to discuss course articulation. Since December 2011, project faculty have met at monthly project team meetings. In fact, we include a discussion of course articulation as a standing agenda item at monthly AIMS2 project team meetings. At two monthly project team meetings (February 9, 2012, and March 15, 2012), project faculty established a framework to develop course articulation agreements and worked on articulating the individual courses listed above and additional courses below through the formation of work groups based on their disciplinary backgrounds and department affiliations (e.g., computer science, civil engineering and construction management, manufacturing systems engineering, etc.) and assigned themselves specific courses to review, revise, and articulate. During the monthly project team meetings of the first two performance periods (February 2012 through September 2013), faculty from CSUN, COC, and GCC reported on their collaboration through the articulation process. The meetings provided an opportunity for the faculty from each campus to discuss their most recent collaborations and to report updated articulation findings. Outside of project team meetings, faculty exchanged course syllabi, course outlines, and consulted with curriculum committees on their respective campuses (COC/GCC). The articulation process included course equivalencies by examining respective
course syllabi and course outlines for course descriptions, objectives/outcomes, and content for each community college course with CSUN’s course.

Descriptive of Project Activities at College of the Canyons

Since the start of the grant, College of the Canyons has increased the number of articulated courses with CSUN from 4 to 11 with one still pending (ENGR-114/114L). In the current performance period, College of the Canyons engineering faculty have been working with CSUN faculty members to articulate one course and two labs. These include articulation between CSUN’s ME 186 and COC’s Engineering 114/114L and CSUN’s MSE 227L and COC’s Engineering 151L (completed—see above). In addition, COC and CSUN faculty updated CE 240 and CE 240/L (CSUN) and ENGR 152 (COC) to comply with articulation requirements of SB 1440. That is, CE 240/240 L had been articulated prior to the start of the project, but recent changes that were made to comply with the system wide mandate (SB 1440) for transfer model curricula. Faculty in CSUN’s Computer Science department are also working with faculty in COC’s Computer Information Technology department to determine which courses could be developed at COC that would ease student transfer to the CSUN’s computer science department. Faculty in CSUN’s Construction Management department are also working with faculty in COC’s Construction Management and Land Surveying departments to determine which courses could be developed at COC that would ease student transfer to the CSUN’s construction management department. Articulations include Construction-103 and CSUN’s CMT110/L, COC’s Construction-106 and CSUN’s CMT210/L, and COC’s Surveying-101 and CSUN’s CMT208/L (see above). These faculty-to-faculty conversations about articulation issues are ongoing and expected to yield multiple clear course pathways so that community college students can successfully complete key courses prior to transfer. We measure the progress made during these discussions on the articulation of courses between COC and CSUN by monitoring the development of Memoranda of Understanding (MOUs) between individual departments at the two campuses by tracking the number of MOUs developed. We also track the number of courses in the curriculum process at COC and the number of fully articulated courses through a record of curriculum committee meetings.

Descriptive of Project Activities at Glendale Community College

With some courses that articulated between CSUN and GCC, Professor Rubke and Professor Voden from GCC collaborated closely with several of the courses; however, the curriculum committees at their college also provided input into the articulation process. Professor Melara from CSUN updated and articulated the computer science courses through her requests of each course syllabi.

Plans to Use of Performance Data to Monitor Progress

As we look ahead to the next performance period, we find that there are several courses currently being reviewed for action to articulate between CSUN and COC/GCC, including course syllabi review, transferability approval, and laboratory inclusion. During the next performance period, plans to measure progress on these two measures include document data collection (e.g., course articulation agreements) and review. Data collection will occur as project faculty complete the articulation and curriculum approval process at College of the Canyons, Glendale Community College, and CSUN. As with the courses articulated during the current performance period, we plan to continue the course articulation work that supports our collaborative approach in the curriculum revision process and submission of revised courses to curriculum committees at our respective campuses once courses have been articulated. While this process may take time to complete, it is important to note that if project faculty agree on course content, they can begin to make substitutions immediately while awaiting the conclusion of the curriculum approval processes at their respective institutions.
Project Objective: 3. Enhance the academic advising/counseling capacity of College of the Canyons and Glendale Community College in STEM fields

Check if this is a status update for the previous budget period.

### Performance Measure

#### 3.a. Performance Measure* for College of the Canyons** Increase by two the number of counselors at College of the Canyons and Glendale Community College who participate in STEM professional development workshops over the 2010-11 baseline number  
*Note that the performance measures for this objective have been disaggregated from the original performance measure for reporting purposes only.  
**Note that the performance measure is reported in separate tables for College of the Canyons and Glendale Community College, given differences in target/actual performance data for this reporting period.  
***Baseline data (per Instructions for Grant Performance Report)

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#### 3.a. Performance Measure* for Glendale Community College** Increase by two the number of counselors at College of the Canyons and Glendale Community College who participate in STEM professional development workshops over the 2010-11 baseline number  
*Note that the performance measures for this objective have been disaggregated from the original performance measure for reporting purposes only.  
**Note that the performance measure is reported in separate tables for College of the Canyons and Glendale Community College, given differences in target/actual performance data for this reporting period.  
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#### 3.b. Performance Measure* for College of the Canyons** Cohort 1 (Spring 2012) Increase by four the number of advising/counseling sessions with students in STEM fields over the 2010-11 baseline number**Note that the performance measures for this objective have been disaggregated from the original performance measure for reporting purposes only.  
**Note that this performance measure is reported in separate tables for College of the Canyons and Glendale Community College, given differences in target/actual performance data for this reporting period.  
***Baseline data (per Instructions for Grant Performance Report)  
****Upper row represents data for Cohort 1 (Spring 2012) and lower row represents data for Cohort 2 (Fall 2012)

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#### 3.b. Performance Measure* for College of the Canyons** Cohort 2 (Fall 2012) Increase by four the number of advising/counseling sessions with students in STEM fields over the 2010-11 baseline number**Note that the performance measures for this objective have been disaggregated from the original performance measure for reporting purposes only.  
**Note that this performance measure is reported in separate tables for College of the Canyons and Glendale Community College, given differences in target/actual performance data for this reporting period.  
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#### 3.b. Performance Measure* for Glendale Community College** Cohort 1 (Spring 2012) Increase by four the number of advising/counseling sessions with students in STEM fields over the 2010-11 baseline number**Note that the performance measures for this objective have been disaggregated from the original performance measure for reporting purposes only.  
**Note that this performance measure is reported in separate tables for College of the Canyons and Glendale Community College, given differences in target/actual performance data for this reporting period.  
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#### 3.b. Performance Measure* for Glendale Community College** Cohort 2 (Fall 2012) Increase by four the number of advising/counseling sessions with students in STEM fields over the 2010-11 baseline number**Note that the performance measures for this objective have been disaggregated from the original performance measure for reporting purposes only.  
**Note that this performance measure is reported in separate tables for College of the Canyons and Glendale Community College, given differences in target/actual performance data for this reporting period.  
***Baseline data (per Instructions for Grant Performance Report)  
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### Explanation of Progress (Include qualitative data and data collection information)

#### Evaluation Data Sources and Methods for the Objective

College of the Canyons and Glendale Community College report their respective data sources and methods below.

#### Evaluation Data Sources and Methods at College of the Canyons

College of the Canyons used a combination of document data sources and collection methods—including counseling appointments, student educational plans, and attend-ance at the transfer planning events—to establish baseline data for these performance measures.

#### Evaluation Data Sources and Methods at Glendale Community College

Glendale Community College STEM and general counselors were asked to track and report any STEM professional development workshops they attended to the AIMS2 Counselor/Coordinator. The AIMS2 Counselor/Coordinator also tracked counseling appointments, including meetings to discuss student educational plans, to document data sources and collection methods.

#### Description of Preliminary Findings Related to the Objective

Preliminary findings for each college are reported below.

#### Preliminary Findings of College of the Canyons

For performance measure 3a, College of the Canyons reports that two (2) counselors have participated in staff development activities. Also during this performance period, we supported one (1) of our counseling faculty members, along with students, on a trip to participate in the Society for Hispanic Professional Engineers (SHPE) conference so that they will have the tools that they need to successfully prepare our AIMS2 scholars for transfer.

With respect to performance measure 3b, we see that Cohort 1 (n=77) had a total of 42 counseling contacts and Cohort 2 (n=155) logged a total of approximately 94 contacts for a total of 136 contacts with AIMS2 counselor(s) during the performance period. We derived the 42 counseling contacts (Cohort 1) and 94 counseling contacts (Cohort 2) by dividing the total number of contacts (n=136) by the total number of AIMS2 cohort participants and multiplying by the number of participants in each cohort. We will monitor the amount of progress toward the above objectives by tracking the number of counseling appointments, the number of SEPs created or modified and attendance at the transfer planning events.

#### Preliminary Findings of Glendale Community College

With respect to performance measure 3a i.e. Glendale Community College counselors who participate in STEM professional development, two counselors reported attending STEM workshops and/or conferences. The AIMS2 Counselor/Coordinator attended the following: The Alliance of Hispanic Serving Institution Educators Annual Conference (AHSIE; March 2013), California Intersegmental Articulation Council Annual Conference (CIAC; April 2013), Great Minds in STEM conference (Oct 2013), and Society for Hispanic Professional Engineers Annual Conference (SHPE; Oct 2013). One AIMS2 Mentor Coordinator & Career Counselor attended the Great Minds in STEM conference (Oct 2013), and Society for Hispanic Professional Engineers Annual Conference (SHPE; Oct 2013). The actual performance data for this...
objective is 2 counselors. Given that the baseline data for this project objective is 0 and the project target is to increase by two the number of counselors who participate in STEM-related professional development workshops, this performance measure has been met during the current project performance period.

With respect to performance measure 3b (i.e., students' participation in advising/counseling sessions), data were collected from an online student survey and from the AIMS2 Counselor/Coordinator tracking the number of advising/counseling sessions provided to students. Glendale Community College students participating in the pro-program (Cohort 1-Spring 2012; Cohort 2-Fall 2012) were invited to participate in an online survey in August 2013 to collect data about the types of services and programs they participated in during the 2012-2013 academic year, including the summer. The survey included items that asked if respondents attended any academic counseling sessions with a STEM counselor. Due to attrition from the program (n=1) and graduation/transfer (n=7), the number of students in Cohort 1 at GCC as of August 2013 is five. Of the students in Cohort 1, all five students who responded indicated attending academic counseling sessions with a STEM counselor. One student indicated attending one academic counseling session, and four students indicated attending 2-3 academic counseling sessions. Due to attrition from the program (n=2), the number of students in Cohort 2 as of August 2013 is nine. Of the students in Cohort 2 at GCC, ten students who responded indicated attending academic counseling sessions with a STEM counselor. One student reported attending one academic counseling session, seven students indicated attending 2-3 academic counseling sessions, one student indicated attending 4-5 academic counseling sessions, and one student indicated that attending 6 or more academic counseling sessions. The number of academic counseling sessions was verified by the AIMS2 Counselor/Coordinator, who recorded a total of 10 counseling sessions with Cohort 1 students, and 23 counseling sessions with Cohort 2 students. The figures in the table above were calculated by adding the number of reported sessions by the AIMS2 Counselor/Coordinator (Cohort 1= 10, Cohort 2= 23) to the baseline/target number (Cohort 1= 1, Cohort 2= 7). Students are required to check in before their advising/counseling appointment by way of writing their names on the AIMS2 Counseling clipboard. An assistant to the counselor also verifies counseling visits by checking if each participant has completed their Student Educational Plans (SEPs).

Description of Project Activities Related to the Objective
Specific project activities at College of the Canyons and Glendale Community College, respectively, are detailed below.

Project Activities at College of the Canyons
During this performance period, our counseling plan includes having our AIMS2 scholars meet with counseling faculty twice a semester for every semester they are involved in the program at COC. These appointments will result in the development of a Student Educational Plan (SEP) for each scholar. Our counselors will also provide informational workshops on transfer planning during the fall semesters to support the scholars transfer process.

Project Activities at Glendale Community College
Counselors are notified of professional development opportunities through: their monthly AIMS2 project meetings at CSUN, STEMTech listservs, and networking with other STEM colleagues. At minimum, students participating in the program are required to meet one-on-one with the AIMS2 Counselor/Coordinator once per semester. During these sessions, students will develop or update their Student Educational Plans (SEP). SEPs are a list of required General Education and Major requirements prepared only by academic counselors. In addition, advising of prerequisite courses are provided to properly guide students. During participant focus groups, students in both cohorts acknowledged several benefits in meeting with a counselor, including quickly knowing which courses they are required to take.

Plans to Use of Performance Data to Monitor Progress
At College of the Canyons, progress toward the above performance measures of this objective will be tracked the number of counseling appointments, the number of SEPs created or modified, and attendance at the transfer planning events. Meanwhile, At Glendale Community College, progress toward the above performance measures of this objective will be tracked by the number of counseling sessions students have, results from an online survey, and recording counselor(s) attendance at professional development workshops.
Check if this is a status update for the previous budget period.

### Performance Measure

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| **4.a Performance Measure** for College of the Canyons** Cohort 1 (Spring 2012) Increase by 75 percent the College of the Canyons and Glendale Community College students who participate in tutoring sessions in STEM classes and who participate in STEM academic workshops over the 2010-11 baseline rate Note that the performance measures for this objective have been disaggregated from the original performance measure for reporting purposes only. **Note that this performance measure is reported in separate tables for College of the Canyons and Glendale Community College, given differences in target/actual performance data for this reporting period. ***Note that in the ratio columns of the target and actual performance data "the numerator represents the numerical target (e.g., the number of students that are expected to attain proficiency) or actual performance data (e.g., the number of students that attained proficiency), and the denominator represents the universe (e.g., all students served)" (Instructions for Grant Performance Report, p. 7). ****Baseline data (per Instructions for Grant Performance Report) *****Upper row represents data for Cohort 1 (Spring 2012) and lower row represents data for Cohort 2 (Fall 2012)*****

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| **4.a Performance Measure** for College of the Canyons** Cohort 2 (Fall 2012) Increase by 75 percent the College of the Canyons and Glendale Community College students who participate in tutoring sessions in STEM classes and who participate in STEM academic workshops over the 2010-11 baseline rate Note that the performance measures for this objective have been disaggregated from the original performance measure for reporting purposes only. **Note that this performance measure is reported in separate tables for College of the Canyons and Glendale Community College, given differences in target/actual performance data for this reporting period. ***Note that in the ratio columns of the target and actual performance data "the numerator represents the numerical target (e.g., the number of students that are expected to attain proficiency) or actual performance data (e.g., the number of students that attained proficiency), and the denominator represents the universe (e.g., all students served)" (Instructions for Grant Performance Report, p. 7). ****Baseline data (per Instructions for Grant Performance Report) *****Upper row represents data for Cohort 1 (Spring 2012) and lower row represents data for Cohort 2 (Fall 2012)*****

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| **4.a Performance Measure** for Glendale Community College** Cohort 1 (Spring 2012) Increase by 75 percent the College of the Canyons and Glendale Community College students who participate in tutoring sessions in STEM classes and who participate in STEM academic workshops over the 2010-11 baseline rate Note that the performance measures for this objective have been disaggregated from the original performance measure for reporting purposes only. **Note that this performance measure is reported in separate tables for College of the Canyons and Glendale Community College, given differences in target/actual performance data for this reporting period. ***Note that in the ratio columns of the target and actual performance data "the numerator represents the numerical target (e.g., the number of students that are expected to attain proficiency) or actual performance data (e.g., the number of students that attained proficiency), and the denominator represents the universe (e.g., all students served)" (Instructions for Grant Performance Report, p. 7). ****Baseline data (per Instructions for Grant Performance Report) *****Upper row represents data for Cohort 1 (Spring 2012) and lower row represents data for Cohort 2 (Fall 2012)*****

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| **4.a Performance Measure** for Glendale Community College** Cohort 2 (Fall 2012) Increase by 75 percent the College of the Canyons and Glendale Community College students who participate in tutoring sessions in STEM classes and who participate in STEM academic workshops over the 2010-11 baseline rate*** Note that the performance measures for this objective have been disaggregated from the original performance measure for reporting purposes only. **Note that this performance measure is reported in separate tables for College of the Canyons and Glendale Community College, given differences in target/actual performance data for this reporting period. ***Note that in the ratio columns of the target and actual performance data "the numerator represents the numerical target (e.g., the number of students that are expected to attain proficiency) or actual performance data (e.g., the number of students that attained proficiency), and the denominator represents the universe (e.g., all students served)" (Instructions for Grant Performance Report, p. 7). ****Baseline data (per Instructions for Grant Performance Report) *****Upper row represents data for Cohort 1 (Spring 2012) and lower row represents data for Cohort 2 (Fall 2012)*****

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<td>47</td>
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| **4.b Performance Measure** College of the Canyons** Cohort 1 (Spring 2012) Increase by 75 percent the College of the Canyons and Glendale Community College students who enroll in online courses with CSUN faculty over the 2010-11 baseline rate*** Note that the performance measures for this objective have been disaggregated from the original performance measure for reporting purposes only. **Note that this performance measure is reported in separate tables for College of the Canyons and Glendale Community College, given differences in target/actual performance data for this reporting period. ***Note that in the ratio columns of the target and actual performance data "the numerator represents the numerical target (e.g., the number of students that are expected to attain proficiency) or actual performance data (e.g., the number of students that attained proficiency), and the denominator represents the universe (e.g., all students served)" (Instructions for Grant Performance Report, p. 7). ****Baseline data (per Instructions for Grant Performance Report) *****Upper row represents data for Cohort 1 (Spring 2012) and lower row represents data for Cohort 2 (Fall 2012)*****

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| **4.b Performance Measure** College of the Canyons** Cohort 2 (Fall 2012) Increase by 75 percent the College of the Canyons and Glendale Community College students who enroll in online courses with CSUN faculty over the 2010-11 baseline rate*** Note that the performance measures for this objective have been disaggregated from the original performance measure for reporting purposes only. **Note that this performance measure is reported in separate tables for College of the Canyons and Glendale Community College, given differences in target/actual performance data for this reporting period. ***Note that in the ratio columns of the target and actual performance data "the numerator represents the numerical target (e.g., the number of students that are expected to attain proficiency) or actual performance data (e.g., the number of students that attained proficiency), and the denominator represents the universe (e.g., all students served)" (Instructions for Grant Performance Report, p. 7). ****Baseline data (per Instructions for Grant Performance Report) *****Upper row represents data for Cohort 1 (Spring 2012) and lower row represents data for Cohort 2 (Fall 2012)*****

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<td>7</td>
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4.b. Performance Measure* for Glendale Community College** Cohort 1 (Spring 2012) *Note that the performance measures for this objective have been disaggregated from the original performance measure for reporting purposes only. **Note that this performance measure is reported in separate tables for College of the Canyons and Glendale Community College, given differences in target/actual performance data for this reporting period. ***Note that in the ratio column of the target and actual performance data the numerator represents the numerical target (e.g., the number of students that are expected to attain proficiency) or actual performance data (e.g., the number of students that attained proficiency), and the denominator represents the universe (e.g., all students served)” (Instructions for Grant Performance Report, p. 7). ****Baseline data (per Instructions for Grant Performance Report) *****Upper row represents data for Cohort 1 (Spring 2012) and lower row represents data for Cohort 2 (Fall 2012)

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4.b. Performance Measure* for Glendale Community College** Cohort 2 (Fall 2012) *Note that the performance measures for this objective have been disaggregated from the original performance measure for reporting purposes only. **Note that this performance measure is reported in separate tables for College of the Canyons and Glendale Community College, given differences in target/actual performance data for this reporting period. ***Note that in the ratio column of the target and actual performance data the numerator represents the numerical target (e.g., the number of students that are expected to attain proficiency) or actual performance data (e.g., the number of students that attained proficiency), and the denominator represents the universe (e.g., all students served)” (Instructions for Grant Performance Report, p. 7). ****Baseline data (per Instructions for Grant Performance Report) *****Upper row represents data for Cohort 1 (Spring 2012) and lower row represents data for Cohort 2 (Fall 2012)

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Explanation of Progress (Include qualitative data and data collection information)
Evaluation Data Sources and Methods for the Objective
College of the Canyons and Glendale Community College report their respective data sources and methods below.

Evaluation Data Sources and Methods at College of the Canyons
College of the Canyons collected data on student participation in tutoring sessions and workshops through an existing MESA program tracking mechanism.

Evaluation Data Sources and Methods at Glendale Community College
Glendale Community College used an online baseline survey questionnaire (see below under “Description of Preliminary Findings Related to the Objective” for details) to collect data on these performance measures.

Description of Preliminary Findings Related to the Objective
Preliminary findings for each college are reported below.

Preliminary Findings of College of the Canyons
We developed a tracking mechanism for our AIM2 student cohort in order to quantify their time with both peer and faculty tutors. For performance measure 4a, given current baseline data reported by College of the Canyons, project targets have been established that are intended to achieve the percent increase in both performance measures related to increases in the number of students (not sessions or workshops) that participate in tutoring (4a), workshops (4a), and online classes (4b). Accordingly, the current target for performance measure 4a is set at 8/10 (80% of all Cohort 1 participants) and for performance measure 4b is 1/10 (10% of all Cohort 1 participants). We used the same logic to develop project targets on performance measures for Glendale Community College, given differences in target/actual performance data for this reporting period.

Preliminary Findings of Glendale Community College
With respect to performance measure 4a (i.e., Glendale Community College students’ participation in STEM tutoring), data were collected from an online survey questionnaire. Glendale Community College students participating in the program (Cohort 1-Spring 2012; Cohort 2-Fall 2012) were invited to participate in an online survey in August 2013 to collect data about the types of services and programs they participated in during the 2012-2013 academic year, including summer. The survey included items that asked if respondents attended tutoring sessions for STEM classes, academic workshops, and supplemental lab sessions for STEM classes. Due to attrition from the program (n=1) and graduation/transfer (n=7), the number of students in Cohort 1 as of August 2013 is five. Of the students in Cohort 1 who responded to the online survey (n=5), two out of the five students who responded indicated that they participated in tutoring sessions for a STEM class during the 2012-2013 academic year. Based on the total number of Cohort 1 students (n=5) that responded to the online survey questionnaire, the actual performance data for Cohort 1 for 2012-2013 is 2/5 (40%) of Cohort 1 participants. One student reported attending 4-5 sessions of math tutoring, and one student reported attending 6 or more sessions of math and engineering tutoring. Due to attrition from the program (n=3) and graduation/transfer (n=2), the number of students in Cohort 2 as of August 2013 is nine. Of the students in Cohort 2 (n=9), eight out of the ten students who responded indicated that he/she participated in tutoring sessions for a STEM class during the 2012-2013 academic year. Students reported attending tutoring in science (4 students), technology (2 students), engineering (2 students), and mathematics (6 students) classes. Several students indicated that the tutoring they received was provided by student-tutors who were contracted specifically by the AIM2 program to assist program participants. One student stated that having a student tutor was “extremely helpful and essential to understanding the material.” The number of tutoring sessions was verified by the AIM2 Counselor/Coordinator, who tracked tutoring hours with tutoring log-in sheets. The AIM2 Counselor/Coordinator found that five students in Cohort 1 participated in a total of 51 hours of tutoring. Nine students in Cohort 2 participated in a total of 76 hours of tutoring.

Further, project students participating in the program (Cohort 1-Spring 2012; Cohort 2-Fall 2012) were also asked to indicate the number of STEM facilitated academic workshops they attended during the 2012-2013 academic year. These academic workshops include workshops that help students with planning coursework, time management, etc. and were sponsored by a STEM department. Of Cohort 1 participants, one out of the five students who responded indicated that they attended a STEM facilitated academic workshop. Of Cohort 2 participants, seven out of the ten students who responded indicated that they attended a STEM-facilitated workshop. Three students reported attending 1 workshop, one student reported attending 2 workshops, and three students reported attending 4-5 workshops. The topics included: library workshops, student development classes, and transfer application workshops. In addition to STEM-facilitated academic workshops, students were asked in the survey if they participated in any supplemental lab sessions for a STEM class. Supplemental lab sessions consist of learning workshops offered to specific classes that focus on problem solving exercises centered on the course material. Of Cohort 1 participants, one student indicated they attended a supplemental lab session. Of Cohort 2 participants, seven students indicated they attended a supplemental lab session led by either student leaders or Glendale Community College faculty. Between tutoring sessions, STEM-facilitated academic workshops, and supplemental lab learning workshops, a total of three students in Cohort 1 and ten students in Cohort 2 reported participating in an activity related to performance measure 4a during 2012-2013.

For performance measure 4b (i.e., Glendale Community College students’ enrollment in online courses with CSUN faculty), data from the online survey questionnaire indicated that one Glendale Community College student in Cohort 1 enrolled in online courses at CSUN during the 2012-2013 academic year. As a consequence, the actual performance data for this measure is 1/5 (20% of Cohort 1 participants). By contrast, none of GCC’s Cohort 2 participants reported enrolling in online courses with CSUN faculty.

Description of Project Activities Related to the Objective
Specific project activities at College of the Canyons and Glendale Community College, respectively, are detailed below.

Project Activities at College of the Canyons
...
Project activities included a mentor/tutor training workshop for all interested AIMS2 scholars. Through these workshops, AIMS2 scholars were trained to participate as tutors and/or mentors for new AIMS2 Cohort 2 scholars who entered the program in Fall 2012. We produced a full drop-in tutorial schedule including math, engineering, and physics. There are four hours of engineering tutoring with faculty tutors, four hours of physics tutoring with faculty tutors and fourteen hours of mathematics tutoring with both faculty and student tutors available for our AIMS2 scholars. Currently, there is one trained peer tutor for mathematics but we are working to identify other potential candidates. Previously trained tutors have transferred to CSUN. We will monitor our progress toward these goals by collecting data on scholar participation in peer tutoring sessions and academic workshop attendance. Because of the financial situation for our COC AIMS2 scholars it is difficult for them to enroll in courses at CSUN while they are still at College of the Canyons.

Project Activities at Glendale Community College
During the course of the project, students will be supplemented with tutoring to improve their math, science and language skills to increase their “transfer readiness” in these areas. The AIMS2 Counselor/Coordinator reminds students of the tutoring support available and their requirement to seek tutoring services. Glendale Community College program administrators and the AIMS2 Counselor/Coordinator are continuing to work on articulating present and new courses with CSUN faculty. We will monitor our progress toward these goals by collecting data on scholar participation in peer tutoring sessions and academic workshop attendance.

Project Activities at CSUN and College of the Canyons/Glendale Community College
Clearly, the actual data for performance measure 4b for both College of the Canyons and Glendale Community College identify challenges that we have discussed as a project team (at our December 2012 team meeting). Specifically, we discussed the general approach to teaching engineering and computer science courses online and the need to deliver on-ground courses and offer face-to-face instructional experiences in the disciplines associated with the project. In addition, we discussed the issue with affordability with enrolling in courses at CSUN while COC and GCC cohort participants are still enrolled as community college students. Given these issues, we concluded that we will need to address how to best perform within the parameters of this performance measure (i.e., 4b at College of the Canyons and 4b at Glendale Community College) while meeting the pedagogical needs of CSUN faculty and financial needs of COC and GCC students. One possible alternative to student enrollment in online courses that we discussed is extending the CSUN faculty summer research projects in which COC and GCC students participate through an online environment. We plan to continue this discussion into the next performance period. Further, we discussed and moved a direction of more mobile technology accessible to students and faculty. Consequently, we distributed iPads to all cohort participants (in Cohorts 1, 2, and 3) at COC, GCC, and CSUN in Summer 2013 to support student access to faculty and instructional tools available online in a web-based environment.

Plans to Use of Performance Data to Monitor Progress
At College of the Canyons, progress toward the above performance measures of this objective will be tracked using a tracking mechanism, which will be developed so that AIMS2 scholars are able to quantify their time with both peer and faculty tutors and participation in peer tutoring session and academic workshops. Meanwhile, Glendale Community College plans to monitor performance on these two measures using the online survey questionnaire results.
### Performance Measure

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<tr>
<td>5.a. Performance Measure* for College of the Canyons** Cohort 1 (Spring 2012) Increase by 90 percent the frequency of student-faculty interactions over the 2010-11 baseline rate***** Note that the performance measures for this objective have been disaggregated from the original performance measure for reporting purposes only. **Note that this performance measure is reported in separate tables for College of the Canyons and Glendale Community College, given differences in target/actual performance data for this reporting period. ***No baseline data available for this report ****Upper row represents data for Cohort 1 (Spring 2012) and lower row represents data for Cohort 2 (Fall 2012)</td>
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<td>5.a. Performance Measure* for College of the Canyons** Cohort 2 (Fall 2012) Increase by 90 percent the frequency of student-faculty interactions over the 2010-11 baseline rate***** Note that the performance measures for this objective have been disaggregated from the original performance measure for reporting purposes only. **Note that this performance measure is reported in separate tables for College of the Canyons and Glendale Community College, given differences in target/actual performance data for this reporting period. ***No baseline data available for this report ****Upper row represents data for Cohort 1 (Spring 2012) and lower row represents data for Cohort 2 (Fall 2012)</td>
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<td>5.a. Performance Measure* for Glendale Community College** Cohort 1 (Spring 2012) Increase by 90 percent the frequency of student-faculty interactions over the 2010-11 baseline rate***** Note that the performance measures for this objective have been disaggregated from the original performance measure for reporting purposes only. **Note that this performance measure is reported in separate tables for College of the Canyons and Glendale Community College, given differences in target/actual performance data for this reporting period. ***Note that in the ratio columns of the target and actual performance data <em>the numerator represents the numerical target (e.g., the number of students that are expected to attain proficiency) or actual performance data (e.g., the number of students that attained proficiency), and the denominator represents the universe (e.g., all students served)</em>! (Instructions for Grant Performance Report, p. 7). ****Baseline data (per Instructions for Grant Performance Report) *****Upper row represents data for Cohort 1 (Spring 2012) and lower row represents data for Cohort 2 (Fall 2012)</td>
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<td>5.b. Performance Measure* for College of the Canyons** Improve the quality of interactions between College of the Canyons and Glendale Community College students and CSUN faculty in STEM fields *Note that the performance measures for this objective have been disaggregated from the original performance measure for reporting purposes only. **Note that this performance measure is reported in separate tables for College of the Canyons and Glendale Community College.</td>
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<td>5.b. Performance Measure* for Glendale Community Colleges** Improve the quality of interactions between College of the Canyons and Glendale Community College students and CSUN faculty in STEM fields *Note that the performance measures for this objective have been disaggregated from the original performance measure for reporting purposes only. **Note that this performance measure is reported in separate tables for College of the Canyons and Glendale Community College.</td>
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### Explanation of Progress (Include qualitative data and data collection information)

Evaluation Data Sources and Methods for the Objective
College of the Canyons and Glendale Community College report their respective data sources and methods below.

Evaluation Data Sources and Methods at College of the Canyons
COC used a survey questionnaire to establish the baseline data regarding faculty contact. During the course of this performance period, all COC faculty contacts were recorded. Interactions with CSUN faculty and students through summer research opportunities were also recorded.

Evaluation Data Sources and Methods at Glendale Community College
For performance measure 5a (student-faculty interactions), Glendale Community College used an online student survey questionnaire and informal conversations with the AIM2 Counselor/Coordinator to collect data. For performance measure 5b (quality of student-faculty interactions), Glendale Community College used an online student survey questionnaire, group interviews (i.e., Cohort 1 and Cohort 2 participant focus groups), and informal conversations with the AIM2 Counselor/Coordinator (see below under “Description of Preliminary Findings Related to the Objective” for details) to collect data.

Description of Preliminary Findings Related to the Objective
Preliminary findings for each college are reported below.

Preliminary Findings of College of the Canyons
For performance measure 5a, College of the Canyons is working to strengthen its schedule of appointments for our engineering faculty to spend one-on-one time with each member of our AIM2 student cohorts. Each student will be scheduled for monthly one-on-one time with faculty in the engineering department to discuss their academic goals, their professional aspirations, and the barriers they may face along the way. During this reporting period, 42 faculty-student interactions in Cohorts 1 and 2 were made. When we examine the total number of interactions by student headcount, we find that 7/7 (Cohort 1) and 15/15 (Cohort 2) students interested with faculty. We recorded students scheduling one-on-one meetings with faculty in the engineering department to discuss their academic goals, professional aspirations, and barriers to academic success. Given baseline data for Cohort 1 (n=0)—and the same model applied to Cohort 2 (n=0)—for performance measure 5a, we see that actual performance data allows us to conclude that this performance measure has been achieved. In terms of performance measure 5b, qualitative data on the quality of student-faculty interaction will be reported in the next performance period.
Preliminary Findings of Glendale Community College

For performance measure 5a (i.e., student-faculty interactions), data were collected from a cohort survey questionnaire. Glendale Community College students participating in the program (Cohort 1-Spring 2012; Cohort 2-Fall 2012) were invited to participate in an online survey in August 2013 to collect data about the types of services and programs they participated in during the 2012-2013 academic year, including any interactions with CSUN and GCC faculty. Due to attrition from the program (n=1) and graduation/transfer (n=7), the number of students in Cohort 1 as of August 2013 is five. Among participants in Cohort 1 (n=5) five of the five students that responded indicated that they had interaction with a faculty member. The types of student-faculty interactions consisted of: office hour visits (3 students), email communication (4 students), communication by phone (1 student), and out of class discussions (5 students). Due to attrition from the program (n=3) and graduation/transfer (n=2), the number of students in Cohort 2 as of August 2013 is nine. Among the initial total participants in Cohort 2 (n=14) eight of the ten students that responded indicated that they had had interaction with a faculty member. The types of student-faculty interactions consisted of: office hour visits (8 students), email communication (6 students), communication by phone (3 students), and out of class discussions (6 students). All cohorts have had an opportunity to seek mentors from Glendale Community College faculty and CSUN faculty. Faculty mentors have provided academic support, as well as have provided career advice and given students a sense of what will be expected of them when they transfer to CSUN.

With the advancement of mobile technology, texting and email have become the preferred choice for weekly communication between the AIMS2 Counselor/Coordinator and students. The AIMS2 Counselor/Coordinator found that the use of a cell phone device is an effective tool when sending AIMS2 scholars regular announcements pertaining to monthly AIMS2 meetings, AIMS2 events/field trips, individual counseling & financial aid follow-ups. Similarly, program participants often use this preferred method of communication for a variety of requests including counseling appointments, tutoring, mentoring, letters of recommendation, and other related program issues. As a result, many of the participants feel that the AIMS2 Counselor is extremely accessible and feel that their needs are met given this innovative mode of communication. The AIMS2 Counselor/Coordinator has sent ten text messages, per student (n=15 in Spring, n=11 in Fall). Additionally, AIMS2 Counselor/Coordinator communicates via e-mail and Facebook twice or more per week. Finally, the iPad initiative of the AIMS2 project enhanced contact and communicate between students and the AIMS2 Counselor/Coordinator.

With respect to performance measure 5b (i.e., quality of student-faculty interactions), data was collected from a cohort survey questionnaire, as well as participant group interviews. Students and the AIMS2 Counselor/Coordinator described several events and opportunities for which Glendale Community College participants could interact with CSUN faculty. Guest speakers, including faculty from GCC and CSUN, have attended the club’s monthly sessions and shared information with participants on a range of STEM issues and disciplines. Topics have included: robotics, mechanical engineering, and the science behind Glendale Water and Power. Students have also been able to hear about how different STEM fields are connected, the process and benefits of furthering their education after undergard, and how different science theories are applicable to day-to-day life. Additionally, students were encouraged to participate in internship opportunities with CSUN faculty. Two participants from Cohort 1 and one participant from Cohort 2 reported participating in an internship in 2012-2013. While two students reported that they took the internship to learn more about a specific topic (i.e., renewable energies, diabetes), one student was more interested in using this as an opportunity to develop better relationships with CSUN professors and to expose them-selves to the working environment.

Description of Project Activities Related to the Objective

Specific project activities at College of the Canyons and Glendale Community College, respectively, are detailed below.

Project Activities at College of the Canyons

At College of the Canyons, each student will be scheduled for monthly one-on-one time with faculty in the engineering department to discuss their academic goals, their professional aspirations, and the barriers they may face along the way. We also plan to invite CSUN engineering faculty to have lunch at COC with our cohort students so that they can learn more about the opportunities available to them at CSUN. This chance to interact informally with CSUN faculty and learn about their research will provide a unique experience for College of the Canyons AIMS2 students. During this performance period 8 of COC’s AIMS2 scholars participated in CSUN’s Senior Design Day which provided them an opportunity to interact with CSUN’s faculty. We will track the number of faculty/scholar appointments and scholar participation in CSUN faculty events at COC.

Project Activities at Glendale Community College

Glendale Community College program administrators and the AIMS2 Counselor/Coordinator will continue to identify faculty mentors for students to interact with. The AIMS2 Counselor/Coordinator will also continue meeting with participants monthly for one hour in a club capacity. The purpose of these meetings is to discuss the projects, and listen and engage with guest speakers.

Summer Project Research Activities at CSUN

In addition to the project activities included above under College of the Canyons and Glendale Community College, CSUN faculty mentors facilitated interaction between themselves and COC and GCC students during the performance period. Specifically, select CSUN faculty mentors invited COC and/or GCC students to join CSUN students in faculty research projects at CSUN with CSUN faculty mentors in Summer 2013. The CSUN faculty mentors, research project names, and number of students (COC, GCC, and CSUN) who participated in the projects are listed below:

Professors Stewart Prince and Bob Ryan:
"Wind Tunnel Testing Summer Research"
"Human Powered Vehicle (HPV) project with 5 CSUN students and 2 GCC students"

Professor Behzad Bavarian:
"Alternative Battery-BioTech Project with 6 CSUN students, 1 GCC student, 1 COC student"

Professor Bruno Osorno and Professor Kourosh Sedghisigarchi:
"SMART GRID project with 2 CSUN students, 1 GCC student, 1 COC, and 1 Mission Community College student"

Professor Gloria Melara:
"Collaborating and Modeling Android computer game Summer Project" with 2 students from CSUN students and 4 GCC students

In terms of the performance measures of this objective, these projects facilitated interaction between CSUN faculty, CSUN students, and COC/GCC students within a re-search context and supported the achievement of the objective.

Plans to Use of Performance Data to Monitor Progress

At College of the Canyons, progress toward the performance measures of this objective are tracked using pre-participation and post-participation surveys, faculty/scholar appointment records, records of counseling contacts and scholar participation in COC and CSUN events and research opportunities. Glendale Community College will continue monitoring performance on these two measures through the use of results from the online survey questionnaire and group interviews (i.e., participant focus groups). Specifically, Glendale Community College plans to collect data on the quality of student-faculty interactions in 2014 through student participant focus groups and a follow-up online survey. For the student focus groups, a protocol will be developed to inquire about students’ experiences in interacting with CSUN faculty, the frequency of interactions, the types of interactions, and what was most and least beneficial about the support they received. The focus groups will be led by the program evaluators and will be audio recorded as well as have hand-written notes taken during the discussion.
Check if this is a status update for the previous budget period.

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<th>Measure Type</th>
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6.b. Performance Measure* for Glendale Community College** Cohort 2 (Fall 2012) Increase by 15 the number of College of the Canyons and Glendale Community College students who are peer mentored by CSUN students over the 2010-11 baseline number*** **Note that the performance measures for this objective have been disaggregated from the original performance measure for reporting purposes only. ***Note that this performance measure is reported in separate tables for College of the Canyons and Glendale Community College, given differences in target/actual performance data for this reporting period. **Note that in the ratio columns of the target and actual performance data "the numerator represents the numerical target (e.g., the number of students that are expected to attain proficiency) or actual performance data (e.g., the number of students that attained proficiency), and the denominator represents the universe (e.g., all students served)" (Instructions for Grant Performance Report, p. 7). ****Baseline data (per Instructions for Grant Performance Report) *****Upper row represents data for Cohort 1 (Spring 2012) and lower row represents data for Cohort 2 (Fall 2012)

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6.c. Performance Measure* for College of the Canyons** Improve the quality of peer-peer interaction *Note that the performance measures for this objective have been disaggregated from the original performance measure for reporting purposes only. **Note that this performance measure is reported in separate tables for College of the Canyons and Glendale Community College.

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Preliminary Findings of Glendale Community College

During the performance period, College of the Canyons and Glendale Community College support the assessment of these measures through data collection methods designed to meet their unique project needs. Evaluation Data Sources and Methods at College of the Canyons

College of the Canyons collected data on student participation in tutoring sessions, AIMS2 activities and the Tutor/mentor training workshop through existing tracking and recording mechanisms.

Evaluation Data Sources and Methods at Glendale Community College

Glendale Community College used an online survey questionnaire and group interviews (i.e., participant focus groups) (see below under "Description of Preliminary Findings Related to the Objective" for details) to collect actual performance data on these performance measures.

Description of Preliminary Findings Related to the Objective

Preliminary findings for each college are reported below.

Preliminary Findings of College of the Canyons

With respect to performance measure 6a, College of the Canyons reports that no Cohort 1 students had participated in tutoring in STEM fields prior to the project period. As a result, the project target for the current cohort is 15. Likewise, we apply the same baseline data (n=0) to Cohort 2 and conclude that no Cohort 2 students had participated in tutoring in STEM fields prior to the project. With the baseline figures for this measure, we estimate a project target at 15 for both Cohort 1 and Cohort 2. During this performance period, a total of 66 hours in STEM tutoring in biology, chemistry, engineering, physics, and mathematics were provided. On average each week there were ten hours of tutoring in chemistry, physics, and mathematics. In addition to one-on-one tutoring, there were 11 workshop hours each week in Chemistry-201, Math-211, Math-212 and Math-214. Attendance at these workshops was as follows:

Chemistry 201 (General Chemistry I): 19 student participants/3 AIMS2 Scholars
Math 212 (Calculus II): 21 student participants/4 AIMS2 scholars
Math 214 AEW (Linear Algebra): 16 participants/3 AIMS2 scholars
Math211 (Calculus I): 15 student participants/3 AIMS2 scholars

During the performance period, 5 of the 7 current students in Cohort 1 and 11 of the current students in Cohort 2 participated in tutoring or academic workshops (see performance measure 4a). Given project targets, we can conclude that, while substantive progress has been made, project respective targets for both cohorts have not been met this performance period. In terms of peer mentoring (performance measure 6b), College of the Canyons reports that no Cohort 1 or Cohort 2 students participated in peer mentoring by CSUN students during the period. However, College of the Canyons reports that 12 COC AIMS2 Scholars were peer mentored by other COC AIMS2 Scholars during the period. In terms of performance measure 6c, qualitative data on the quality of peer (student-student) interaction will be reported in the next performance period.

Preliminary Findings of Glendale Community College

With respect to performance measure 6a, (i.e., Glendale Community College students' participation in peer-peer tutoring), data were collected from a survey questionnaire. Glendale Community College students participating in the program (Cohort 1- Spring 2012; Cohort 2-Fall 2012) were invited to participate in an online survey in August 2013 to collect actual performance data about the types of services and programs they participated in during the 2012-2013 academic year, including peer-peer tutoring. In Cohort 1, four of the five students who responded indicated that they received peer tutoring during the 2012-2013 academic year. Specifically, these sessions were led by Glendale Community College students. The number of peer tutoring sessions that these students attended varied. The courses that students indicated that they received peer tutoring in were: science, technology, and mathematics. In Cohort 2, four of nine students who responded indicated that they received peer tutoring during the 2012-2013 academic year. Specifically, these sessions were led by CSUN Academic College students. The courses that the students indicated that they received peer tutoring in were: science, technology, and mathematics. Accordingly, the actual performance data for performance measure 6a for Cohort 1 is 8 students and 7 students for Cohort 2, respectively.

For performance measure 6b (i.e., Glendale Community College students' peer mentored by CSUN students), data were collected from a survey questionnaire. Glendale Community College students participating in the program (Cohort 1- Spring 2012; Cohort 2-Fall 2012) were invited to participate in an online survey in August 2013 to collect actual performance data about the types of services and programs they participated in during the 2012-2013 academic year, including whether they received mentoring from a CSUN student. In Cohort 1, two of five students reported participating in peer mentoring. In Cohort 2, one of the nine respondents indicated having a CSUN student as a peer mentor. Three students who have a CSUN mentor explained how their mentors provided support by sharing their experiences on class selection, transfer requirements, and career selection. Participants who worked with their CSUN peer mentor in a lab or internship setting expressed appreciation.
for the opportunity for being engaged, challenged, and supported by their mentors. Due to attrition from the program (n=1) and graduation/transfer (n=7), the number of students in Cohort 1 as of August 2013 is five. The actual performance data for Cohort 1 is 2 students. Based on the total number of students (n=10) in Cohort 2 in as of August 2013, the actual performance data for Cohort 2 is 1 student.

For performance measure 6c (i.e., quality of peer interactions), data were collected from a survey questionnaire and group interviews (i.e., participant focus groups). Cohort participants have had many opportunities to interact with other Glendale Community College peers and CSUN peers. Cohort participants meet monthly for one hour in a club capacity to work as a team to tackle real, tangible, and ambitious projects, as well as enhance their knowledge of STEM through guest speakers. As one student described, they are being “given opportunities to apply science to real life.” In addition to their monthly meetings, students engage in quality interactions during field trips and internships. In 2012-2013, three field trips were organized: Jet Propulsion Laboratory-NASA, JBL/Harmon, and Burbank Water facility. Students were able to see the inner workings of what takes place in these facilities, and engage in follow up conversation with their peers about how their learning relates to their coursework and career interest. In addition to community field trips, participants had the opportunity to attend an AIMS2 Leadership retreat where they were covered topics such as: how to con-duct themselves in the public setting and how to be a leader. Through team building activities, students were able to overcome fears and develop trust with one another. Students from GCC, CSUN, and COC participated.

In addition to the AIMS2 Leadership retreat, GCC participants had the opportunity to interact with peers from COC and CSUN through summer internship programs. One student appreciated being able to work with students from the other colleges as it made her feel “less anxious to be the only person in the lab.” She concluded: “[t] was fun collaborating on work.”

Description of Project Activities Related to the Objective
College of the Canyons and Glendale Community College, respectively, report specific project activities in detail both immediately above and below.

Project Activities at College of the Canyons
During this performance period, College of the Canyons established a drop-in tutorial schedule for math, engineering, and physics and three peer tutors for mathematics have been hired and trained. College of the Canyons project faculty and staff are currently developing additional training workshops for peer tutors and, as mentioned earlier, are developing a tracking mechanism for AIMS2 scholars using peer tutors. With regard to this performance measures, COC’s AIMS2 scholars have participated in the following activities:

- Annual Senior Design Project Showcase (http://www.ecs.csun.edu/ecs/sdps/-April 2013 (8 scholars)
- AIMS2 Leadership Retreat-May 2013 (11 scholars)
- GCC-AIMS2 Aerospace Engineering speaker event, tour of the observatory, tour of the manufacturing lab and hands-on experiences (10 scholars)
- Ping Pong Ball Launcher competition-May 2013 (14 scholars)
- COC’s Engineering Bootcamp-June 2013 (10 scholars)

We will track all scholar interactions with peer mentors from both COC and CSUN. We are currently developing additional training workshops for peer tutors and as mentioned earlier have developed a tracking mechanism for AIMS2 scholars using peer tutors.

Project Activities at Glendale Community College
Glendale Community College students are required to participate in tutoring to increase their math, science and language skills. The Glendale Community College Learning Center provides tutoring services for students, and is responsible for screening and training all student tutors. The AIMS2 Counselor/Coordinator reminds students of the tutoring support available and their requirement to seek tutoring services. The AIMS2 Counselor/Coordinator works with the GCC Supplemental Instructor Coordinator for tutor referrals. Additionally, the AIMS2 Counselor/Coordinator is continuing to work with CSUN administrators to identify additional CSUN students who can mentor GCC Cohort participants who have not been assigned a mentor. Feedback from participants, however, suggests that student-mentor relationships are best established naturally (i.e., making connections through internships or field trips), rather than randomly assigned by program administrators. Glendale Community College students will continue to have opportunities for peer-peer interaction by attending club meetings, field trips, and participating in club projects.

Plans to Use of Performance Data to Monitor Progress
College of the Canyons will track all scholar interactions with peer mentors from both College of the Canyons and CSUN. Glendale Community College plans for monitoring performance on these two measures include tracking student participation in tutoring and peer-peer interactions by using the results from the online survey questionnaire and group interview (i.e., participant focus group). Specifically, the quality of peer interactions will be collected in 2014 through student participant focus groups and a follow-up online survey. For the student focus groups, a protocol will be developed to inquire about students’ experiences in their peer mentorship, the types and frequency of activities, and what was most and least beneficial about the support they received. The focus groups will be led by the program evaluators and will be audio recorded as well as have hand-written notes taken during the discussion.
Project Objective: 7. Increase the program completion of Hispanic and low-income students in STEM fields

Check if this is a status update for the previous budget period.

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<th>Measure Type</th>
<th>Quantitative Data</th>
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<tr>
<td>7.a After two years, increase from 26% to 30% the number of Hispanic and low-income students who complete baccalaureate degrees in STEM fields over the 2010-11 baseline number *CSUN institutional data (not project cohort data) **Note that in the ratio columns of the target and actual performance data (the numerator represents the numerical target (e.g., the number of students that are expected to attain proficiency) or actual performance data (e.g., the number of students that attended proficiency), and the denominator represents the universe (e.g., all students served) (Instructions for Grant Performance Report, p. 7). **Baseline data (per Instructions for Grant Performance Report)</td>
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Explanation of Progress (include qualitative data and data collection information)

Evaluation Data Sources and Methods for the Objective

During the performance period, we collected actual performance data on the single performance measure for this objective. During the performance period of the first project year (2012-2013), we collected baseline data for the performance measure. Quantitative data sources for both baseline and actual performance data for this measure are from CSUN institutional data (from CSUN’s Office of Institutional Research). During the performance periods for the last two project years, we worked with CSUN’s Office of Institutional Research to prepare the 2010-11 baseline data on student transfer figures for both College of the Canyons (GCC) and Glendale Community College (GCC) and to produce the 2012-13 figures of actual performance data, which mark the end of the academic year after formation of Cohort 1 and 2 participants and two academic years from the project baseline data year.

Description of Preliminary Findings Related to the Objective

The baseline data for this measure is from CSUN’s Office of Institutional Research and includes institutional data (i.e., not project cohort data). Accordingly, the baseline data do not correspond to the number of project cohort participants but rather to all students who met the criteria for inclusion in the transfer cohort (see next sentence). The baseline data for Hispanic and/or low-income students in engineering and computer science at CSUN indicates that the three-year program completion (i.e., graduation) rate for the most recent entry term (Fall 2007) at project formation for Hispanic and/or low-income (i.e., Pell grant recipients) transfer students planning to major in a field in the College of Engineering and Computer Science was 26.5% (18/68). This program completion rate—26.5%—comprises the baseline data for the project and the basis for which the project target of 30% is set. Given the project target increase, the number of students who graduate is 21/68 (or just over 30%—30.9%). When we interpret actual performance data against the project target of 30.9% (21/68), we find that 39.7% (25/63) completed a degree program for the most recent period for which institutional data are available (Fall 2009 entry term). That is, of the 63 Hispanic and/or low-income transfer students planning to major in a field in the College of Engineering and Computer Science who entered in Fall 2009, 25 students completed a program of study within three years, for a total of 39.7% of all students in the cohort. What is more, this figure represents a nearly 10 percentage point increase over the Fall 2008 data (reported in the performance period for the first project year) of 29.3% (22/75). Given the project target, we can conclude that we have exceeded the baseline and target measure for the performance measure of this objective.

Description of Project Activities Related to the Objective

During the performance period, project faculty mentors and staff worked to support this project objective. For example, faculty mentors met with their cohort participants (in both Cohort 1, Cohort 2, and Cohort 3 starting in Fall 2013) to establish a faculty mentoring relationship and coordinate project activities with cohort participants, including cohort meetings and research project groups. Project activities currently under way and/or planned for the current and next performance periods include the following: participation in CSUN’s Tech Fest and Senior Design Project Showcase, peer tutoring and peer mentoring, participation in undergraduate research projects, projects or activities in an instructional lab of the faculty mentor, and introduction to an appropriate professional society student chapter in a discipline of the faculty mentor. In addition, project staff facilitated student participation in a resume workshop and participation in national organization for Latino/a students, including ASHIE (Alliance of HSI Educators) conference, HACU (Hispanic Association of Colleges and Universities) conference, Great Minds in STEM (formerly known as Hispanic Engineer National Achievement Awards) conference, and ASME (American Society of Mechanical Engineers) workshops. In fact, during the performance period, one AIMS2 Cohort 1 participant earned a national scholarship to the ASHIE conference (for more information on the national scholarship recipient, please see: http://www.ecs.csun.edu/aims2/documents/Florescongrats.pdf). In addition, 3 Cohort 2 participants attended the HACU conference with 2 of these participants earning national scholarships to attend (please see the following link for more information on these two national scholarship recipients, which comprised two out of twenty scholarship recipients: http://www.ecs.csun.edu/aims2/documents/HACUScholarshiprecipients.pdf). In addition, four cohort participants (1 from Cohort 1 and 3 from Cohort 2)—along with GCC cohort participants—attended the Great Minds in STEM conference with one cohort participant from CSUN on the Northrop Grumman team winning third place in the College Bowl competition (for more information on this CSUN student’s accomplishments, please see: http://www.ecs.csun.edu/aims2/documents/LesliePumaHENAAC10-3-13.pdf). Finally, two cohort participants earned prestigious internships at Northrop Grumman and Honda Performance Division, respectively.

Plans to Use of Performance Data to Monitor Progress

With both baseline and actual performance data for the performance measure of this objective, we plan to publish the figures from this year’s report on the AIMS2 project website (http://www.ecs.csun.edu/aims2/) and discuss progress at our project meetings.
During the performance period, we collected baseline and actual performance data for these two measures through a combination of document data, student recruitment/application interviews, and student structured journal sources. Specifically, we collected baseline data for Cohort 2 in early Fall 2012 and actual performance data for both Cohorts 1 and 2 for the second project objective (8b) through document (structured journal) data collection in late Fall 2012, Spring 2013, Summer 2013, and early Fall 2013 terms. Previously, during the performance period for the first project year, we collected baseline and actual performance data for the first objective (8a) through document data collection in Spring 2012 and baseline data for Cohort 1 for the second objective (8b) in the CSUN student recruitment process in the late Fall 2011 and early Spring 2012 terms. During recruitment interviews for both Cohorts 1 and 2, we asked cohort participant applicants the number of academic advising sessions that they had in the Fall 2011 term or immediately prior to the formation of the cohort in Spring 2012 (Cohort 1) or the Spring 2012 term or immediately prior to the formation of the cohort in Fall 2012 (Cohort 2). Finally, we collected Cohort 1 and Cohort 2 actual performance data during the period through structured journal data, which cohort participants completed on a monthly basis and submitted in the Moodle (online) project site. Student journaling occurs through student completion of an electronic journal form with items related to project outcomes, including an item related to the number of academic advising sessions for the month. That is, students complete and submit an electronic journal entry related to academic advising (and other project activities) by the end of the month or the beginning of the next month. Once submitted, entry data extracts in Excel occurred, followed by a tabulation of the aggregate number of counseling sessions. While baseline data for Cohort 3 (Fall 2013) have been collected, both baseline data and actual performance data for this cohort will be presented in next year’s (third project year) report.

### Description of Preliminary Findings Related to the Objective

**Preliminary Findings for Performance Measure 8a**

With respect to the first performance measures (8a) for this objective, baseline data reveal that CSUN’s College of Engineering and Computer Science had three full-time staff academic advisors in 2010-11. Given that the college had three staff academic advisors prior to the project, the project target is four total academic advisors. During 2012-13, we augmented the academic advising capacity of the college through the addition of the academic advising with their cohort participants. Further, actual performance data for the first performance measure (8a) demonstrate that, during the first project performance period (2012-13), we met the project target and achieved this component of the project objective with the addition of one new staff academic advisor to the college. The staff academic advisor, LaTesha Hagler, works with the student services office of the college and coordinates project activities related to cohort participant advising. With the addition of Tesha, the college now has four staff academic advisors in total, one above the baseline data. Given the actual performance data (n=4) and the project target (n=3), we have met this performance measure of the objective.

**Overview of Preliminary Findings for Cohorts 1 and 2: Performance Measure 8b**

When we turn to the second performance measure (8b) of this objective, we find baseline data collection for Cohorts 1 and 2 began with the CSUN student recruitment/application process in the late Fall 2011 and early Spring 2012 terms (Cohort 1) and in the early Fall 2012 term (Cohort 2). During recruitment interviews, we asked cohort participant applicants the number of academic advising sessions in the Fall 2011 term or immediately prior to the formation of Cohort 1 in Spring 2012 and in Spring 2012 or immediately prior to the formation of Cohort 2 in Fall 2012.

**Preliminary Findings for Cohort 1: Performance Measure 8b**

The number of academic advising sessions that CSUN Cohort 1 participants reported prior to project entry is 56 (CSUN students only), which represents the baseline figure for this measure. Given the project target of increasing the number of academic advising sessions by two sessions per student, the current target number of sessions for Cohort 1 is 66. We derived this target by multiplying the number of unduplicated student headcount of Cohort 1 participants at CSUN (n=30) by two (sessions per student) and adding 56 sessions to the total for a total of 116. Further, actual performance data for the second performance measure (8b)—collected through cohort participant journaling during the performance period—reveals that Cohort 1 participants reported 95 total academic advising sessions through the end of performance period. This figure (n=95) represents a 5 percentage point increase over the total number of academic advising sessions (n=90) for the performance period of the first project year but still falls below the total project target (n=116). The figure (n=95) for this performance period demonstrates substantial progress toward the project target of 116 total academic advising sessions.

**Preliminary Findings for Cohort 2: Performance Measure 8b**

Meanwhile, the number of academic advising sessions that CSUN Cohort 2 participants reported prior to project entry is 11 (CSUN students only), which represents the baseline figure for this measure. Given the project target of increasing the number of academic advising sessions by two sessions per student, the current target number of sessions for Cohort 2 is 69. We derived this target by multiplying the number of unduplicated student headcount of Cohort 2 participants at CSUN (n=29) by two (sessions per student) and adding 11 sessions to the total for a total of 69. By contrast, actual performance data for the second performance measure (8b) shows that Cohort 2 participants reported 104 total academic advising sessions through the end of performance period. This figure (n=104) exceeds the total project target (n=69) for the performance measure in the performance period and demonstrates a strong commitment to academic advising with cohort participants.

### Description of Project Activities Related to the Objective

Current and planned project activities that support the two performance measures for this objective include faculty mentoring through cohort and individual student meetings, career advising through cohort projects with faculty mentors, and resume workshops (which occurred on 2/22/13 for all engineering students), academic advising in the student services center, an Academic Success Center, and Facilitated Academic Workshops. In addition, more informal advising occurs at events like AIMS2 orientations—which occurred on 11/15/12 for Cohort 2 and 8/23/13 for Cohort 3—and AIMS2 socials (which occurred on 1/25/13 and 5/30/13 in the current performance period). To support academic and career advising, we disseminate information through posts of upcoming workshops and events on our project’s website (http://www.ecs.csun.edu/aims2/) on the “Workshop Schedules” page. In addition, with the distribution of iPads to all cohort participants (in Cohorts 1, 2, and 3) in Spring 2012 or immediately prior to the formation of the cohort in Fall 2012, we plan to continue to collect data to support performance measure 8b with structured journaling (via a web-based form in the Moodle cohort sites) and will continue on an ongoing basis through the next performance period. We anticipate the reporting of actual performance data for second measure (8b) in the next performance report for both Cohort 2 and Cohort 3, the newest cohort formed in Fall 2013, and plan to monitor progress on this second performance measure through planning discussions.
in project meetings.
Project Objective: 9. Enhance the academic participation rate of CSUN students in STEM classes, particularly in classes identified as barriers to retention, persistence, and completion in STEM fields

Check if this is a status update for the previous budget period.

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<td>9.a Cohort 1 (Spring 2012) Increase by 75 percent the students who participate in tutoring sessions in STEM classes (identified as barriers) over the 2010-11 baseline rate***</td>
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**Explanation of Progress (Include qualitative data and data collection information)**

Evaluation Data Sources and Methods for the Objective

With respect to baseline data for these three performance measures of this objective, data collection began with the Cohort 1 and Cohort 2 student recruitment cycles in late Fall 2011 and early Spring 2012 terms (Cohort 1) and early Fall 2012 (Cohort 2). During the interview process, we asked cohort applicants for Cohorts 1 and 2 the number of tutoring sessions, academic workshops, and supplemental lab sessions in which they had participated prior to program application.

Description of Preliminary Findings Related to the Objective

Preliminary Findings for Cohort 1: Performance Measures 9a, 9b, and 9c

During the performance period, baseline data for the three performance measures of this objective reveal that 15 students who reported having participated in tutoring sessions in Cohort 1, while a total of six Cohort 1 students reported having participated in an academic workshop prior to program application. Furthermore, only one Cohort 1 student had reported participating in supplemental lab sessions prior to project entry (i.e., in Fall 2011) during the recruitment interview process. These three figures re-iterate the number of students (i.e., headcount) rather than sessions or workshops. Accordingly, these three figures represent Cohort 1 baseline data for these three measures. Given the baseline data, the Cohort 1 project targets—all of which represent a 75% increase for the three measures include 26 students (9a), 11 students (9b), and 2 students (9c). In contrast, actual performance data for the three measures for Cohort 1, collected through structured journaling, reveal that 22 students reported participating in tutoring sessions (performance measure 9a). As a performance measure that requires us to collect headcount data rather than frequency data, these data demonstrate substantial progress toward the project target for student participation in tutoring sessions and represents 70% (21/30) of all Cohort 1 participants above the headcount (n=30) from the performance measure for this objective have been disaggregated from the original performance measure for reporting purposes only.

When we examine performance measures 9b and 9c, we observe excellent progress overall. With respect to performance measure 9b, 11 students from Cohort 1— a decline compared to the 2012-13 performance period figure (n=15)—reported participating in academic workshops through the period, which represents 37% (11/30) of Cohort 1 participants and indicates that actual performance data (n=11) met the project target (n=11) and the project objective has been achieved for this performance measure. Finally, with respect to performance measure 9c, 10 Cohort 1 students reported participating in a supplemental lab. Accordingly, actual data indicate that performance in this area of the objective (i.e., 33% of all Cohort 1 participants) surpassed the actual performance data (n=9) from the first project year and exceeded...
the project target (n=2), suggesting that this project performance measure 9c has been achieved during the period. Taken together, actual performance data on these three measures demonstrate substantial progress in meeting (performance measure 9a) or evidence of achieving (performance measures 9b and 9c) this project objective related to increasing student participation by 75% in tutoring, academic workshops, and supplemental labs.

Preliminary Findings for Cohort 2: Performance Measures 9a, 9b, and 9c

Similarly, baseline data for the three performance measures of this objective during the performance period reveal that the number of Cohort 2 students who reported—prior to program entry—having participated in tutoring sessions is 13 students, the total number of Cohort 2 students who reported having participated in an academic workshop is six students, and the total number of Cohort 2 students who reported participating in supplemental lab sessions is seven. As is the case with Cohort 1, these three figures relate to the actual number of Cohort 2 students (i.e., headcount) rather than sessions or workshops. As such, these three figures represent Cohort 2 baseline data for these three measures, respectively. With these baseline data, the project targets—all of which represent a 75% increase—for Cohort 2 for the three measures are 23 students (9a), 11 students (9b), and 12 students (9c). When we turn to actual performance data for Cohort 2 on the three measures, we discover that 21 students reported participating in tutoring sessions (performance measure 9a). As a headcount measure, this figure demonstrates meaningful progress toward the project target for student participation in tutoring sessions, representing 72% (21/29) of all Cohort 2 participants. Indeed, actual performance data for this performance measure indicate that the number of students who participated in tutoring (n=13) approached the target (n=23). For performance measure 9b, 12 students reported participating in academic workshops through the period, which represents 41% (12/29) of Cohort 2 participants and suggests that actual performance data (n=12) slightly exceeded the project target (n=11) and the project objective has been achieved for this performance measure. Finally, with respect to performance measure 9c, nine Cohort 2 students reported participating in a supplemental lab, which points to actual data (or 31% of all Cohort 2 participants) falling a bit short of the project target (n=12) and demonstrates substantial progress on this project performance measure (9c) during the period. Like with Cohort 1, actual performance data on these three measures demonstrate meaningful progress in meeting (performance measures 9a and 9c) or exceeding (performance measure 9b) this project objective related to increasing student participation in three key academic activities: tutoring, academic workshops, and supplemental labs.

Description of Project Activities Related to the Objective

With respect to the first performance measure (9a), with the formation of the Cohort 1 in January 2012, Cohort 2 in August 2012, and Cohort 3 in August 2013, we have continued to recruit, hire, train, and assign classes to peer tutors from CSUN to work with cohort participants. In addition, with the formation of Cohort 2 and Cohort 3 (to be reported in the performance report next year), we developed a model to recruit, hire, train, and assign peer tutors within faculty mentor groups to facilitate closer ties between faculty mentors, peer tutors, and cohort participants. As part of the process, project faculty and staff developed a process to advertise, recruit, hire, and train peer tutors from CSUN’s upper-division undergraduate and graduate students in the College of Engineering and Computer Science at the department or discipline level—within the respective faculty mentor groups. Similarly, faculty mentors worked with project staff to identify the "bottleneck" and/or "gateway" courses where tutoring may be needed for cohort participants. With the regular cycle of selection and hiring of peer tutors, tutoring services are available to cohort participants. In addition, we developed a complete tutoring list with names and contact information of tutors to distribute and disseminate to cohort participants. With these strategies, we seemed to have supported an increase in cohort participant use of peer tutoring and peer mentoring. In addition to these activities related to the first performance measure (9a), planned activities related to the second performance measure (9b) include an Academic Success Center, where workshops may be hosted, participation in Facilitated Academic Workshops, and participation in regional workshops of appropriate professional societies (on the recommendation of faculty mentors). To support our efforts in this area, we post and disseminate information on upcoming workshops on our project’s website (http://www.ecs.csun.edu/aims2/) on the “Workshop Schedules” page. Finally, faculty mentors formed and/or plan to form small group sessions with cohort participants in their instructional labs (to support performance measure 9c). In the first project year, we received the HP tablets (2760’s) and loaded DyKnow, the software that allows users to collaborate interactively so that faculty mentors and cohort participants can use them during supplemental lab, research, or mentor sessions. Over the last (second) project year, we added Apple tablets to the cohort experience with the distribution of iPads to each faculty and student in the project to support workshops and supplemental lab participation.

Plans to Use of Performance Data to Monitor Progress

Data collection to measure actual performance on these three performance measures for this objective consists of survey data collection (e.g., cohort journaling), which occurs through student completion of an electronic journal form with items related to project outcomes. Specifically, we included items to measure performance in these three objectives when we ask students to indicate the number of sessions or workshops that they attended in the past month, including the number of supplemental lab sessions, the number of academic advising sessions, and the number of academic workshops. As part of the journaling process, students complete and submit an electronic journal entry by the end of every month. Once submitted, data extracts in Excel occur, after which a tabulation of the aggregate number of counseling sessions are per-formed. Finally, we plan to continue student journaling so that we can continue monitoring and reporting actual performance data for all three measures in the performance report for next year’s project period.
Evaluation Data Sources and Methods for the Objective
Quantitative Data Sources and Data Collection Procedures for Performance Measure 10a
For Cohort 1 (Spring 2012), data collection for the first performance measure (10a) consisted of 9 AIMS2 Cohort 1 participants for second interviews in Spring 2013. AIMS2 participant from Cohort 1, and 7 AIMS2 participants from Cohort 2 participating in Summer 2013 interviews. We selected the participants using a mixed sampling strategy of criterion and stratified purposeful sampling. Specifically, we employed a criterion sampling to select participants that met specific criteria for participating in the AIMS2 program. The criteria that we used to select interviewees mirrored the criteria for participation in the AIMS2 project, which include transfer status as a student from a Hispanic group and/or group that is economically, educationally and environmentally disadvantaged and is a declared STEM major enrolled full time in CECS programs. Additional criteria for inclusion in the interviews map to project participation requirements, including the following: (a) pass all courses enrolled in each semester; (b) continue to be a declared STEM major; (c) enroll in a minimum of 12 units each semester; (d) earn a grade of "C+" or better in each class enrolled; and (e) participate in all components of the program. As part of the mixed sampling strategy, in addition to the criterion strategy described above, we employed a stratified purposeful sample. As such, we selected 9 participants from Cohort 1 for a second round of interviews in Spring 2013 with a stratification based on gender, ethnicity, and program major. That is, we reviewed the full roster of AIMS2 students in Cohort 1 and Cohort 2 and selected female participants first, as they were represented less in number. Additionally, we worked to ensure female participation and inclusion in all interviews. Then, we selected female participants according to their ethnicity and major. After selecting female participants, we selected male participants based on their ethnicity and major. The goal of this sampling strategy was to create strata to diversify the majors and obtain a sample of at least one student within each major offered through the respective departments in the college. In terms of gender, the final sample for the Spring 2013 interviews for Cohort 1 consists of 4 females; 5 males from Cohort 1. With respect to ethnicity, the final sample for Cohort 1 Spring 2013 second interviews has 1 Hispanic/Latino female; 5 Hispanic/Latino males; 2 Middle-Eastern females; and 1 Persian-Ecuadorian male. In addition, the final Cohort 1 Spring 2013 interview sample consists of major courses of study across engineering and computer science fields, including the following distribution: 2 Mechanical Engineering (2 females); 2 Computer Science and Applied Mathematics (1 female and 1 male); 1 Computer Engineering (1 female); 3 Civil Engineering (male); and 1 Construction Management (male). Using the same selection criteria, 7 participants from Cohort 2 and 1 participant from Cohort 1 were interviewed Summer 2012 term during applicant interviews. During the interview process, we asked cohort applicants the number of faculty research-related sessions that they had in the Fall 2011 term (one term prior to program entry) and Spring 2012 term (one term prior to program entry). We found that neither Cohort 1 or Cohort 2 students had participated in a faculty research session prior to the interview. Accordingly, the Cohorts 1 and 2 project target for the first performance measure is one student, an increase of over 50% of the baseline figure. The actual project target for Cohort 1 is 1/30 and for Cohort 2 is 1/29. Data collection to measure actual performance on these two performance measures consists of a combination of document data and survey/questionnaire data collection (e.g., structured journaling), which occurs through student completion of a web-based journal form with items related to project objectives. Specifically, we included items to assess performance on measure 10a of this objective when we ask students to indicate the number of faculty research sessions that they attended in the past month. Once submitted, we extracted data from journal entries into Excel, after which we tabulated the aggregate number of research-related sessions with faculty.
Interview Data Sources and Sample for Performance Measure 10b
The data sources that we used for performance measure 10b consisted of 9 AIMS2 Cohort 1 participants for second interviews in Spring 2013, 1 AIMS2 participant from Cohort 1, and 7 AIMS2 participants from Cohort 2 participating in Summer 2013 interviews. We selected the participants using a mixed sampling strategy of criterion and stratified purposeful sampling. Specifically, we employed a criterion sampling to select participants that met specific criteria for participating in the AIMS2 program. The criteria that we used to select interviewees mirrored the criteria for participation in the AIMS2 project, which include transfer status as a student from a Hispanic group and/or group that is economically, educationally and environmentally disadvantaged and is a declared STEM major enrolled full time in CECS programs. Additional criteria for inclusion in the interviews map to project participation requirements, including the following: (a) pass all courses enrolled in each semester; (b) continue to be a declared STEM major; (c) enroll in a minimum of 12 units each semester; (d) earn a grade of "C+" or better in each class enrolled; and (e) participate in all components of the program. As part of the mixed sampling strategy, in addition to the criterion strategy described above, we employed a stratified purposeful sample. As such, we selected 9 participants from Cohort 1 for a second round of interviews in Spring 2013 with a stratification based on gender, ethnicity, and program major. That is, we reviewed the full roster of AIMS2 students in Cohort 1 and Cohort 2 and selected female participants first, as they were represented less in number. Additionally, we worked to ensure female participation and inclusion in all interviews. Then, we selected female participants according to their ethnicity and major. After selecting female participants, we selected male participants based on their ethnicity and major. The goal of this sampling strategy was to create strata to diversify the majors and obtain a sample of at least one student within each major offered through the respective departments in the college. In terms of gender, the final sample for the Spring 2013 interviews for Cohort 1 consists of 4 females; 5 males from Cohort 1. With respect to ethnicity, the final sample for Cohort 1 Spring 2013 second interviews has 1 Hispanic/Latino female; 5 Hispanic/Latino males; 2 Middle-Eastern females; and 1 Persian-Ecuadorian male. In addition, the final Cohort 1 Spring 2013 interview sample consists of major courses of study across engineering and computer science fields, including the following distribution: 2 Mechanical Engineering (2 females); 2 Computer Science and Applied Mathematics (1 female and 1 male); 1 Computer Engineering (1 female); 3 Civil Engineering (male); and 1 Construction Management (male). Using the same selection criteria, 7 participants from Cohort 2 and 1 participant from Cohort 1 were interviewed Summer 2012 term during applicant interviews. During the interview process, we asked cohort applicants the number of faculty research-related sessions that they had in the Fall 2011 term (one term prior to program entry) and Spring 2012 term (one term prior to program entry). We found that neither Cohort 1 or Cohort 2 students had participated in a faculty research session prior to the interview. Accordingly, the Cohorts 1 and 2 project target for the first performance measure is one student, an increase of over 50% of the baseline figure. The actual project target for Cohort 1 is 1/30 and for Cohort 2 is 1/29. Data collection to measure actual performance on these two performance measures consists of a combination of document data and survey/questionnaire data collection (e.g., structured journaling), which occurs through student completion of a web-based journal form with items related to project objectives. Specifically, we included items to assess performance on measure 10a of this objective when we ask students to indicate the number of faculty research sessions that they attended in the past month. Once submitted, we extracted data from journal entries into Excel, after which we tabulated the aggregate number of research-related sessions with faculty.
Interview Data Collection Instruments and Procedures for Performance Measure 10b
The primary instrument that we used to collect data from Cohort 1 and Cohort 2 participants was an interview protocol. We designed the interview protocol to collect descriptive data related to the cohort students' participation and experiences of research interests and skills. We asked the cohort participants to respond to the following main question to guide the conversation: Talk about your experiences participating in research projects with your faculty mentor in the AIMS2 program. In addition to this main question, we asked follow-up and probing questions, including the following: What have you done for the research project? How has participating in the research project changed you? How does participating in this project help you in your academic career? How does participating in the research project help you in your professional career? In addition to these main questions, we asked the participants to reflect on their experiences participating in research projects with their faculty mentor in the AIMS2 program. Specifically, we asked the participants to reflect on their experiences participating in research projects with their faculty mentor in the AIMS2 program. In addition to these main questions, we asked the participants to reflect on their experiences participating in research projects with their faculty mentor in the AIMS2 program. Specifically, we asked the participants to reflect on their experiences participating in research projects with their faculty mentor in the AIMS2 program. In addition to these main questions, we asked the participants to reflect on their experiences participating in research projects with their faculty mentor in the AIMS2 program. Specifically, we asked the participants to reflect on their experiences participating in research projects with their faculty mentor in the AIMS2 program.
Description of Preliminary Findings Related to the Objective

Overall, given that student journaling began in February 2012 for Cohort 1 and August 2012 for Cohort 2, continuing through the current performance period and that student interviews took place over the Summer 2012, Spring 2013, and Summer 2013 terms, we are reporting actual performance data for both measures for the second project year. In addition to the procedures described above, student interviews are used here to assess the second performance measure (10b). For this performance period, we used these two procedures to support a mixed-methods approach with the collection of both quantitative and qualitative data.

Preliminary Findings for Cohorts 1 and 2: Performance Measure 10a

For both Cohorts 1 and 2, actual performance data for this first measure indicate that we have achieved this part of this objective. In fact, during the current performance period, over half of Cohort 1 participants (n=17) reported engagement in faculty research, which represents 57% of all Cohort 1 participants and an increase over the number of Cohort 1 participants (n=17) who engaged in faculty research during the previous performance period. Interestingly, an equal number of Cohort 2 participants (n=17) reported involvement in faculty research, a figure which represents 59% (17/29) of all Cohort 2 participants. As a result, actual performance data related to this performance measure (10a) of this objective demonstrate that we have exceeded the project target (n=1) and achieved this part of this objective for both cohorts.

Preliminary Findings for Cohorts 1 and 2: Performance Measure 10b

In terms of the second performance measure (10b)—which measures the improvement of research skills and interest in research—actual performance data indicate that cohort students (in Cohorts 1 and 2) participated in a variety of research activities during the period. These activities included research work on a Formula SAE racing vehicle, research in computer science applications and software designs, and rebuilding an engine and related thermal dynamics designs. When we examined the effects of participating in faculty research projects on cohort participants, we found a strong, positive influence. Specifically, we found that interviewees characterized their experiences as shaping a sense of accomplishment as they continued in the research started by previous students. One cohort participant supported this statement by saying, "I feel positive and more confident in my research." Another cohort participant remarked: "[Redacted] is creating an [redacted] and [redacted] is showing me how to do it." As a result of his connection to a faculty mentor in the project, one interviewee obtained a research position. We encountered another cohort participant who stated that their research will help me find a good job and lead to career opportunities. Another cohort participant remarked: "[Redacted] has made me look differently at myself, what I can do and where I can go with what I am learning." In this capacity, relationships with faculty mentors have led to career opportunities, summer internships, unique research within the various STEM fields, and opportunities to participate in conferences related to specific disciplines. To view success stories from cohort participants as a function of their participation in faculty research, please see the Student Accomplishments section of the project web site that is updated regularly with information on accomplishments: http://www.eecs.csun.edu/aims2/student_accomplishments.html.

While interviewees reported an overall sense of accomplishment from their participation in faculty research, a few interviewees shared challenges with faculty research projects. The two reasons that students cited as barriers to faculty research participation related to time and conflicts with competing activities. On this point, one student reported "I didn't have time because he or she had "no time." Clearly, this student had time constraints that prevented him or her from participating. A second student agreed: "I haven't really participated in any research...I have work and the classes are difficult." Another student shared that a competing activity prevented participation in faculty research: "There is a summer research project that was offered, but I have the internship that I chose to do instead."

Finally, one student shared that he or she had not been asked to participate in a summer research project: "I would be interested in taking on a research project but I never been asked."

Overall, even with the comments from these few students referenced above, students who participated in research with faculty mentors generally felt that their time involved in these projects prepared them academically for their classes. Illustrating this point, one cohort participant stated, "After participating in the research projects, I felt better about my classes, I understood the material more." Another chimed in: "I understand how the classes and my research are the same and are different." Yet another cohort participant shared that "[working on the [redacted] helps me to learn concepts." Quite simply, one participant said: "while working on the [redacted] I felt I was helping the program and the university." When we looked more closely at how participating in faculty research supported their academic performance, we discovered that these activities afforded them opportunities to be presented with typical problems and solutions in their fields. For example, one cohort participant working on a project stated simply, "I was learning techniques used in the field." Another student responded: "I have also met alumni who could help me too." Another student respond-ed: "My research will help when I finish CSUN and I can use my experiences for my resume." Finally, participants felt that their involvement in the research activities and projects presented them with a practical skill set for their academic studies and careers after graduation. In one student’s response, he shared: "Being in a group teaches me skills. It helps me to be a part of a group." Another student shared: "[Doing research with [redacted] helped me to think critically about my future career." When we asked about how research participation transferred to conference/competition participation, one female student reflected: "Attending a national conference gave me confidence. Before I was really scared to talk in front of a big group, but going to the [redacted] conference, I felt better about myself and the work I was doing." And another student shared: "I like working with my peers who are in the cohort. We meet outside of the research project just to sit and discuss the work I was doing." Still another student reported that, “My experience with the [redacted] competition was really exciting and I met people in the industry. This research part is good for me and my future." One student added that, "Research experience helps with career and my individual work presentations." Similarly, a cohort participant shared: "I was presenting my research to other people across the country and felt I had accomplished something really big."

Description of Project Activities Related to the Objective

During the current performance period, faculty mentors worked to develop research-related activities with Cohort 1 and Cohort 2 (formed in Fall 2012) participants. Current and/or planned activities that faculty mentors considered for Cohort 1 and Cohort 2 participants during the period include projects in one of their instructional labs and/or research labs, and participation in related student professional events, networking, and competitions. Further, faculty mentors facilitated research project group coordination and meetings (including the recruitment of cohort participants for summer research) as part of their faculty mentor sessions with cohort participants. The Summer 2013 research projects with faculty mentors included the following:

- Professors Stewart Prince and Bob Ryan: "Wind Tunnel Testing Summer Research"
- Professors Behzad Bavarian:"Alternative Battery-BioTech Project" with 6 CSUN students, 1 GCC student, 1 COC student
- Professors Bruno Osorno and Professor Korouch: "SMART GRID project" with 2 CSUN students, 1 GCC student, 1 COC, and 1 Mission Community College student
- Professor Gloria Melara: "Collaborating and Modeling Android computer game Summer Project" with 2 CSUN students and 4 GCC students

Other project activities that facilitated cohort participation in faculty research activities included small group mentoring sessions with faculty mentors, individual faculty mentoring appointments, participation in CSUN’s Tech Fest (2/19/13) and Senior Design Project Showcase (4/19/13), and introduction to an appropriate professional society student chapters in the discipline of the faculty mentor.
Plans to Use of Performance Data to Monitor Progress

With actual performance measure data for both measures in this project objective for this period, we have reported baseline and actual performance measure in this report. As a result, we plan to continue to monitor progress on both performance measures through use of structured journaling in Moodle and student interviews planned for next year. During the next performance period, discussions of results from both data collection procedures will support the monitoring or progress of this objective.
Check if this is a status update for the previous budget period.

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<thead>
<tr>
<th>Performance Measure</th>
<th>Measure Type</th>
<th>Quantitative Data</th>
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</thead>
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<td>11.b Cohort 2 (Fall 2012) Improve the quality of interactions between CSUN students and faculty in STEM field</td>
<td>Target Raw Number Ratio %</td>
<td>Actual Performance Data Raw Number Ratio %</td>
</tr>
<tr>
<td>842 / 842 100</td>
<td>1071 / 842 127</td>
<td></td>
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<tr>
<td>11.b Cohort 1 (Spring 2012) Increase by 90 percent the frequency of student-faculty interactions over the 2010-11 baseline rate***</td>
<td>Note that the performance measures for this objective have been disaggregated from the original performance measure for reporting purposes only. **Note that in all components of the program. As part of the mixed sampling strategy, in addition to the criterion strategy described above, we employed a stratified purposeful sample. As such, we select-ed 9 participants from Cohort 1 for a second round of interviews in Spring 2013 with a stratification based on gender, ethnicity, and program field.</td>
<td>Project Raw Number Ratio %</td>
</tr>
<tr>
<td>181 / 181 100</td>
<td>597 / 181 330</td>
<td></td>
</tr>
</tbody>
</table>

**Note that the performance measures for this objective have been disaggregated from the original performance measure for reporting purposes only.**

**Explanation of Progress (Include qualitative data and data collection information)**

Evaluation Data Sources and Methods for the Objective

Quantitative Data Sources and Data Collection Procedures for Performance Measure 11a

During the current performance period, we employed both structured journals and interviews to assess the two performance measures of this objective with both Cohort 1 and Cohort 2 participants. These two data collection procedures represent a mixed-methods approach with the collection of both quantitative and qualitative data. In the student journals, guided by a set of close- and open-ended items, we asked respondents to indicate the number of interactions during the month and the types of interactions, including in-class interaction, faculty office hours, email contact, phone contact, Moodle interaction (online), supplemental lab session, faculty research session, individual mentor appointment, group mentor meeting, on-campus project event, off-campus project event, or other event. Further, we asked cohort participants to describe their interactions with their faculty mentor during the month. In addition to structured journaling, we conducted cohort participant interviews in Spring 2013 and Summer 2013, which we detail below.

Interview Data Sources and Sample for Performance Measure 11b

The data sources that we used for performance measure 11b consisted of 9 AIMS2 Cohort 1 participants for second interviews in Spring 2013, 1 AIMS2 participant from Cohort 1, and 7 AIMS2 participants from Cohort 2 participating in Summer 2013 interviews. We selected the participants using a mixed sampling strategy of criterion and stratified purposeful sampling. Specifically, we employed a criterion sampling to select participants that met specific criteria for participating in the AIMS2 program. The criteria that we used to select interviewees mirrored the criteria for participation in the AIMS2 project, which include transfer status as a student from a Hispanic group and/or group that is economically, educationally and environmentally disadvantaged and is a declared STEM major enrolled full time in CECS programs. Additional criteria for inclusion in the interviews map to project participation requirements, including the following: (a) pass all courses enrolled in each semester; (b) continue to be a declared STEM major; (c) enroll in a minimum of 12 units each semester; (d) earn a grade of "C+" or better in each class enrolled; and (e) participate in all components of the program. As part of the mixed sampling strategy, in addition to the criterion strategy described above, we employed a stratified purposeful sample. As such, we select-ed 9 participants from Cohort 1 for a second round of interviews in Spring 2013 with a stratification based on gender, ethnicity, and program field. That is, we reviewed the full roster of AIMS2 students in Cohort 1 and Cohort 2 and selected female participants first, as they were represented less in number. Additionally, we worked to en-sure female participation and inclusion in all interviews. Then, we selected female participants according to their ethnicity and major. After selecting female participants, we selected male participants based on their ethnicity and major. The goal of this sampling strategy was to create strata to diversify the majors and obtain a sample of at least one student within each major offered through the respective departments in the college. In terms of gender, the final sample for the Spring 2013 interviews for Cohort 1 consists of 4 females; 5 males from Cohort 1. With respect to ethnicity, the final sample for Cohort 1 Spring 2013 second interviews has 1 Hispanic/Latino female; 5 Hispanic/Latino males; 2 Middle-Eastern females; and 1 Persian-Ecuadorian male. In addition, the final Cohort 1 Spring 2013 interview sample consists of major courses of study across engineering and computer science fields, including the following distribution: 2 Mechanical Engineering (2 females); 2 Computer Science and Applied Mathematics (1female and 1 male); 1 Computer Engineering (1 female); 3 Civil Engineering (male); and 1 Construction Management (male). Using the same selection criteria, 7 participants from Cohort 2 and 1 participant from Cohort 1 were interviewed Summer 2013. The final sample for the Summer 2013 interviews consists of 3 females from Cohort 2; 4 males from Cohort 2; and 1 male from Cohort 1. With respect to ethnicity, the final Summer 2013 interview sample has 1 African-American male; 1 Filipino-Ecuadorian male; 2 Hispanic/Latino males and 1 female Hispanic/Latino; 1 Middle-Eastern female; 1 Mexican-Filipino female; and 1 Asian male. In addition, the Summer 2013 interview sample consists of major courses of study across engineering and computer science fields, including the following distribution: 2 Electrical Engineering (males); 1 Computer Information Technology (male); 1 Construction Management Technology (female); 2 Mechanical Engineering (male); 1 Civil Engineering (female); and 1 Manufacturing Systems Engineering (female).

Interview Data Collection Instruments and Procedures for Performance Measure 11b

The primary instrument that we used to collect data from Cohort 1 and Cohort 2 participants was an interview protocol. We designed the interview protocol to collect descriptive data related to the cohort students’ interactions with faculty. We asked the cohort participants to respond to the following main questions to guide the conversation, in addition to follow-up and probing questions: Describe two recent interactions with a faculty member in engineering or computer science. Walk through the steps of the interaction from beginning to end. Describe an interaction with your AIMS2 faculty mentor that you consider positive. Walk through the steps of the interaction from beginning to end. Give the details of the interaction. Describe how your interactions with the faculty mentor have changed since being in the AIMS2 program. In contrast, describe an interaction with a faculty member that you consider negative. Walk through the steps of the interaction from beginning to end. Describe how your interactions with faculty have changed since being in the HSI-STEM program. With the interview protocol, we conducted one-on-one, 60-minute personal interviews with Cohorts 1 and 2 participants, who we invited to participate in the interviews through email. Once we received their response, we set a mutual time for the interview. The Dean’s office arranged a secure, quiet room available for the interviews, which we conducted during the Spring 2013/Summer 2013 terms.
After the interviews, we assigned each cohort participant a two digit random number. During the interview session, we read an informed consent form aloud to the participants and audio-recorded the session. Upon completion of the interviews, we transcribed the audio files into a transcribed data file. After producing transcribed data files, the recorded audio files were destroyed. We stored the transcribed files on a password-protected, secure laptop. In addition, we stored hard copies of transcribed data files in brown envelopes with their identifying two digit numbers visible within a secure filing cabinet accessible only to the evaluators.

Interview Data Analysis Procedures for Performance Measure 11b

After transcription, coding and thematic data analysis commenced. We conducted primary analysis through ATLAS.ti, a computer-aided qualitative data analysis soft-window. Specifically, we used codes that emerged from the ATLAS.ti analysis and from codes developed in hard copy transcribed data files. We then categorized the themes that emerged from codes that we clustered according to experiences and interactions of the cohort participants. These categories were used to align thematic findings to the performance measures associated with program objectives. Finally, we extracted direct quotes from interviewees to illustrate themes and support overall findings from data analysis and interpretation.

Description of Preliminary Findings Related to the Objective

Preliminary Findings for Cohorts 1 and 2: Performance Measure 11a

To support the development of cohort baseline figures for the first performance measure, during the Cohort 1 (formation in Spring 2012) and Cohort 2 (formation in Fall 2012) the study asked interviewers for interaction data. We tallied the number of interviews-faculty interactions that they had in the Fall 2011 (Cohort 1) and Spring 2012 (Cohort 2). Results from interview responses suggest that students in Cohort 1 logged a total of 443 separate interactions with faculty in Fall 2011 prior to cohort entry in Spring 2012 and students in Cohort 2 recorded 95 discrete interactions with faculty in Spring 2012 prior to cohort formation in Fall 2012. These figures represent the respective cohort baseline data for the first performance measure (11a) and set the respective project targets of 842 (Cohort 1) and 181 (Cohort 2) total interactions between students and faculty mentors. To examine actual performance data for the first measure (11a), we calculate the total number of faculty-student interactions within a specific performance period. For the current performance period, we find an increase of the number of interactions (n=634) reported during the previous performance period and exceed the project target (n=482) for Cohort 1 on this measure. Meanwhile, Cohort 2 students recorded a total of 597 interactions with faculty during this period, which clearly indicates that Cohort 2 surpassed the project target of 181 interactions. These figures (n=1,071 for Cohort 1 and n=507 for Cohort 2) represent increases over the respective baseline figures (n=443 for Cohort 1 and n=95 for Cohort 2) for both cohorts and demonstrate achievement of the performance measure to increase student-faculty interaction by 90% for both cohorts.

Preliminary Findings for Cohorts 1 and 2: Performance Measure 11b

The second performance measure (11b) relates to the quality of student-faculty interaction, which required us to collect textual data from interviews with cohort participants. Over the past year, we can report from interview data analysis that—on the whole—cohort participants reported positive interactions with faculty. Indeed, results from data analysis indicate that all eight students interviewed shared positive interactions with faculty mentors, particularly with faculty being responsive to their academic needs. In fact, one cohort participant stated, "My faculty mentor is very helpful and is always willing to listen." Another cohort participant stated, "I see my mentor a lot but sometimes [redacted] is friendly and we just talk but other times [redacted] is serious." Still another student expressed how he appreciates the availability of faculty mentors by stating, "I had a conflict with his office hours, but when I talked to [redacted] in class, we were able to work a time to meet that was different than [redacted] office hours." With more practical considerations, cohort participants expressed that their faculty mentor was willing to help, provide support, and advise them with course selection and major field of study. Still other cohort participants shared that they "find the instructors very approachable" and "friendly," including one student who said, "I have a question, they answer them and help me." Another student reported, "The interaction with the professors help me to augment what I am learning in class. They have been great to me." One student continued: "My interactions with faculty mentors help me to learn a lot of new stuff and they just help a lot. My participation in the [redacted] project has given me some ideas towards a career and also helped me in classes." On this point, one cohort participant stated, [Redacted] helped to select my courses from my senior year into the Masters' program. All I have to do is to select a specialty." In addition, students felt that their faculty mentor was instrumental in career development. For example, one student shared, "My faculty mentor knows about internships and research projects I can get involved in." A cohort participant stated, "My faculty mentor helped me to prepare for what a career is like as an engineer.

Another component of faculty-student interaction that we found in participant responses relates to faculty-cohort group meetings. Specifically, faculty-cohort group meetings were positively perceived by students in facilitating more frequent interaction with faculty mentors, helping in meeting other cohort participants (peer-peer interaction), and talking about challenges with classes and the program. To this point, one student stated, "I go to the [redacted] meetings and they helped me to meet other cohort members." Likewise, another student commented about faculty-cohort group meetings as such: "They are great...I do better in my classes now because my faculty mentor helps us study for classes and finals." Another cohort participant said, "Faculty mentors help us to manage our notes and exchange study information when we are in the [redacted] groups." Another student reflected, "The face-to-face meetings with my faculty mentor has been great. I get my questions answered and also get extra information that I need."

While vast majority of students reflected on the positive effects of interaction with their faculty mentor, a few students felt that they did not have effective contact with faculty. Here, one student stated, "The advising from the faculty is not good. That’s the only time I would interact with them but I get my information from other friends or my peer mentor. Don’t really speak on a personal level." After a change in faculty mentors, another student noted: "My faculty mentor left. They don’t know me by name. I see them but they don’t speak to me directly. The interactions haven’t changed." Both of these students noted that faculty tended to not speak to them directly or personally, which seemed to contribute to a sense of disconnectedness or distance between students and faculty.

Overall, the effects of faculty mentor-cohort participant interaction can be summed up by this student’s statement: "Before becoming to the AIMS2 Program I hadn’t had much advising with picking out courses, but since I started AIMS2 I see my faculty mentor a lot." He continued: "My faculty mentor is like a parent-tough love. [Redacted] tells me that right path, [Redacted] tells me exactly what I have to do." Another student talked about his relationship with his faculty mentor, sharing: [Redacted] gives me advice and shows me how to manage my time." Yet another student felt: "My faculty mentor changed my attitude about homework, changing my bad habits, and volunteering with other people involved in my major."

Description of Project Activities Related to the Objective

Overall, project activities are intended to facilitate frequent and quality student-faculty interaction in the current performance period. To that end, faculty mentors met with their cohort participants early in the Spring 2012 term (Cohort 1) and early Fall 2012 term (Cohort 2) to establish a faculty mentoring relationship, plan project activities, and to design research activities. More specifically, faculty mentoring with cohort participants facilitated the development of the peer tutormentor relationship, and prepared cohort participants for college life. In addition, faculty mentoring relationships tend to facilitate more frequent communication with cohort participants through multiple modes of communication such as email messages and phone calls. One result of these exchanges: students secured permission numbers for closed classes for more participants. More broadly, the AIMS2 project presented the Summer 2013 research projects to the Cohort 2 and in-coming Cohort 3 during cohort orientations (11/15/13 and 1/23/13) and faculty mentors to interact with students in the AIMS2 Cohort. In addition, AIMS2 socials (which occurred on 12/5/13 and 5/30/13) supported interaction with faculty mentors. Finally, the new iPad initiative may have facilitated contact between faculty and students—as Cohort 1 students reported using the iPad an average of 9 times per month for instruction in August 2013 and 111 times on average in September. The figures for Cohort 2 are even greater: 20 times on average in August and 126 times on average in September. We should note that as upcoming events and activities approached, they were included on a calendar on the project’s website (http://www.ecs.csun.edu/aims2/) under the “Upcoming Events” and “Field Trips” pages.

Plans to Use of Performance Data to Monitor Progress

During the current performance period, data collection for both performance measures (11a/11b) demonstrates substantive progress toward achieving this project objective. In order to provide information to student journaling and student interviews from Spring 2013/Summer 2013, we have presented actual performance data for both measures to the project team. Further, we have used results from data collection in both Moodle and interviews to monitor progress in meeting the objectives. Specifically, we have used Moodle cohort participant journal results to assess further progress on the first performance measure (11a) and student interviews to evaluate progress on the second performance measure (11b). During the next performance period, our plans to use data collected through these procedures include discussion as a formative evaluation of project and student progress. Specifically, we plan to present data collected through cohort participant interviews in addition, we plan to continue to ask faculty mentors to record their reflections about faculty mentoring. On this note, comments from faculty mentors during this reporting period include: "Weekly meetings work well and I would not change them. What needs to improve is the time management of the students." Another faculty mentor reported: "As the AIMS2 Program progresses the students are becoming more familiar with the system 'and require less supervision. Faculty mentors also reported their experiences to students in the programs on the role led to writing skills, leadership skills, and cohort relationships. Another cohort participant wrote, "I do not schedule weekly meetings, as my Cohort is large. I think the model I use for mentoring works well for students who take little initiative to get involved, but it doesn’t force them to become involved."
Project Objective: 12. Enhance the peer environment of CSUN students in STEM fields

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<th>Performance Measure</th>
<th>Measure Type</th>
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<tbody>
<tr>
<td><strong>12.a Cohort 1 (Spring 2012)</strong> Increase by 30 percent the number of CSUN students who participate in a cohort model over the 2010-11 baseline number*** *Note that the performance measures for this objective have been disaggregated from the original performance measure for reporting purposes only. **Note that in the ratio columns of the target and actual performance data &quot;the numerator represents the numerical target (e.g., the number of students that are expected to attain proficiency) or actual performance data (e.g., the number of students that are expected to attain proficiency), and the denominator represents the universe (e.g., all students served)” (Instructions for Grant Performance Report, p. 7). ***Upper row represents data for Cohort 1 (Spring 2012) and lower row represents data for Cohort 2 (Fall 2012)</td>
<td>Project</td>
<td>Raw Number</td>
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<tr>
<td><strong>12.a Cohort 2 (Fall 2012)</strong> Increase by 30 percent the number of CSUN students who participate in a cohort model over the 2010-11 baseline number*** *Note that the performance measures for this objective have been disaggregated from the original performance measure for reporting purposes only. **Note that in the ratio columns of the target and actual performance data &quot;the numerator represents the numerical target (e.g., the number of students that are expected to attain proficiency) or actual performance data (e.g., the number of students that attained proficiency), and the denominator represents the universe (e.g., all students served)” (Instructions for Grant Performance Report, p. 7). ***Upper row represents data for Cohort 1 (Spring 2012) and lower row represents data for Cohort 2 (Fall 2012)</td>
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<td><strong>12.c Cohort 2 (Fall 2012)</strong> Increase by 30 percent the number of CSUN students who participate in peer mentoring over the 2010-11 baseline number*** *Note that the performance measures for this objective have been disaggregated from the original performance measure for reporting purposes only. **Note that in the ratio columns of the target and actual performance data &quot;the numerator represents the numerical target (e.g., the number of students that are expected to attain proficiency) or actual performance data (e.g., the number of students that attained proficiency), and the denominator represents the universe (e.g., all students served)” (Instructions for Grant Performance Report, p. 7). ***Upper row represents data for Cohort 1 (Spring 2012) and lower row represents data for Cohort 2 (Fall 2012)</td>
<td>Project</td>
<td>Raw Number</td>
</tr>
<tr>
<td><strong>12.d Improve the quality of peer-peer interaction <em>Note that the performance measures for this objective have been disaggregated from the original performance measure for reporting purposes only.</em></strong></td>
<td>Project</td>
<td>Raw Number</td>
</tr>
</tbody>
</table>

Explanation of Progress (Include qualitative data and data collection information)
Evaluation Data Sources and Methods for the Objective
Quantitative Data Sources and Data Collection Procedures for Performance Measures 12a, 12b, and 12c
For Cohort 1 and Cohort 2, data collection during the performance period for these three measures of this objective includes cohort participant recruitment interviews and cohort participant structured journaling. Specifically, baseline data collection occurred in the Cohort 1 applicant interviews in the late Fall 2011 and early Spring 2012 terms while Cohort 2 conducted applicant interviews in late Summer 2012 session and early Fall 2012. During the interview process, we asked cohort applicants the number of peer-tutoring and peer-mentoring sessions that they had in the previous six months. In addition to data collection for the baseline measures, data collection to measure actual performance on the four measures consists of survey data collection (e.g., cohort journaling) and student interviews. With respect to the former, we included items to assess performance in these measures related to peer-peer interaction. In the journal, we asked cohort participants to indicate the number and types of interactions with peer-mentors, peer-tutors, and fellow cohort participants. The types of interactions under these three categories included: in-class interaction, Moodle interaction (online), email contact, phone contact, text message contact, social media interaction, faculty research session, supplemental lab session, group mentor/tutor session, on-campus project event, off-campus project event, and other event. Once submitted, we created Excel data extracts, which we then aggregated the number of peer tutoring, peer mentoring, and peer-peer interactions across cohorts.
Preliminary Findings for Cohorts 1 and 2: Performance Measures 12a, 12b, and 12c

Overview of Preliminary Findings Related to the Objective

Baseline Data for Cohorts 1 and 2: Performance Measures 12a, 12b, and 12c

Implementation Data Collection Instruments and Procedures for Performance Measure 12d

Interview Data Sources and Sample for Performance Measure 12d

Baseline data for performance measure 12d consisted of 9 AIM2S Cohort 1 participants for second interviews in Spring 2013, 1 AIM2S participant from Cohort 1, and 7 AIM2S participants from Cohort 2 participating in Summer 2013 interviews. We selected the participants using a mixed sampling strategy of criterion and stratified random sampling. Specifically, we employed a criterion sampling to select participants that met specific criteria for participating in the AIM2S program. The criteria that we used to select interviewees mirrored the criteria for participation in the AIM2S project, which include transfer status as a student from a Hispanic group and/or group that is economically, educationally and environmentally disadvantaged and is a declared STEM major enrolled full time in CECS programs. Additional criteria for inclusion in the interviews map to project participation requirements, including the following: (a) pass all courses enrolled in each semester; (b) continue to be on-track and in cohort with an average grade of "C" or better in each class enrolled; and (c) participate in all components of the program. As part of the mixed sampling strategy, in addition to the criterion strategy described above, we employed a stratified purposeful sample. As such, we selected 9 participants from Cohort 1 for a second round of interviews in Spring 2013 with a stratification based on gender, ethnicity, and program major. That is, we reviewed the full roster of AIM2S students in Cohort 1 and Cohort 2 and selected female participants first, as they were represented in less number. Additionally, we worked to ensure female participation and inclusion in all interviews. Then, we selected male participants according to their ethnicity and major. After selecting female participants, we selected male participants based on their ethnicity and major. The goal of this sampling strategy was to create a strata to diversify the majors and obtain a sample of at least one student within each major offered through the respective departments in the college. In terms of gender, the final sample for the Spring 2013 interviews for Co-hort 1 consists of 4 females; 5 males from Cohort 1. With respect to ethnicity, the final sample for Cohort 1 Spring 2013 includes 2 Hispanic/Latino females; 2 Middle-Eastern Hispanic/Latino males; 2 Asian (Chinese and Korean) males; 1 Other (Filipino) female; 2 African-American females; 1 Persian (Turkmen) female; 1 Hispanic/Latino male; and 3 Other (Filipino, Japanese, Korean, and Chinese) students. In total, the final Spring 2013 interview sample consists of 30 students enrolled in engineering and computer science fields, including the following distribution: 2 Mechanical Engineering (2 females); 2 Computer Science and Applied Mathematics (1 female and 1 male); 1 Computer Engineering (1 female); 3 Civil Engineering (male); and 1 Construction Management (male). Using the same selection criteria, 7 participants from Cohort 2 and 1 participant from Cohort 1 were interviewed Summer 2013. The final sample for Cohort 2 Spring 2013 includes 3 females from Cohort 2; and 1 Other (Filipino) female. With respect to ethnicity, the final Summer 2013 interview sample has 1 African-American male; 1 Filipino-Ecuadorian male; 2 Hispanic/Latino males; 1 Persian/Hispanic/Latino male; 1 Hispanic/Latino female; 1 Middle-Eastern female; 1 Mexican-Filipino female; and 1 Asian male. In addition, the 2013 Summer interview sample consists of major courses of study across engineering and computer science fields, including the following distribution: 2 Electrical Engineering (males); 1 Computer Information Technology (male); 1 Construction Management Technology (female); 2 Mechanical Engineering (male); 1 Civil Engineering (female); and 1 Manufacturing Systems Engineering (female).
Preliminary Findings for Performance Measure 12d
For the fourth and final measure (12d)—related to the quality of peer-peer interaction—of this project objective, results from data analysis indicate that overall cohort participants found a peer environment where they enjoyed meeting new people, forming study groups, and working in research groups with other students. When we look at specific types of peer interaction within the context of the project, we find that cohort participants responded well to their general peer-peer interactions. On this point, one cohort participant shared: “I met friends and we took the same classes.” Similarly, a cohort participant stated, “I now have friends I can meet on weekends and study with.” Another student described, “I like working with the same students in my [redacted] group and research group.” Referencing connections to student transfer experiences, one cohort participant said, “I still see my friends from GCC and we have some classes together.” With respect to peer interactions through peer mentoring, cohort participants found a support system in their mentors that served to guide them through their transition to CSUN and through their programs. For example, one cohort participant shared: “At first I was concerned about the difference between peer mentors and peer tutors, but when I found out the difference, my peer mentor helped me to navigate things.” Yet another student stated: “My mentor helped me to turn into a self-starter and to ask for help.” In addition, peer mentors seemed to connect cohort participants to services that extended beyond the initial reach of peer mentors. To sum up the overall impression of cohort participants from their peer mentoring experiences, one interviewee said: “I like my mentor, he is a Masters’ student and he knows a lot.” Finally, with respect to peer-peer interactions related to tutoring, cohort participants were generally pleased with the support. One student shared, “I was glad when we knew who the peer tutors were. I was able to get in touch with them right away and they helped me to study for this one class I was having problems with.” Another student agreed: “They have helped me to get used to the heavy load of my classes.” This student seemed to summarize what others felt about peer tutor: “They are my security blanket.” Another student reflected: “Having had the need for a tutor and it is hard for me to find someone who knows my subject.” Yet another cohort participant stated, “My tutor is great. Whenever I have had a problem they have been there to help me out.” One cohort participant reported, “The peer tutors are good, they know the subject matter and help me especially before tests.” Another cohort participant stated, “I meet with my peer tutor and mentor 3-4 times a week. He gave me tips on the program, classes, and other stuff.”

While students whom we interviewed reported positive overall effects of peer-tutoring, peer-mentoring, and more generally peer-peer interactions, some interviewees re-reported that they had challenges with these peer project components. However, interviewees cited only general issues with peer tutors and/or mentors. On this note, one cohort participant shared how cohort participants organized around each other rather than peer tutors and mentors: “We really don’t use the peer tutors or mentors. We work together in groups to try to help each other out.” Another student noted that he or she did not record much interaction. If they are in my classes and I know them from AIMS, then we might talk, but not really.” A third student shared simply: “I have very little to describe because I didn’t meet with them.” Finally, a student recorded: “They haven’t changed me…I don’t see them as structured interactions.”

Description of Project Activities Related to the Objective
During the performance period, project faculty and staff worked to meet these four project measures of this objective. Specifically, we formed the first (Cohort 1) and second (Cohort 2) cohorts of student participants during the Spring 2012 and Fall 2012 terms, respectively. To support the development of a quality peer environment and frequent peer-peer interaction, we developed both a peer-tutoring component and a peer-mentoring component to the project and peer interaction through both peer- and faculty-mentors. In particular, we continued to advertise, recruit, hire, and train peer tutors from CSUN’s upper-division undergraduate and graduate students in the College of Engineering and Computer Science. In addition to peer tutoring, we conducted training of peer mentors for cohort participants. Finally, to facilitate a strong environment connected to both instructional and faculty research activities, faculty mentors facilitated weekly small group mentor sessions with cohort participants during the period. In addition to supporting student-faculty interaction and student development, these sessions are intended to facilitate peer-peer interaction. Finally, project faculty and staff planned project activities to encourage peer interactions, including on- and off-campus project events like introduction to an appropriate professional society student chapter in the discipline and related activities – technical talks, presentations, student chapter activities etc. and visits with the cohort students from Glendale Community College and College of the Canyons. Finally, the new iPad initiative likely has facilitated contact between peers—as Cohort 1 students reported using the iPad an average of 9 times per month for instruction in August 2013 and 111 times on average in September. The figures for Cohort 2 are even greater: 20 times on average in August and 126 times on average in September.

Plans to Use of Performance Data to Monitor Progress
With monthly student journaling during the performance period and student interviews during the first year, we have reported actual performance data for all four measures in the performance report for the first year of the project period. We have used results from data collection in both Moodle and interviews to monitor progress on all four performance measures related to this objective. In particular, we have used Moodle cohort participant journal results to assess further progress on the first performance three measures (12a-12c) and student interviews to evaluate progress on the final performance measure (12d). During the second project year, we plan to discuss the results of data collection in project meetings and address areas of improvement. Furthermore, while we are not yet prepared to report data from Cohort 3 (formation in Fall 2013) in this report, we can note that we have accepted 9 students from our project partner community colleges (COC and GCC) who participate in a cohort model and plan to report Cohort 3 data in next year’s report.
Section B: Budget Information

Budget Information:

We received $1,096,856 in Year 1 (2011-12) and $1,134,630 in Year 2 (2012-13) for a total of $2,231,486. To date we have expended 78% of the funds that were received. Our Year 2 expenditures totaled $1,134,667. Our projected carry forward amount entering Year 3 is $492,847. We have plans in place to fully utilize these carry forward funds by the expiration of the grant. These plans are described below. In our APR for Year 1 we had described the plans to utilize the available carry forward balance from Year 1 to subsequent years to cover additional costs for faculty release time, clerical support, student research support, and project web site support.

Background: The total requested funding under the solicitation for five years was $5,562,768 including a total of $1,490,915 that was requested by the two supporting community colleges under this proposal. The total budget for Year 1 of the grant was $1,096,856 of which $299,893 was awarded to the two partner community colleges as sub-contractors. The budget for Year 2 of the grant in the amount of $1,134,630 was awarded in November 2012 following the acceptance of the Interim Report in April 2012.

The grant award was announced in October 2011 and as of September 30, 2012 (end of Year 1) we had expended $604,276 of the Year 1 budget. In our original proposal to the US Department of Education we envisioned a start date of July 1, 2011. Given the announcement of the grant award in October 2011 the team organized rapidly to recruit the first cohorts of students from all three institutions by January-February 2012 and put in place the various project activities envisioned under the grant. Thus the first expenditures on the grant began to occur in early Spring 2012.

In summary we anticipate the following expenditures for the projected carry forward funds of $492,847:

Student Stipends for additional cohorts at CSUN, GCC, COC (two years) - $216,000
Faculty release time (additional) - $89,000 (For Dr. Robert Ryan described in detail in APR Year 1)
Faculty release time (additional) - $11,266 (For Dr. Nathan Durdella, Assessment, Year 5)
Clerical Support - $75,000 (estimated at $25,000/year for the remaining 3 years)
Student Research Assistant (additional) - $90,000 (estimated at $30,000/year over the remaining 3 years)
Organizing Conference to share best practices among S. California HSI Grantees - $10,000
Total projected expenditures for utilizing carry forward funds - $491,266

The following paragraphs describe the projected expenditures in detail:

Student Stipends for additional cohorts at CSUN, GCC, COC (two years) - $216,000

The original proposal envisioned two separate cohorts from each of the partner institutions, i.e., 30 students/cohort at CSUN, and 15 students/cohort at GCC and COC respectively for a total of 120 students over the grant period. However, the success of the program has sparked tremendous interest from incoming transfer students in three partner institutions. The project team discussed this at length and decided to support an additional cohort of 60 students (30 from CSUN and 15 each from GCC and COC) to begin in Year 3. Students who are recruited directly into the new CSUN cohort will receive an annual stipend of $2,400 similar to previous cohorts for a period of two years resulting in an anticipated annual expenditure of $72,000 or a total of $144,000 over the two year period. Similarly the students who begin at the community colleges in the new cohorts receive an annual stipend of $1,200 (similar to previous community college cohort students) for a period of two years resulting in an anticipated annual expenditure of $36,000 or a total of $72,000 over the two year period. The total projected expenditure for stipend stipends for the additional cohorts at CSUN, GCC and COC is $216,000.

Faculty release time (additional) - $89,000

We added another faculty member (Prof. Robert Ryan from Mechanical Engineering) given the number of Mechanical Engineering students in the cohort. The total cost for the additional release time (27 units over the duration of the grant) for Prof. Ryan including benefits is estimated to be approximately $89,000.

Faculty release time (additional) - $11,266

The faculty member from the College of Education responsible for project assessment was originally scheduled to receive 3-units of release time in years 1 and 5, and 6-units of release time in years 2 through 4. He was also scheduled to receive 2 months of summer salary during the grant period. Based on the assessment and project evaluation work during the period from January - April 2012 and the preparation of the Interim Performance report in April 2012, it became evident that he would need additional release time over the budgeted 6 units for Year 2 and Year 5 of the grant to complete the project tasks. The second cohort of students was recruited at all three institutions in fall 2012 and it is necessary to keep them distinct and separate for project analysis and performance comparison purposes. Since Year 2 funding was yet to be announced in April 2012, we covered the cost of the 3 units of additional release time for fall 2012 of approximately $10,300 by reducing his summer salary for Year 1 from 3 months, to 2 months to 1 month, to $7,858 (salary plus 8% benefits), leaving us $2,452 short. The shortage was covered from the carry-forward funds in Year 1 and we were able to restore his summer funding to 2 months for Year 2 and beyond. The anticipated cost of the additional 3 units of release time in Year 5 of the grant is $11,266.

Clerical Support - $25,000/year (3 Years - $75,000)

We added clerical support to provide administrative assistance for the project. This was not originally budgeted but it became apparent that we would need this support to accomplish the goals of the project. Some of the duties that are being performed by staff in this category are: Filtering information on cohort students for PI's, Contacting students to set up appointments with Chairs and PIs, maintaining the project web site once it is established to ensure that it is up to date. Other duties include Scheduling meetings, E-mail correspondence, arranging teleconferences for the project team, arrangement of parking, photocopying, compilation of materials, scheduling of rooms, and maintenance of records. Presently Ms. Cindy Barrett and Ms. Kathleen Pohl are providing clerical support. Since our original budget request missed including this category a separate budget category has been created to cover the anticipated expenses under this category. The approximate annual budget for administrative support including benefits is $25,000. Information on Project Staff may be found on the project web site at http://www.ecs.csun.edu/aims2/project_staff.html

Student Research Assistance (additional) - $30,000/year (3 Years - $90,000)

With the addition of the new cohort we anticipate needing additional funds to support students from the cohort group to participate in paid research activities under the supervision of the faculty mentors during the summer. Beginning with 15 students in the first summer of the grant, the program had over 25 students working on research projects during the summer of Year 2. These students worked on the average between 12-15 hours/week during the summer and were paid at the rate of $15/hour.

Organizing Conference to share best practices among S. California HSI Grantees - $10,000

We discussed the idea of organizing a regional conference among the HSI-STEM grantees from S. California to share best practices with our Program Officer (at that time) Peter Fusscas during the HEP Project Directors meeting in Washington DC in March 2013. This is envisioned to be a 1 day conference hosted with partial support from CSU Northridge.

Section C: Additional Information
Intangible benefits

AIMS2 cohort students have been actively engaged in research projects with faculty mentors on a variety of topics in engineering and computer science. This experience has impacted their learning positively and helped build self-confidence. Several students from our cohort have received scholarships and support to attend national conferences sponsored by HACU, HEENAC, and AHSIE. Many students have presented their work at regional and national conferences further enhancing their learning experiences. Locally students from cohort 1 presented their research posters and projects during socials organized to welcome the incoming cohort 2 students from CSUN, GCC and COC. This has been an empowering experience for both groups – inspiring the incoming students while strengthening the communication skills and confidence of the students in cohort 1.

Hearing about the success of our students, we were approached by Los Angeles Mission College (another HSI-STEM award recipient from our region) about some of their students participating in our summer research program. Based on interviews by the faculty mentors we were able to provide research opportunities for four LAMC students during summer 2013. These students were supported by LAMC but benefited from the interaction with our cohort on the summer research projects. Also several cohort students registered and participated in two major conferences hosted at CSUN during summer 2013. CREST 2013 was sponsored by the Energy Research Center in the College and had an impressive array of invited talks on energy storage and renewable energy technology. AOS 2013 was sponsored by the Center for Entrepreneurship and Innovation in partnership with Aerojet Roketdyne and covered an interesting range of topics on innovation.

The AIMS2 iPad initiative that was launched during Year 2 has been very successful in improving collaboration and communication between students in the cohorts. The devices are used by the students extensively in all their classes. The AIMS2 faculty members from CSUN, GCC and COC have been using the iPad’s for collaborative curriculum development. One of the key benefits has been the rapid progress made in addressing the gaps in articulation between the community colleges and CSUN. Although the articulation process itself may take a while to be completed based on the campus academic review protocols, the iPad enabled collaborative curriculum development efforts by the faculty from CSUN, GCC and COC ensures that students transferring into our programs have the background and appropriate pre-requisite content to be successful in upper division courses.

The AIMS2 program has drawn the attention of key industry partners. By way of example, during the past year CSUN’s College of Engineering and Computer Science was selected as a Core University partner by Northrop Grumman Corporation, partially due to the success of the AIMS2 grant in enhancing and supporting the success of under-represented minorities in our disciplines. One of our students, Melissa Flores who won a Tier 1 scholarship to attend the AHSIE 2013 conference in New Jersey, has just been selected for an internship assignment at Northrop Grumman Corporation’s Woodland Hills site. The students in our cohorts really appreciate the difference that this program is making in their lives and several of them are engaged actively in outreach efforts to promote engineering in K-12. In December 2013 we received a request from the Principals of Hart Elementary School and Columbus Middle School in the Canoga Park neighborhood for help and assistance in establishing a robotics program at their school sites. Following conversations with our cohort students we have 8 students who have expressed interest in participating in this effort to work with elementary and middle school students and establish a robotics program. The program is expected to kick off in February 2014 with assistance from CSUN’s Canoga Park Neighborhood Partnership project. CSUN will purchase Vex Robotics kits that will be used in these classrooms under the supervision of the AIMS2 cohort students who will serve as classroom mentors.

Since the inception of the recent HSI-STEM grant we have made huge strides to address the academic needs of students in the cohort that includes proactive academic advising and tracking, organized tutoring, peer and faculty mentoring, hands on research opportunities and project based learning, career advising and eventual transition to the workforce or advanced studies. Students in the cohort are supported with stipends to motivate and inspire them to succeed. Students in the cohort are excelling in their studies, making steady progress towards graduation, and working closely with faculty and peer mentors who provide academic and career guidance as well as opportunities to work on relevant “hands-on” projects. Recent research projects ranged from simulations of civil engineering or construction processes to refurbishing lab equipment that hadn’t been used in a while, the design and fabrication of an intake manifold, and to using an Arduino microprocessor to control a remote-controlled car from a laptop via a Bluetooth interface. Sometimes the projects required improvisation which was an empowering learning experience for the students. AIMS2 also has begun leaving its mark on the community college students. At Glendale Community College, it sparked the creation of a new club, called Supersymmetry, and led to field trips to CSUN and a naval station in San Diego. At College of the Canyons, AIMS² students and faculty have been meeting monthly for updates, creating a real learning community. Two students also were instructors for a junior high summer institute on the campus, teaching aeronautics.

Finally, the WITEC initiative (Wireless Technology Initiative) under this grant is a unique collaborative solution that provides a model that other faculty can adapt to their subject areas; the wireless classroom is a learning laboratory open to participants from the project team who in turn reach and teach interested colleagues, and inform external stakeholders as appropriate. Supported by WITEC, CSUN and community college faculty have also begun meeting to work on articulation between their courses, in order to strengthen and standardize program articulation, which will accelerate transfer students’ progress once they reach the university.

This grant is already having an impact on the academic success and career choices of the talented youth in our region, and ultimately, we hope an enduring impact on the growth and health of California’s economy. As these talented students, who represent both minorities and females, matriculate to the university, they will, in turn, serve as role models for others in their communities. This collaborative partnership between CSUN, GCC and COC will be instrumental in creating a larger, more inclusive pool of STEM graduates.
General Information
1. PR/Award #: P031C11031 2. Grantee NCES ID#: 110608
   (Block 5 of the Grant Award Notification - 11 characters.) (See instructions. Up to 12 characters.)
3. Project Title: CSU, Northridge Engineering and Computer Science HSI-STEM Initiative
   (Enter the same title as on the approved application.)
4. Grantee Name (Block 1 of the Grant Award Notification): THE UNIVERSITY CORPORATION -- ENGINEERING & COMPUTER SCIENCE, CALIFORNIA STATE UNIVERSITY, NORTHRIDGE
5. Grantee Address (See instructions.)
6. Project Director (See instructions.) Name: Dr. S. K. Ramesh Title: Dean
   Ph #: (818) 677 - 4501 Ext: Fax #: (818) 677 - 2140
   Email Address: s.ramesh@csun.edu

Reporting Period Information (See instructions.)
7. Reporting Period: From: 10/01/2011 To: 09/30/2012 (mm/dd/yyyy)

Budget Expenditures (To be completed by your Business Office. See instructions. Also see Section B.)
8. Budget Expenditures
   a. Previous Budget Period
      Federal Grant Funds $604,276.52 Non-Federal Funds (Match/Cost Share) N/A
   b. Current Budget Period
      Federal Grant Funds $157,167.36 Non-Federal Funds (Match/Cost Share) N/A
   c. Entire Project Period
      (For Final Performance Reports only)
      Federal Grant Funds $761,443.88 Non-Federal Funds (Match/Cost Share) N/A

Indirect Cost Information (To be completed by your Business Office. See instructions.)
9. Indirect Costs
   a. Are you claiming indirect costs under this grant? Yes X No
   b. If yes, do you have an Indirect Cost Rate Agreement approved by the Federal Government? Yes X No
   c. If yes, provide the following information:
      Period Covered by the Indirect Cost Rate Agreement: From: To: (mm/dd/yyyy)
      Approving Federal agency: ED Other (Please specify):
      Type of Rate (For Final Performance Reports Only): Provisional Final Other (Please specify):
   d. For Restricted Rate Programs (check one) -- Are you using a restricted indirect cost rate that:
      Is included in your approved Indirect Cost Rate Agreement? Yes X No
      Complies with 34 CFR 76.564(c)(2)?

Human Subjects (Annual Institutional Review Board (IRB) Certification) (See instructions.)
10. Is the annual certification of Institutional Review Board (IRB) approval attached? Yes X No

Performance Measures Status and Certification (See instructions.)
11. Performance Measures Status
   a. Are complete data on performance measures for the current budget period included in the Project Status Chart? Yes X No
   b. If no, when will the data be available and submitted to the Department? 12/31/2012 (mm/dd/yyyy)

12. To the best of my knowledge and belief, all data in this performance report are true and correct and the report fully discloses all known weaknesses concerning the accuracy, reliability, and completeness of the data.
   Scott Perez Title: Director, Research and Sponsored Projects
   Name of Authorized Representative: ________________________________
   Signature: ____________________________ Date: 12/12/2012
The AIMS² (Attract, Inspire, Mentor and Support Students) Program- CSU, Northridge Engineering and Computer Science HSI-STEM Initiative

This collaborative project is lead by the College of Engineering and Computer Science at California State University, Northridge, in partnership with Glendale Community College (GCC) and the College of the Canyons (COC). The primary objectives of the grant are: (1) To increase the number of Hispanic and low-income students who successfully transfer from Glendale Community College and College of the Canyons to California State University to pursue majors in Engineering and/or Computer Science, (2) To increase the number of Hispanic and low-income students who graduate from CSU Northridge with degrees from CECS undergraduate programs, and (3) To develop a model, seamless transfer program to assist Hispanic and low-income students to successfully transfer from Glendale Community College and College of the Canyons, to California State University, Northridge where they will complete their studies in Engineering and/or Computer Science.

The Project Director received notification of the grant award in October 2011. All stakeholders were informed of the award immediately and the team held its first organizational meeting on October 13th. During this meeting, the team focused on the work plan for the project including the key goals and objectives, assessment and reporting and budget. A meeting calendar with regular meeting times was established. Meeting agendas and presentations may be accessed on the project web site at http://www.ecs.csun.edu/aims2/presentations.html. At the first meeting, each member of the team received a project binder with relevant information including complete data on the first time transfer students who entered the College of Engineering and Computer Science at CSUN in the fall 2011 semester.

The team selected AIMS² (Attract, Inspire, Mentor and Support Students) as the name of this collaborative project capturing the key elements of the HSI-STEM grant program and worked with an external consultant to develop and implement a comprehensive project web site which may be accessed at http://www.ecs.csun.edu/aims2/. Internal assessment of the program objectives and outcomes are being conducted continuously by the Program Assessment and Evaluation Committee made up of the PI’s of the grant and the internal program evaluator and reported in detail in Section A. The project webpage is housed on the homepage of the College and is maintained to inform and disseminate progress on achievement of the goals and objectives of the grant. In addition it serves as a common point of interaction for all stakeholders involved in the grant including links to the cohort Moodle site and links to faculty mentors, peer mentors and tutors, and project staff.

The first priority for the team was the recruitment of the students to form the first cohort and the identification of the gaps in articulation in lower division transfer courses between the partner colleges and CSUN. A simple online application was developed to recruit students to the CSUN cohort. All first time transfer students (fall 2011 semester) in the College of Engineering and Computer Science at CSUN received a personal letter informing them of the grant award and inviting them to complete the online application. We received a total of 58 applications. Of these, 47 were deemed to meet the requirements for the grant. These applicants were invited to a personal interview with project personnel in January 2012. The first CSUN cohort of 30 students was selected based on the interviews and the recommendations of the project personnel. The students were notified of their selection and a mandatory orientation meeting with the entire cohort was held on January 20th. This meeting covered the responsibilities of the students in the cohort and introduced them to the faculty mentors and all project staff. Also cohort students completed paperwork to receive their annual stipend. This is distributed in two equal installments to ensure that students are making progress in accordance with the guidelines of the grant. The partner community colleges adapted the online application developed at CSUN and completed the recruitment of their cohorts (15 students from Glendale Community College and 18 students from the College of the Canyons) in February-March 2012.

One of the two major objectives of this grant is to create seamless transfer programs between community colleges and CSUN to enable Hispanic students and other under-represented minorities to successfully transfer to CSUN’s engineering and computer science programs and graduate in a timely manner. The project faculty team from GCC, COC and CSUN has reviewed gaps in the existing articulation agreements between our institutions http://www.ecs.csun.edu/aims2/course_articulation.html and is working to develop curricula to address the gaps. The WiTEC initiative (Wireless Technology Initiative) under this grant is a unique collaborative solution that capitalizes on the past successes of the partners to develop relevant curricula to enable seamless transfers for students in the cohort. After comparing the performance of the tablets from three different vendors the tablet laptops that are used as part of the WiTEC initiative were purchased from HP in January 2012 and secured and maintained by the IT group in the college. The tablets are equipped with commonly used software packages in the college’s academic programs and also include a software package called DyKnow that enables interaction between the users. WiTec allows students in the cohort to...
benefit from the latest pedagogy to enhance their understanding of the rigorous curricula in engineering and computer science and succeed. We expect quicker mastery of difficult, abstract concepts in lower division courses, and improved student performance. Using emerging technologies in the classroom, demonstrating the relevance of theoretical concepts, and linking education to future careers are the strategies that will encourage students in the cohort to persist and graduate. We expect that the proposed teaching and learning innovations will improve measures of teaching effectiveness, student academic performance and retention. With wireless HP Tablet PCs available to faculty in the project team and students in the cohort, she/he can instantly assess understanding through polling and appropriately clarify concepts—a kind of immediate formative assessment of teaching effectiveness with corrective opportunities. We expect to report on our progress on this initiative in subsequent years.

The following is a brief summary of the project activities to date: Thirteen team meetings have been held since grant was announced in October 2011. A Project Website has been established at http://www.ecs.csun.edu/aims2/. The selection of student cohorts for the first cohort was completed in spring 2012. CSUN Peer Mentors http://www.ecs.csun.edu/aims2/peer_mentors.html and Tutors http://www.ecs.csun.edu/aims2/peer_tutors.html were selected based on the needs of the cohort and they are actively working with the cohort students. Faculty mentors http://www.ecs.csun.edu/aims2/faculty_mentors.html meet regularly with their students in the cohort to discuss their academic progress. Other activities for cohort students include, projects in instructional labs, research projects with faculty, introduction to an appropriate professional society student chapter in the discipline and related activities – technical talks, presentations, student chapter activities etc., and participation in college wide events such as Tech Fest, and the Senior Design Project Showcase etc., Other activities include visits between the cohort students from the partner colleges as well as outreach visits by cohort students to other colleges and high schools to raise awareness of the grant and encourage future students. Gaps in course articulation agreements between the partner institutions have been identified and the faculty has been working collaboratively to address them. Based on the preliminary work, the Project Director was invited to make a presentation on “Best Practices in working with Community Colleges” at the 2012 Engineering Deans Institute meeting on April 17th, 2012: http://www.asee.org/conferences-and-events/conferences/edi/2012/program-schedule/EDI_Session_on_Working_with_Community_Colleges.pdf. The WiTec initiative has been launched with the tablet laptops purchased from the grant. We anticipate that WiTEC will create a model that other faculty can adapt to their subject areas; the wireless classroom will become a learning laboratory open to participants from the project team who in turn will reach and teach interested colleagues, and inform external stakeholders as appropriate.

Nominations for the proposed external advisory board http://www.ecs.csun.edu/aims2/advisory_committee.html http://www.ecs.csun.edu/aims2/advisory_committee.html were received from the project team members the first meeting of the board was held in June 2012. Also during summer 2012 we engaged selected students from the cohorts in hands-on research activities with the faculty mentors. This has been a very powerful and empowering experience for the students and is showing dividends in the form of enhanced academic performance. In fall 2012 we completed the recruitment of our second cohort of students at all three institutions and look forward to sharing our work during the HEP Annual meeting in Washington DC in March 2013.

Section A describes in detail the project’s goals and the progress we have made to date in achieving the expected outcomes and performance measures. We have already met or surpassed several of the objectives and anticipate being able to provide additional data as appropriate for relevant outcomes with our next annual performance report that is due on December 31, 2013.
1. Project Objective

Increase the transfer of Hispanic and low-income students from College of the Canyons and Glendale Community College to CSUN in STEM fields

<table>
<thead>
<tr>
<th>1.a. Performance Measure*</th>
<th>Measure Type</th>
<th>Quantitative Data</th>
</tr>
</thead>
</table>
| After two years, increase by 15 the number of Hispanic and low-income students who transfer from College of the Canyons and Glendale Community College to CSUN in STEM fields over the 2010-11 baseline number | **Project** | **Target** | **Actual Performance Data****
| | Raw Number | Ratio | % | Raw Number | Ratio | % |
| | 36 | / | | 65 | / | |

*CSUN institutional data (not project cohort data)
**Baseline data (per Instructions for Grant Performance Report)

Explanation of Progress (Include Qualitative Data and Data Collection Information)

Evaluation Data Sources and Methods for the Objective

During the performance period, we collected both baseline and actual performance data on the single performance measure for this objective. Quantitative data sources for both baseline and actual performance data for this measure are from CSUN institutional data (from CSUN’s Office of Institutional Research). During the period, we worked with CSUN’s Office of Institutional Research to prepare the 2010-11 baseline data on student transfer figures for both College of the Canyons and Glendale Community College and to produce the 2011-12 figures of actual performance data, which mark the end of the first academic year after formation of the student cohort (Cohort 1) participants in the Spring 2012 term. During the performance period, both College of the Canyons and Glendale Community College—as well as CSUN—formed Fall 2012 cohorts of student participants (Cohort 2), and we plan to present data for these cohorts in next year’s report.

Description of Preliminary Findings Related to the Objective

The baseline data for this measure (1a) is from CSUN’s Office of Institutional Research and includes institutional data (i.e., not project cohort data). Accordingly, the baseline data do not correspond to the number of project cohort participants but rather to all students who met the criteria for inclusion in the transfer cohort (see next sentence). The 2010-11 baseline data for all Hispanic and/or low-income (i.e., Pell grant recipients) students who transferred from College of the Canyons and Glendale Community College to CSUN planning to major in a field in the College of Engineering and Computer Science follows: 14 students from College of the Canyons and seven from Glendale Community College, for a total of 21 students from both colleges. Consequently, the target number of Hispanic and low-income students who transfer from College of the Canyons and Glendale Community College by Spring 2014 (two academic years after entry into the current cohort) is 36, which represents an increase of 15 over the 2010-11 baseline number. When we interpret actual performance data against the project target of 36, we find that 65 students transferred from College of the Canyons and Glendale Community College in 2011-12. That is, 65 new CSUN transfer students entered in 2011-12 from College of the Canyons and Glendale Community College planning to major in a field in the College of Engineering and Computer Science. This increase in the number of new transfer students (n=65) represents approximately a 181% increase over the project target (n=36) and a 310% increase over the baseline figure (n=21) from 2010-11. Given these performance data, this project objective has been achieved during the current performance period.
Description of Project Activities Related to the Objective
During the performance period, project faculty and staff worked to support the achievement of this objective through their efforts with cohort participants at College of the Canyons and Glendale Community College. Over the first project year, faculty mentors and project staff completed work to form the student cohorts (Cohorts 1 and 2) at both College of the Canyons and Glendale Community College. Anticipated project activities at both community colleges include tutoring, mentoring, academic excellence workshop (College of the Canyons), textbook award program, joint leadership conference (College of the Canyons), joint outreach efforts (College of the Canyons), and engineering boot camps (College of the Canyons). In addition, project faculty at both CSUN and College of the Canyons/Glendale Community College have worked collaboratively to support early contact and connections between community college students and CSUN, including community college cohort attendance at CSUN’s Project Design Showcase, CSUN’s Tech Fest, and events hosted by and on Glendale Community College’s/College of the Canyon’s campuses for project faculty and students across institutions to attend. Finally, during the performance period, select CSUN, Glendale Community College, and College of the Canyons cohort students participated in CSUN faculty mentor research projects during the Summer 2012 session.

Plans to Use of Performance Data to Monitor Progress
Now that we have both baseline and actual performance data for the performance measure of this objective, we plan to publish the figures from this year’s report on our project’s website (http://www.ees.csun.edu/aims2/) and discuss progress at our project meetings. While we have surpassed the project target for this project objective, as we move forward into the next performance period, we anticipate that the Office of Institutional Research will produce actual student transfer data (as the receiving institution) from the 2012-13 academic year in November-December 2013. Accordingly, we plan to continue data collection to measure this objective include annual secondary data extracts from the Office of Institutional Research for each academic year for Cohort 1 and Cohort 2.
SECTION A - Performance Objectives Information and Related Performance Measures Data (See Instructions. Use as many pages as necessary.)

2. Project Objective  [ ] Check if this is a status update for the previous budget period.

Increase the number of courses that articulate from College of the Canyons and Glendale Community College to CSUN and articulation agreements between College of the Canyons and Glendale Community College and CSUN

<table>
<thead>
<tr>
<th>2.a. Performance Measure*</th>
<th>Measure Type</th>
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<tbody>
<tr>
<td>Increase by 15 the number of STEM courses that articulate over the 2010-11 baseline number</td>
<td>Project</td>
<td>Raw Number</td>
</tr>
<tr>
<td></td>
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</tr>
<tr>
<td></td>
<td>92</td>
<td>/</td>
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</tbody>
</table>

*Note that the performance measures for this objective have been disaggregated from the original performance measure for reporting purposes only.

**Baseline data (per Instructions for Grant Performance Report)

<table>
<thead>
<tr>
<th>2.b. Performance Measure*</th>
<th>Measure Type</th>
<th>Quantitative Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increase by 15 the number of articulation agreements over the 2010-11 baseline number</td>
<td>Project</td>
<td>Raw Number</td>
</tr>
<tr>
<td></td>
<td></td>
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</tr>
<tr>
<td></td>
<td>92</td>
<td>/</td>
</tr>
</tbody>
</table>

*Note that the performance measures for this objective have been disaggregated from the original performance measure for reporting purposes only.

**Baseline data (per Instructions for Grant Performance Report)

Explanation of Progress (Include Qualitative Data and Data Collection Information)

Evaluation Data Sources and Methods for the Objective

The two performance measures (2a and 2b) for this objective assess the same outcome: articulated courses. That is, an articulated course is equivalent to an articulation agreement within the context of this project. Accordingly, for the purpose of this project objective, performance measures 2a and 2b use the same baseline data and actual performance data. Document data collection (e.g., of course articulation agreements) and review constitute the data collection methods for these two performance measures of this objective. Data collection commenced in February 2012 and will continue until project faculty complete the articulation and curriculum approval process at College of the Canyons, Glendale Community College, and CSUN. Data analysis of documents includes reviews to confirm and verify that courses are articulated and articulation agreements are in effect. In addition, Glendale Community College will use an online student-transfer information system to track progress on these two performance measures (see below under “Project Activities at Glendale Community College”)

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Actual performance data for these two performance measures of this objective indicate that 77 courses currently articulate between College of the Canyons/Glendale Community College and CSUN. Specifically, data collected during the period through documents reveal that a total of 41 courses currently articulate between College of the Canyons and CSUN and a total of 36 courses currently articulate between Glendale Community College and CSUN. Of the 77 courses that currently articulate, remedial math courses have been excluded from the count and six courses are missing labs (four at College of the Canyons and two at Glendale Community College). Accordingly, the total of 77 courses that currently articulate between both community colleges and CSUN constitutes the baseline performance measure. Meanwhile, a total of 12 courses currently do not articulate between College of the Canyons and CSUN and 17 courses currently do not articulate between Glendale Community College and CSUN, for a total of 29 courses in the fields of engineering and computer science. Given the project target of 15 new articulated courses, the total number of courses that need to articulate between CSUN and the two community colleges is 92, which represents the project target number. During the period of performance evaluation, 8 have been articulated between CSUN and COC and 4 courses have been articulated between CSUN and GCC, for a total of 12 articulated courses between CSUN and COC/GCC. Given the project increase of 15 and project target of 92 articulated courses/articulation agreements, the actual performance data for this period demonstrate substantial progress toward achieving this objective. Indeed, with the 12 new articulate courses, the total number of articulated courses at the end of the performance period for the first year is 89. More specific details about the courses articulated during the period can be found in the sections immediately below.

Preliminary Findings of College of the Canyons
During the performance period, the following courses have been articulated between CSUN and COC:

- CE 240/L at CSUN is articulated with COC ENGR 152
- CMT 110/L at CSUN articulates with COC CONST 103
- CMT 208/L at CSUN articulates with COC SURV 101
- CMT 210/L at CSUN articulates with COC CONST 106
- COMP 101 at CSUN articulates with COC CMPSCI 132
- COMP 122/L at CSUN articulates with COC CMPSCI 122
- ECE 240 and ECE 240/L at CSUN articulates with COC ENGR 153/153L combined
- MSE 227 and MSE 227/L at CSUN articulates with COC ENGR 151 and ENGR 151/L

Preliminary Findings of Glendale Community College
During the performance period, the following courses have been articulated between CSUN and GCC:

- CIT 101/LCIT at CSUN articulates with GCC CS/IS 101
- CIT 160/L at CSUN articulates with GCC CS/IS 260
- COMP 108 at CSUN articulates with GCC CS/IS 112
- COMP 122/L at CSUN articulates with GCC CS/IS 165

Description of Project Activities Related to the Objective
During the performance period, project faculty have made substantive progress toward meeting these two performance measures. On December 8, 2011, project faculty from CSUN, College of the Canyons, and Glendale Community College met to discuss course articulation. At two subsequent monthly project team meetings (February 9, 2012, and March 15, 2012), project faculty reported their progress in meeting the two performance measures for this objective. Subsequently, project faculty established a framework to develop course articulation agreements and worked on articulating the individual courses listed above and additional courses for the next performance period. Specifically, project faculty formed work groups based on their disciplinary backgrounds and department affiliations (e.g., computer science, engineering fields, etc.) and assigned themselves specific courses to review, revise, and articulate. During the project team meetings (February 2012 through September 2012), faculty from CSUN, COC, and GCC collaborated on the articulation process. The meetings provided an opportunity for the faculty from each campus to discuss their most recent collaborations and to report updated articulation findings. Prior to the project team meetings, faculty exchanged syllabi, course outlines, and consulted with curriculum committees on their respective campuses. The articulation process included course “match-ups” by examining respective syllabi and course outlines for course descriptions, objectives/outcomes, and content for each community college course with CSUN’s course. To illustrate faculty efforts to articulate courses, we offer examples here of how Professors Dermendjian and Ghanem (CSUN) collaborated with Professor Martinez and Dean Omar Torres (COC) and Professor Rubke and Richard
Cortes (GCC) to articulate courses in civil engineering and construction management. In addition, we can share the example of how Professor Bavarian (CSUN) collaborated with Professor Martinez (COC) to articulate the materials engineering lab course. Finally, we can report the example of how Professor Melara updated and articulated computer science courses through her requests of course syllabi from her COC/GCC counterparts. As in these examples, the collaborative efforts to articulate courses between CSUN faculty and COC/GCC faculty continued through the performance period.

Plans to Use of Performance Data to Monitor Progress
As we look ahead to the next performance period, we find that there are 12 courses currently being reviewed for action to articulate between CSUN and COC/GCC, including syllabi review, transferability approval, and laboratory inclusion. During the next performance period, plans to measure progress on these two measures include document data collection (e.g., course articulation agreements) and review. Data collection will occur as project faculty complete the articulation and curriculum approval process at College of the Canyons, Glendale Community College, and CSUN. As with the courses articulated during the current performance period, we plan to continue the course articulation work that supports our collaborative approach in the curriculum revision process and submission of revised courses to curriculum committees at our respective campuses once courses have been articulated. While this process may take time to complete, it is important to note that if project faculty agree on course content, they can begin to make substitutions immediately while awaiting the conclusion of the curriculum approval processes at their respective institutions.
3. Project Objective  
[ ] Check if this is a status update for the previous budget period.

Enhance the academic advising/counseling capacity of College of the Canyons and Glendale Community College in STEM fields

### 3.a. Performance Measure* for College of the Canyons**

<table>
<thead>
<tr>
<th>Measure Type</th>
<th>Quantitative Data</th>
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</thead>
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<tr>
<td><strong>Project</strong></td>
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<td>Ratio</td>
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<td>2</td>
<td>/</td>
</tr>
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</table>

*Note that the performance measures for this objective have been disaggregated from the original performance measure for reporting purposes only.

**Note that this performance measure is reported in separate tables for College of the Canyons and Glendale Community College, given differences in target/actual performance data for this reporting period.

***Baseline data (per Instructions for Grant Performance Report)

### 3.a. Performance Measure* for Glendale Community College**

<table>
<thead>
<tr>
<th>Measure Type</th>
<th>Quantitative Data</th>
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</thead>
<tbody>
<tr>
<td><strong>Project</strong></td>
<td><strong>Target</strong></td>
</tr>
<tr>
<td>Raw Number</td>
<td>Ratio</td>
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<tr>
<td>2</td>
<td>/</td>
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*Note that the performance measures for this objective have been disaggregated from the original performance measure for reporting purposes only.

**Note that this performance measure is reported in separate tables for College of the Canyons and Glendale Community College, given differences in target/actual performance data for this reporting period.

***Baseline data (per Instructions for Grant Performance Report)

### 3.b. Performance Measure* for College of the Canyons**

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<td>Ratio</td>
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<td>61</td>
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*Note that the performance measures for this objective have been disaggregated from the original performance measure for reporting purposes only.

**Note that this performance measure is reported in separate tables for College of the Canyons and Glendale Community College, given differences in target/actual performance data for this reporting period.

***Baseline data (per Instructions for Grant Performance Report)
3.b. Performance Measure* for Glendale Community College**

<table>
<thead>
<tr>
<th>Measure Type</th>
<th>Quantitative Data</th>
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<td>Project</td>
<td>Target</td>
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<tr>
<td></td>
<td>Raw Number</td>
</tr>
<tr>
<td>Increase by four the number of advising/counseling sessions with students in STEM fields over the 2010-11 baseline number</td>
<td></td>
</tr>
</tbody>
</table>

*Note that the performance measures for this objective have been disaggregated from the original performance measure for reporting purposes only.

**Note that this performance measure is reported in separate tables for College of the Canyons and Glendale Community College, given differences in target/actual performance data for this reporting period.

***Baseline data (per Instructions for Grant Performance Report)

Explanation of Progress (Include Qualitative Data and Data Collection Information)

Evaluation Data Sources and Methods for the Objective
College of the Canyons and Glendale Community College report their respective data sources and methods below.

Evaluation Data Sources and Methods at College of the Canyons
College of the Canyons used a combination of document data sources and collection methods—including counseling appointments, student educational plans, and attendance at the transfer planning events—to establish baseline data for these performance measures.

Evaluation Data Sources and Methods at Glendale Community College
Glendale Community College STEM and general counselors were asked to track and report any STEM professional development workshops they attended to the AIMS² Counselor/Coordinator. The AIMS² Counselor/Coordinator also tracked counseling appointments, including meetings to discuss student educational plans, to document data sources and collection methods.

Description of Preliminary Findings Related to the Objective
Preliminary findings for each college are reported below.

Preliminary Findings of College of the Canyons
For performance measure 3a, College of the Canyons reports that two counselors have participated in staff development activities. Further, College of the Canyons reports that all 10 AIMS² students from Cohort 1 have participated in at least one and up to 6 counseling sessions each. The total number of counseling sessions for the Cohort 1 is 23. The number of engineering advising sessions for the Cohort 1 is 7. During the performance period, the project target (3a) to increase by two the number of counselors who participate in STEM-related professional development workshops has been achieved. With respect to performance measure 3b, College of the Canyons reports a baseline measure of one session (i.e., academic advising/counseling session) for Cohort 1. Given that the project target is to increase the number of academic advising/counseling sessions by four sessions per student while in the program, the project target is 61 tutoring sessions. We derived this target by multiplying the number of unduplicated student headcount of Cohort 1 participants at College of the Canyons (n=15) by four (sessions per student) and adding one (i.e., the baseline of one session) for a total of 61 academic advising/counseling sessions. Given the project target for performance measure 3b, during the project participation period, actual performance data indicate that 30 separate counseling/advising sessions occurred, which represents substantial progress in meeting the target for Cohort 1 for this measure (3b).

Preliminary Findings of Glendale Community College
With respect to performance measure 3a (i.e., Glendale Community College counselors who participate in STEM professional development), three counselors reported attending STEM workshops and/or conferences. One AIMS Counselor/Coordinator attended the following: California Intersegmental Articulation Council meeting (April 2012), GreenTech Summit Conference (September 2012), Southern CIAC bi-annual conference (October 2012), and STEMTech 2012 (October 2012); one Career & Technical Education Counselor attended the following: GreenTech Summit Conference (September 2012) and California Community College Associate for Occupa-
tional Education workshop; one Career Counselor attended GreenTech Summit Conference (September 2012). The actual performance data for this objective is 3 counselors. Given that the baseline data for this project objective is 0 and the project target is to increase by two the number of counselors who participate in STEM-related professional development workshops, this performance measure has been met and surpassed by 1 counselor during the current project performance period.

With respect to performance measure 3b (i.e., students’ participation in advising/counseling sessions), data were collected from an online student survey and from the AIMS² Counselor/Coordinator tracking the number of advising/counseling sessions provided to students. Glendale Community College students participating in the program (Cohort 1, Spring 2012) were invited to participate in an online survey in February 2012, May 2012, and October 2012 to collect data about the types of services and programs they participated in prior to program entry (February 2012 survey) and during the Spring 2012 and Fall 2012 semesters (May and October 2012 surveys). The survey included items that asked if respondents attended any academic counseling sessions with a STEM counselor. Of the students in Cohort 1 (n=15), one out of fourteen students who responded indicated that he/she attended one academic counseling session. Given that the target increase is to increase the number of academic advising/counseling sessions by four sessions per student while in the program, the project target is 61 tutoring sessions. We derived this target by multiplying the number of unduplicated student headcount of Cohort 1 participants at Glendale Community College (n=15) by four (sessions per student) and adding one (i.e., the baseline of one session) for a total of 61 academic advising/counseling sessions. In contrast to baseline data, actual performance data reveal that of the students in Cohort 1 (n=15) eleven out of the thirteen students who responded indicated that he/she attended one academic counseling session. Of the students (n=11) in Cohort 1 in Fall 2012, four out of the eight students who responded indicated that he/she attended one academic counseling session, one out of eight students attended 2-3 academic counseling sessions, and one out of eight students attended 4-5 academic counseling sessions. The number of academic counseling sessions was verified by the AIMS² Counselor/Coordinator, who recorded a total of 22 counseling sessions with Cohort 1 students during the Spring and Fall 2012 semesters. Students are required to check in before their advising/counseling appointment by way of writing their names on the AIMS² Counseling clipboard. An assistant to the counselor also verifies counseling visits by checking if each participant has completed their Student Educational Plans (SEPs).

Description of Project Activities Related to the Objective
Specific project activities at College of the Canyons and Glendale Community College, respectively, are detailed below.

Project Activities at College of the Canyons
During this performance period, we have engaged two counseling department faculty members in the AIMS² program to support our need for an increase in counseling sessions. Our counseling faculty members have participated in professional development activities to increase their ability to effectively advise and serve our AIMS² student scholars (Cohort 1). Our plan includes having our AIMS² scholars meet with counseling faculty up to twice a semester for every semester they are involved in the program at COC. These appointments will result in the development or refinement of a Student Educational Plan (SEP) for each scholar. One of our counseling faculty members will also provide 3 additional informational workshops on transfer planning during the fall semester 2012 to support the scholar’s transfer process. We have also created a schedule of appointments for each scholar to be mentored by an engineering faculty member in one or more advising sessions each semester.

Project Activities at Glendale Community College
Counselors are notified of professional development opportunities through: their monthly CSUN meetings, STEMTech listservs, and networking with other STEM colleagues. At minimum, students participating in the program are required to meet one-on-one with the AIMS² Counselor/Coordinator each semester. During these sessions, students will develop or update their Student Educational Plans (SEP). SEPs are a list of required General Education and Major requirements prepared only by academic counselors. In addition, advising of prerequisite courses are provided to properly guide students.

Plans to Use of Performance Data to Monitor Progress
At College of the Canyons, progress toward the above performance measures of this objective will be tracked the number of counseling appointments, the number of SEPs created or modified, and attendance at the transfer planning events. Meanwhile, at Glendale Community College, progress toward the above performance measures of this objective will be tracked by the number of counseling sessions students have, results from an online survey, and recording counselor(s) attendance at professional development workshops.
Enhance the academic participation/transfer readiness rate of College of the Canyons and Glendale Community College students in STEM fields

<table>
<thead>
<tr>
<th>4.a. Performance Measure* for College of the Canyons**</th>
<th>Measure Type</th>
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<td>Increase by 75% the College of the Canyons and Glendale Community College students who participate in tutoring sessions in STEM classes and who participate in STEM academic workshops over the 2010-11 baseline rate</td>
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***Note that in the ratio columns of the target and actual performance data “the numerator represents the numerical target (e.g., the number of students that are expected to attain proficiency) or actual performance data (e.g., the number of students that attained proficiency), and the denominator represents the universe (e.g., all students served)” (Instructions for Grant Performance Report, p. 7).

****Baseline data (per Instructions for Grant Performance Report)

<table>
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<tr>
<th>4.a. Performance Measure* for Glendale Community College**</th>
<th>Measure Type</th>
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<tr>
<td>Increase by 75% the College of the Canyons and Glendale Community College students who participate in tutoring sessions in STEM classes and who participate in STEM academic workshops over the 2010-11 baseline rate</td>
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***Note that in the ratio columns of the target and actual performance data “the numerator represents the numerical target (e.g., the number of students that are expected to attain proficiency) or actual performance data (e.g., the number of students that attained proficiency), and the denominator represents the universe (e.g., all students served)” (Instructions for Grant Performance Report, p. 7).

****Baseline data (per Instructions for Grant Performance Report)

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<th>4.b. Performance Measure* College of the Canyons**</th>
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<td>Increase by 75% the College of the Canyons and Glendale Community College students who enroll in online courses with CSUN faculty over the 2010-11 baseline rate</td>
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Explanation of Progress (Include Qualitative Data and Data Collection Information)

Evaluation Data Sources and Methods for the Objective
College of the Canyons and Glendale Community College report their respective data sources and methods below.

Evaluation Data Sources and Methods at College of the Canyons
College of the Canyons collected data on student participation in tutoring sessions and workshops through an existing MESA program tracking mechanism.

Evaluation Data Sources and Methods at Glendale Community College
Glendale Community College used an online baseline survey questionnaire (see below under “Description of Preliminary Findings Related to the Objective” for details) to collect data on these performance measures.

Description of Preliminary Findings Related to the Objective
Preliminary findings for each college are reported below.

Preliminary Findings of College of the Canyons
For performance measure 4a, College of the Canyons reports that eight students in the cohort (Cohort 1) participated in tutoring (see performance measure 6a) or academic workshops prior to cohort entry. In addition, with respect to performance measure 4b, College of the Canyons reports that no Cohort 1 students enrolled in online courses with CSUN faculty prior to cohort entry. Given current baseline data reported by College of the Canyons, project targets have been established that are intended to achieve the percent increase in both performance measures related to increases in the number of students (not sessions or workshops) that participate in tutoring (4a), workshops (4a), and online classes (4b). Accordingly, the current target for performance measure 4a is set at 8/10 (80% of all Cohort 1 participants) and for performance measure 4b is 1/10 (10% of all Cohort 1 participants). In terms of actual performance data during the period, College of the Canyons reports that 9 of the 10 students participating in Cohort 1, or 90%, have sought tutoring with a faculty or student tutor—related to measure 4a—or participated in an academic workshop (see performance measure 6a). Given actual performance data for Cohort 1 for the period, performance measure 4a had been achieved. By contrast, with respect to measure 4b, College of the Canyons reports that none of the AIMS² scholars in Cohort 1 have enrolled in online courses with CSUN faculty.
Preliminary Findings of Glendale Community College

With respect to performance measure 4a (i.e., Glendale Community College students’ participation in STEM tutoring), data were collected from an online survey questionnaire. Glendale Community College students participating in the program (Cohort 1, Spring 2012) were invited to participate in an online survey in May 2012 and October 2012 to collect data about the types of services and programs they participated in during the Spring 2012 and Fall 2012 semesters, respectively. The survey included items that asked if respondents attended tutoring sessions for STEM classes, academic workshops, and supplemental lab sessions for STEM classes. Of the students in Cohort 1 in Spring 2012 (n=15), two out of the thirteen students who responded indicated that they participated in tutoring sessions for a STEM class during the Spring 2012 semester. Based on the total number of Cohort 1 students (n=13) that responded to the online survey questionnaire in Spring 2012, the actual performance data for Cohort 1 for the Spring 2012 semester is 9/13 (69%) of Cohort 1 participants. One student reported attending 4-5 sessions of math tutoring, and one student reported attending 6 or more sessions of math and engineering tutoring. Of the students in Cohort 1 in Fall 2012 (n=11), five out of the eight students who responded indicated that he/she participated in tutoring sessions for a STEM class during the Fall 2012 semester. Students reported attending tutoring in science (1 student), technology (1 student), engineering (1 student), and mathematics (4 students) classes. One of the students indicated that the tutoring was successful in helping him/her do better on course exams. Further, project students in Cohort 1 were also asked to indicate the number of STEM facilitated academic workshops they attended during the Spring 2012 and Fall 2012 semesters. These academic workshops include workshops that help students with planning coursework, time management, etc. and were sponsored by a STEM department. In the Spring 2012 semester, six out of the twelve students who responded indicated that they attended a STEM-facilitated academic workshop. Four students reported attending 1 workshop, three students reported attending 2-3 workshops, and 1 student reported attending 4-5 workshops. In the Fall 2012 semester, two out of seven students who responded indicated that they attended a STEM-facilitated workshop. One student reported attending 1 workshop, and one student reported attending six or more workshops. The topics included: library workshops, student development classes, and transfer application workshops. In addition to STEM-facilitated academic workshops, students were asked in the survey if they participated in any supplemental lab sessions for a STEM class. Supplemental lab sessions consist of learning workshops offered to specific classes that focus on problem solving exercises centered on the course material. In Spring 2012, four students indicated they attended supplemental lab sessions, and in Fall 2012 one student indicated they attended a supplemental lab session. These sessions were led by either student leaders or Glendale Community College faculty. Between tutoring sessions, STEM-facilitated academic workshops, and supplemental lab learning workshops, a total of nine students in Cohort 1 (Spring 2012) reported in Spring 2012 participating in an activity related to performance measure 4a.

For performance measure 4b (i.e., Glendale Community College students’ enrollment in online courses with CSUN faculty), data from the online survey questionnaire indicated that three Glendale Community College students enrolled in online courses—which were not sponsored by the AIMS² project or taught by faculty mentors under the auspices of the AIMS² project—at CSUN during the Spring 2012 semester. As a consequence, the actual performance data for this measure is 3/15 (20% of Cohort 1 participants).

Description of Project Activities Related to the Objective

Specific project activities at College of the Canyons and Glendale Community College, respectively, are detailed below.

Project Activities at College of the Canyons

Project activities included the development and implementation of a new mentor/tutor training workshop for all interested AIMS² scholars. Four AIMS² scholars became trained to participate as tutors and/or mentors for new AIMS² Cohort 2 students coming into the program this fall (baseline and actual performance data on Cohort 2 will be reported in next year’s report). A full-drop-in tutorial schedule was produced including math, engineering and physics with faculty tutors and student peer tutors available for our AIMS² scholars. There are nine hours of engineering tutoring with faculty and student tutors, five hours of physics tutoring with faculty and student tutors and twenty hours of mathematics tutoring with both faculty and student tutors available for our AIMS² scholars. Because of the financial situation for our COC AIMS² scholars it is difficult for them to enroll in university courses while they are still at College of the Canyons.

Project Activities at Glendale Community College

During the course of the project, students will be supplemented with tutoring to increase their math, science and language skills to increase their “transfer readiness” in these areas. The AIMS² Counselor/Coordinator reminds students of the tutoring support available and their requirement to seek tutoring services. Glendale Community College program administrators and the AIMS² Counselor/Coordinator are continuing to work on articulating present and new courses with CSUN faculty. Some of the present courses, such as computer science courses, will be offered as a hybrid model.
Project Activities at CSUN and College of the Canyons/ Glendale Community College

Clearly, the actual data for performance measure 4b for both College of the Canyons and Glendale Community College identify challenges that we have discussed as a project team (at our December 2012 team meeting). Specifically, we discussed the general approach to teaching engineering and computer science courses online and the need to deliver on-ground courses and offer face-to-face instructional experiences in the disciplines associated with the project. In addition, we discussed the issue with affordability with enrolling in courses at CSUN while COC and GCC cohort participants are still enrolled as community college students. Given these issues, we concluded that we will need to address how to best perform within the parameters of this performance measure (i.e., 4b at College of the Canyons and 4b at Glendale Community College) while meeting the pedagogical needs of CSUN faculty and financial needs of COC and GCC students. One possible alternative to student enrollment in online courses that we discussed is extending the CSUN faculty summer research projects in which COC and GCC students participate through an online environment. We plan to continue this discussion into the next performance period.

Plans to Use of Performance Data to Monitor Progress

At College of the Canyons, progress toward the above performance measures of this objective will be tracked using a tracking mechanism to be developed so that they are able to quantify their time with both peer and faculty tutors and participation in peer tutoring session and academic workshops. Meanwhile, Glendale Community College plans to monitor performance on these two measures using the online survey questionnaire results.
5. Project Objective  [ ] Check if this is a status update for the previous budget period.

Increase and enhance student-faculty interaction at College of the Canyons and Glendale Community College with CSUN faculty in STEM fields

5.a. Performance Measure* for College of the Canyons**

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**Note that this performance measure is reported in separate tables for College of the Canyons and Glendale Community College, given differences in target/actual performance data for this reporting period.

***No baseline data available for this report

5.a. Performance Measure* for Glendale Community College**

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****Baseline data (per Instructions for Grant Performance Report)

5.b. Performance Measure

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***Baseline data (per Instructions for Grant Performance Report)
Explanation of Progress (Include Qualitative Data and Data Collection Information)

Evaluation Data Sources and Methods for the Objective
College of the Canyons and Glendale Community College report their respective data sources and methods below.

Evaluation Data Sources and Methods at College of the Canyons
COC used a survey questionnaire to establish the baseline data regarding faculty contact. During the course of this performance period, all COC faculty contacts were recorded. Interactions with CSUN faculty and students through summer research opportunities were also recorded.

Evaluation Data Sources and Methods at Glendale Community College
For performance measure 5a (student-faculty interactions), Glendale Community College used an online student survey questionnaire and informal conversations with the AIM2 Counselor/Coordinator to collect data. For performance measure 5b (quality of student-faculty interactions), Glendale Community College used an online student survey questionnaire, group interviews (i.e., Cohort 1 participant focus groups), and informal conversations with the AIM Counselor/Coordinator (see below under “Description of Preliminary Findings Related to the Objective” for details) to collect data.

Description of Preliminary Findings Related to the Objective
Preliminary findings for each college are reported below.

Preliminary Findings of College of the Canyons
For performance measure 5a, baseline data for the current cohort indicates that none of the current AIMS2 students interacted with faculty in STEM fields prior to the period. During the performance period, 10 current AIMS2 students had 30 faculty appointments and approximately 74 other contacts with AIMS2 faculty. In addition, 5 of the 11 COC AIMS scholars in Cohort 1 participated in summer research with CSUN faculty during the summer 2012. One AIMS2 scholar in Cohort 1 transferred to CSUN for the fall 2012 term. While the number of contacts between students and faculty during the period is still being evaluated, these figures signify that 10 of the 11 current AIMS2 students interacted with faculty, which represents 91% of all students in the cohort and substantially exceeds the target for this performance measure. In terms of performance measure 5b, qualitative data on the quality of student-faculty interaction will be reported in the next performance period.

Preliminary Findings of Glendale Community College
For performance measure 5a (i.e., student-faculty interactions), data were collected from a cohort survey questionnaire. Glendale Community College Cohort 1 (Spring 2012) students participating in the program were invited to participate in an online survey questionnaire in May 2012 and October 2012 to collect data about the types of services and programs they participated in during the Spring 2012 and Fall 2012 semesters, including any interactions with CSUN faculty. Among participants in the Cohort 1 in Spring 2012 (n=15) five of the thirteen students that responded indicated that they had had interaction with a CSUN faculty member. The types of student-faculty interactions consisted of: office hour visits (4 students), phone communication (5 students), phone conversations (2 students), and out of class discussions (4 students). Cohort 1 students also have had an opportunity to seek mentors from Glendale Community College faculty and CSUN faculty. While faculty mentors have provided academic support, they have also provided career advice and given students a sense of what will be expected of them when they transfer to CSUN.

In a Fall 2012 survey questionnaire of Cohort 1 students, four out of five students who responded indicated that they attended the CSUN student social event on June 20, 2012. This event allowed Cohort 1 students an opportunity to meet and interact with CSUN faculty and students. In addition, students were invited to apply and participate in summer internship opportunities with CSUN faculty and students. Four students participated in the summer research program. One student stated that summer internship was a “really good learning experience. One the CSUN professors took me on and I got to know the students he works with, and together we put together a new project- it was a controller solar panel that automatically follows the sun. It was an important experience for my field. The experience opened by eyes to what there is still to learn, where I am not, and what I need to do to master what I want to do.” For another student, her summer internship experience confirmed that she wants to change her focus from mechanical engineering to aerospace.

With the advancement of mobile technology, texting and email has become the preferred choice for weekly communication between the AIMS2 Counselor/Coordinator and students. The AIMS2 Counselor/Coordinator found using his cell phone device to be extremely effective when sending regular announcements pertaining to weekly AIMS2 meetings, AIMS2 events/field trips, individual counseling & financial aid follow-ups. Similarly, program participants often use this preferred method of commu-
unication for a variety of requests including counseling appointments, tutoring, mentoring, letters of recommendation, and other related program issues. As a result, many of the participants feel that the AIMS² Counselor is extremely accessible and feel that their needs are met given this innovative mode of communication. The AIMS² Counselor/Coordinator has sent ten text messages, per student (n=15 in Spring, n=11 in Fall). Given student attrition in Cohort 1, the total number of students in Cohort 1 as of Fall 2012 (n=11), which means that the actual performance data for Cohort 1 is 11 students (100% of Cohort 1 participants).

With respect to performance measure 5b (i.e., quality of student-faculty interactions)—a performance measure that requires us to collect qualitative data as part of a comprehensive, mixed-methods evaluation design—data were collected from a cohort survey questionnaire participant group interviews. Through these data collection procedures, students and the AIMS² Counselor/Coordinator described several events and opportunities for which Glendale Community College Cohort 1 participants could interact with CSUN faculty. A student social event was held on June 20, 2012, which allowed Cohort 1 students an opportunity to visit the CSUN campus and meet with faculty and peers. One student expressed that the CSUN social event was one of the most rewarding experiences he/she had in the program so far since he/she was able to connect with CSUN faculty that helped him/her get an internship.

**Description of Project Activities Related to the Objective**

Specific project activities at College of the Canyons and Glendale Community College, respectively, are detailed below.

**Project Activities at College of the Canyons**

College of the Canyons has developed and implemented a schedule of appointments for our engineering faculty to spend one-on-one time with each member of our AIMS² student cohort (Cohort 1). Specifically, 8 of the 10 student scholars have had one or more advising sessions with faculty in the engineering department to discuss their academic goals, their professional aspirations and the barriers they may face along the way. Further, all of the AIMS² scholars have met with counseling faculty to develop and/or modify an existing educational plan. During the summer of 2012, 5 COC AIMS² scholars worked with CSUN faculty on research projects at CSUN, which related to each scholar’s engineering goals. The feedback from both the CSUN faculty and the COC AIMS² scholars was very positive.

**Project Activities at Glendale Community College**

Glendale Community College program administrators and the AIM Counselor/Coordinator will continue to identify faculty mentors for students to interact with. The AIMS² Counselor/Coordinator will also continue meeting with participants weekly for one hour in a club capacity. The purpose of these meetings is to discuss the projects, plan field trips, and additional plans with CSUN.

**Summer Project Research Activities at CSUN**

In addition to the project activities included above under College of the Canyons and Glendale Community College, CSUN faculty mentors facilitated interaction between themselves and COC and GCC students during the performance period. Specifically, select CSUN faculty mentors invited COC and/or GCC students to join CSUN students in faculty summer research projects at CSUN. The CSUN faculty mentors, research project names, and number of students (COC, GCC, and CSUN) who participated in the projects are listed below:

**Professors Stewart Prince and Bob Ryan:**
- "Thermal-Fluids Lab Summer Research" with 1 CSUN student and 1 GCC student
- "Design of a Solar Energy Demonstration Unit / Redesign of a Human Powered Vehicle Drive Train" with 2 students from COC

**Professor Behzad Bavaria:**
- “Evolution of Special Boundaries in Grain Boundary Engineered Nickel” with 1 CSUN student
- “Polymer Protective Barriers for Improved Implantable Glucose Sensor Life” with 1 COC student

**Professor Bruno Osorno:**
- "Microcontroller Interface for Motor Control Using Bluetooth and Arduino Technologies” with 3 CSUN students and 1 GCC student

**Professor Amine Ghanem:**
- “ASCE Steel Bridge Competition: How to improve the process?” with 1 CSUN student
“Creating Simulation Model for ICF Walls” with 1 CSUN student
“PAD System versus CMU Walls” with 1 CSUN student

Professor Gloria Melara:
“Introduction to Language and Artificial Intelligence Summer Project” with 2 students from GCC

In terms of the performance measures of this objective, these projects facilitated interaction between CSUN faculty, CSUN students, and COC/GCC students within a research context and supported the achievement of the objective.

Plans to Use of Performance Data to Monitor Progress
At College of the Canyons, progress toward the performance measures of this objective are tracked using pre-participation and post-participation surveys, faculty/scholar appointment records, records of counseling contacts and scholar participation in COC and CSUN events and research opportunities. Glendale Community College will continue monitoring performance on these two measures through the use of results from the online survey questionnaire and group interviews (i.e., participant focus groups). Specifically, Glendale Community College plans to collect data on the quality of student-faculty interactions in 2013 through student participant focus groups and a follow-up online survey. For the student focus groups, a protocol will be developed to inquire about students’ experiences in interacting with CSUN faculty, the frequency and methods of interactions, and what was most and least beneficial about the support they received. The focus groups will be led by the program evaluators and will be audio recorded as well as have hand-written notes taken during the discussion.
6. Project Objective

- Check if this is a status update for the previous budget period.

Enhance the peer environment of College of the Canyons and Glendale Community College students in STEM fields

### 6.a. Performance Measure* for College of the Canyons**

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****Baseline data (per Instructions for Grant Performance Report)

### 6.a. Performance Measure* for Glendale Community College**

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****Baseline data (per Instructions for Grant Performance Report)

### 6.b. Performance Measure* for College of the Canyons**

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<td>Increase by 15 the number of College of the Canyons and Glendale Community College students who are peer mentored by CSUN students over the 2010-11 baseline number</td>
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****Baseline data (per instructions for Grant Performance Report)

### 6.b. Performance Measure* for Glendale Community College**

**Measure Type**

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*Note that the performance measures for this objective have been disaggregated from the original performance measure for reporting purposes only.

### 6.c. Performance Measure*

**Measure Type**

<table>
<thead>
<tr>
<th>Quantitative Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project</td>
</tr>
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<table>
<thead>
<tr>
<th>Measure Type</th>
<th>Target</th>
<th>Actual Performance Data</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Raw Number</td>
<td>Ratio</td>
</tr>
<tr>
<td>Improve the quality of peer-peer interaction</td>
<td>/</td>
<td>/</td>
</tr>
</tbody>
</table>

*Note that the performance measures for this objective have been disaggregated from the original performance measure for reporting purposes only.

**Explanation of Progress (Include Qualitative Data and Data Collection Information)**

**Evaluation Data Sources and Methods for the Objective**

During the performance period, College of the Canyons and Glendale Community College support the assessment of these measures through data collection methods designed to meet their unique project needs.

**Evaluation Data Sources and Methods at College of the Canyons**

College of the Canyons collected data on student participation in tutoring sessions, AIMS² activities and the Tutor/mentor training workshop through existing tracking and recording mechanisms.

**Evaluation Data Sources and Methods at Glendale Community College**

Glendale Community College used an online survey questionnaire and group interviews (i.e., participant focus groups) (see below under “Description of Preliminary Findings Related to the Objective” for details) to collect actual performance data on these performance measures.

**Description of Preliminary Findings Related to the Objective**

Preliminary findings for each college are reported below.

**Preliminary Findings of College of the Canyons**

With respect to performance measure 6a, College of the Canyons reports that no students had participated in tutoring in STEM fields prior to the project period. As a result, the project target for the current cohort is 15. During the performance period, 9 of the 10 current students in Cohort 1 participated in tutoring or academic workshops (see performance measure 4a). In terms of peer mentoring (performance measure 6b), College of the Canyons reports that 5 Cohort 1 students were men-
tored by CSUN students and faculty during summer research experiences. Further, all 10 of the current students in College of the Canyons AIMS² cohort (Cohort 1) have had numerous interactions with each other and with COC engineering and counseling faculty members at COC. More specifically, four AIMS² scholars participated in a mentor/tutor training workshop and will assume roles as tutors and mentors for both the MESA and the AIMS² programs. In terms of performance measure 6c, qualitative data on the quality of peer (student-student) interaction will be reported in the next performance period.

Preliminary Findings of Glendale Community College

With respect to performance measure 6a, (i.e., Glendale Community College students’ participation in peer-peer tutoring), data were collected from a survey questionnaire. Glendale Community College students participating in the program (Cohort 1, Spring 2012) were invited to participate in an online survey in May 2012 and October 2012 to collect actual performance data about the types of services and programs they participated in during the Spring 2012 and Fall 2012 semesters, including peer-peer tutoring. In Spring 2012, six of the thirteen students who responded indicated that they received peer tutoring during the Spring 2012 semester. Specifically, these sessions were led by Glendale Community College students. The number of peer tutoring sessions that these students attended varied. The courses that students indicated that they received peer tutoring in were: science, technology, mathematics, and engineering. In Fall 2012, one of five students who responded indicated that they received peer tutoring during the Fall 2012 semester. Specifically, these sessions were led by Glendale Community College students. The courses that the student indicated that they received peer tutoring in were: science, engineering, and mathematics. Accordingly, the actual performance data for performance measure 6a is 11 students (i.e., 6 students from Spring 2012 were added to 1 student from Fall 2012, which was added to the baseline of 4 students).

For performance measure 6b (i.e., Glendale Community College students’ peer mentored by CSUN students), data were collected from a survey questionnaire. Glendale Community College students participating in the program (Cohort 1, Spring 2012) were invited to participate in an online survey in May 2012 and October 2012 to collect actual performance data about the types of services and programs they participated in during the Spring 2012 and Fall 2012 semesters, including whether they received mentoring from a CSUN student. In Spring 2012, no student reported participating in peer mentoring. In Fall 2012, five of the respondents indicated having a CSUN student as a peer mentor. One student who has a CSUN mentor explained how she has become good friends with her CSUN mentor, and since they talk all the time, anytime she has a question she can just call her. Another student described the help he received from a mentor, which includes helping identify appropriate CSUN clubs and organizations to get involved in when he transfers. In addition, the peer mentor has been helpful in giving pointers on what to focus and study while participating in an internship. Overall, participants have described CSUN peer mentors as “very encouraging” and “readily available and helpful in answering questions.”

Based on the total number of students (n=11) in Cohort 1 in Fall 2012 semester—given student attrition from the program—the actual performance data for Cohort 1 is 5 students.

For performance measure 6c (i.e., quality of peer interactions), data were collected from a survey questionnaire and group interviews (i.e., participant focus groups). Cohort participants have had many opportunities to interact with other Glendale Community College peers and CSUN peers. Cohort participants meet weekly for one hour in a club capacity to work as a team to tackle real, tangible, and ambitious projects. The purpose of meetings is to discuss such projects, plan field trips, and additional plans with CSUN. One project that Cohort 1 students (Spring 2012) are working on with Cohort 2 students (Fall 2012) is to mentor students at Clarke Magnet School. This would give Cohort 1 and Cohort 2 students the experience of teaching and a chance to share their experiences, and it gives the high school students the chance to work with someone other than their teacher. The high school students currently are competing in robotics, and GCC students are proposing to help teach the high school students how to program their robot with C++. The skills and knowledge of building a robot will help GCC students in another project they have planned: work with Clark Magnet School’s teacher and GCC faculty to build a basic robot from the ground up.

The AIMS² Counselor/Coordinator has planned events and field trips for cohort participants that has not only helped build a sense of community among the students, but has provided them with hands-on experiences relevant to their fields. Students have had the option to attend events such as the CSUN Senior Design Showcase and CSUN student social, as well as field trips to: Coronado Navy Base and Burbank Water & Power. The events and field trips have given students an opportunity to interact and converse with students in their field, as well as see and experience subject matter that is applicable to their field and the real world. At the CSUN student social, for example, students went to see CSUN seniors’ student projects. GCC students had a chance to talk with faculty and seniors in the graduating class about their work and get suggestions for transferring. One student stated that this event made “making connections more feasible” to get initial questions answered. One student stated that he/she liked the exposure the group is receiving through trips to schools and facilities since it is important for them to see the opportunities available for engineers.

In addition to these group opportunities for peer-peer interaction, two students had the opportunity to attend the Great Minds in STEM Conference. One of the students who attended stated that the “conference was not only a great opportunity to meet with some bright students from all over the nation, but also talk to professionals of the
field of engineering and learn about their experiences and listen to their inspiring stories. It also helped me [the student] figure out what to focus in in the Aerospace field.”

Description of Project Activities Related to the Objective
College of the Canyons and Glendale Community College, respectively, report specific project activities in detail both immediately above and below.

Project Activities at College of the Canyons
During this performance period College of the Canyons established a drop in tutorial schedule for math, engineering and physics. Three peer tutors for mathematics have been hired and trained. College of the Canyons project faculty and staff are currently developing additional training workshops for peer tutors and, as mentioned earlier, are developing a tracking mechanism for AIMS² scholars using peer tutors.

Project Activities at Glendale Community College
Glendale Community College students are required to participate in tutoring to increase their math, science and language skills. The Glendale Community College Learning Center provides tutoring services for students, and is responsible for screening and training all student tutors. The AIMS² Counselor/Coordinator reminds students of the tutoring support available and their requirement to seek tutoring services. The AIMS² Counselor/Coordinator is continuing to work with CSUN administrators to identify additional CSUN students who can mentor GCC Cohort participants who have not been assigned a mentor. Feedback from Cohort 1 participants, however, suggests that student-mentor relationships are best established naturally (i.e., making connections at the CSUN student social, CSUN Senior Design Showcase), rather than randomly assigned by program administrators. Glendale Community College students will continue to have opportunities for peer-peer interaction by attending club meetings, field trips, and participating in club projects.

Plans to Use of Performance Data to Monitor Progress
College of the Canyons will track all scholar interactions with peer mentors from both College of the Canyons and CSUN. Glendale Community College plans for monitoring performance on these two measures include tracking students participation in tutoring and peer-peer interactions by using the results from the online survey questionnaire and group interview (i.e., participant focus group). Specifically, the quality of peer interactions will be collected in 2013 through student participant focus groups and a follow-up online survey. For the student focus groups, a protocol will be developed to inquire about students’ experiences in their peer mentorship, the types and frequency of activities, and what was most and least beneficial about the support they received. The focus groups will be led by the program evaluators and will be audio recorded as well as have hand-written notes taken during the discussion.
SECTION A - Performance Objectives Information and Related Performance Measures Data

7. Project Objective  [ ] Check if this is a status update for the previous budget period.

Increase the program completion of Hispanic and low-income students in STEM fields

<table>
<thead>
<tr>
<th>7.a. Performance Measure*</th>
<th>Measure Type</th>
<th>Quantitative Data**</th>
</tr>
</thead>
<tbody>
<tr>
<td>After two years, increase from 26% to 30% the number of Hispanic and low-income students who complete baccalaureate degrees in STEM fields over the 2010-11 baseline number</td>
<td>Project</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Target</td>
</tr>
<tr>
<td></td>
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<td>Raw Number</td>
</tr>
<tr>
<td></td>
<td></td>
<td>21/68</td>
</tr>
</tbody>
</table>

*CSUN institutional data (not project cohort data)
**Note that in the ratio columns of the target and actual performance data “the numerator represents the numerical target (e.g., the number of students that are expected to attain proficiency) or actual performance data (e.g., the number of students that attained proficiency), and the denominator represents the universe (e.g., all students served)” (Instructions for Grant Performance Report, p. 7).
***Baseline data (per Instructions for Grant Performance Report)

Explanation of Progress (Include Qualitative Data and Data Collection Information)

Evaluation Data Sources and Methods for the Objective
During the performance period, we collected both baseline and actual performance data on the single performance measure for this objective. That is, quantitative data sources for both baseline and actual performance data for this measure are from CSUN institutional data (from CSUN’s Office of Institutional Research). During the period, we worked with CSUN’s Office of Institutional Research to prepare the 2010-11 baseline data on program completion figures from CSUN and to produce the 2011-12, which marks the end of the first academic year after formation of the student participant cohort (Cohort 1) in the Spring 2012 term, figures of actual performance data on program completion. Of course, during the performance period, CSUN formed the Fall 2012 cohort of student participants (Cohort 2), and we plan to present data for this cohort in next year’s report.

Description of Preliminary Findings Related to the Objective
The baseline data for this measure (1a) is from CSUN’s Office of Institutional Research and includes institutional data (i.e., not project cohort data). Accordingly, the baseline data do not correspond to the number of project cohort participants but rather to all students who met the criteria for inclusion in the transfer cohort (see next sentence). The baseline data for Hispanic and/or low-income students in engineering and computer science at CSUN indicates that the two-year program completion (i.e., graduation) rate for the most recent entry term (Fall 2007) at project formation for Hispanic and/or low-income (i.e., Pell grant recipients) transfer students planning to a major in a field in the College of Engineering and Computer Science was 5.9% (4/68), while the three-year completion rate for the same student population in the same entry term (i.e., Fall 2007) was 26.5% (18/68). This latter rate—26.5%—comprises the baseline data for the project and the basis for which the project target of 30% is set. Given the project target increase, the number of students who graduate is 21/68 (or just over 30%--30.9%). When we interpret actual performance data against the project target of 30.9% (21/68), we find that 29.3% (22/75) completed a degree program for the most recent period for which institutional data are available (Fall 2008 entry term). That is, of the 75 Hispanic and/or low-income transfer students planning to a major in a field in the College of Engineering and Computer Sci-
ence who entered in Fall 2008, 22 students completed a program of study within three years, for a total of 29.3% of all students in the cohort. Given the project target, we can conclude that we have made steady progress toward meeting the performance measure for this objective.

Description of Project Activities Related to the Objective
During the performance period, faculty mentors worked to support this project objective. For example, faculty mentors met with their cohort participants (in both Cohort 1 and starting in Fall 2012 in Cohort 2) to establish a faculty mentoring relationship and coordinate project activities with cohort participants, including cohort meetings and research project groups. Project activities currently under way and/or planned for the current and next performance periods include the following: participation in CSUN’s Tech Fest and Senior Design Project, peer tutoring and peer mentoring, participation undergraduate research projects, projects in an instructional lab of the faculty mentor, and introduction to an appropriate professional society student chapter in a discipline of the faculty mentor.

Plans to Use of Performance Data to Monitor Progress
With both baseline and actual performance data for the performance measure of this objective, we plan to publish the figures from this year’s report on our project’s website (http://www.ecs.csun.edu/aims2/) and discuss progress at our project meetings.
8. Project Objective  [ ] Check if this is a status update for the previous budget period.

Enhance the academic advising capacity in STEM fields at CSUN

<table>
<thead>
<tr>
<th>8.a. Performance Measure*</th>
<th>Measure Type</th>
<th>Quantitative Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increase by one the number of academic advisors at CSUN in STEM fields over the 2010-11 baseline number</td>
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<td>Target</td>
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*Note that the performance measures for this objective have been disaggregated from the original performance measure for reporting purposes only.

<table>
<thead>
<tr>
<th>8.b. Performance Measure*</th>
<th>Measure Type</th>
<th>Quantitative Data</th>
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<tbody>
<tr>
<td>Increase by two the number of advising/counseling sessions with students** in STEM fields over the 2010-11 baseline number</td>
<td>Project</td>
<td>Target</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Raw Number</td>
</tr>
<tr>
<td></td>
<td></td>
<td>116</td>
</tr>
</tbody>
</table>

*Note that the performance measures for this objective have been disaggregated from the original performance measure for reporting purposes only.

**CSUN cohort participants only

Explanation of Progress (Include Qualitative Data and Data Collection Information)

Evaluation Data Sources and Methods for the Objective
Baseline and actual performance data for these two measures were collected through a combination of document data, student recruitment interviews, and student structured journal sources during the performance period. Specifically, we collected baseline and actual performance data for the first project objective (8a) through document data collection in Spring 2012. In addition, we collected Cohort 1 (Spring 2012) baseline data for the second objective (8b) in the CSUN student recruitment process in the late Fall 2011 and early Spring 2012 terms. During recruitment interviews, we asked cohort participant applicants the number of academic advising sessions that they had in the Fall 2011 term or the term immediately prior to the formation of Cohort 1 in Spring 2012. Finally, we collected Cohort 1 (Spring 2012) actual performance data during the period through structured journal data, which cohort participants completed on a monthly basis and submitted in the Moodle (online) project site. Student journaling occurs through student completion of an electronic journal form with items related to project outcomes, including an item related to the number of academic advising sessions for the month. That is, students complete and submit an electronic journal entry related to academic advising (and other project activities) by the end of every month. Once submitted, data extracts in Excel occur, after which a tabulation of the aggregate number of counseling sessions are performed. While baseline data for Cohort 2 (Fall 2012) have been collected, both baseline data and actual performance data for this cohort will be presented in next year’s report.
Description of Preliminary Findings Related to the Objective

Baseline data for the first performance measures (8a) for this objective reveal that CSUN's College of Engineering and Computer Science had three full-time staff academic advisors in 2010-11. Given that the college had three staff academic advisors prior to the project, the project target is four total academic advisors. During the first project year (2012-13), we augmented the academic advising capacity of the college through the seven faculty mentors who include academic advising with their cohort participants. Further, actual performance data for the first performance measure (8a) demonstrate that, during the first project performance period (2012-13), we met the project target and achieved this component of the project objective with the addition of one new staff academic advisor to the college. The staff academic advisor, LaTeesha Hagler, works with the student services office of the college and coordinates project activities related to cohort participant advising. With Tesha’s arrival, the college now has four staff academic advisors in total, one above the baseline data. Given the actual performance data (n=4) and the project target (n=4), we have met this performance measure of the objective.

When we turn to the second performance measure (8b) of this objective, we find baseline data collection for Cohort 1 (Spring 2012) began with the CSUN student recruitment process in the late Fall 2011 and early Spring 2012 terms. During recruitment interviews, we asked cohort participant applicants the number of academic advising sessions that they had in the Fall 2011 term or the term immediately prior to the formation of Cohort 1 in Spring 2012. After aggregating the results, the number of academic advising sessions that CSUN cohort participants reported prior to project entry is 56 (CSUN students only), which represents the baseline figure for this measure. Given the project target of increasing the number of academic advising sessions by two sessions per student, the current target number of sessions for the project is 116. We derived this target by multiplying the number of unduplicated student headcount of current Cohort 1 participants at CSUN (n=30) by two (sessions per student) and adding 56 sessions to the total for a total of 116 total academic advising sessions. Further, actual performance data for the second performance measure (8b)—collected through cohort participant journaling during the performance period—reveals that cohort participants reported 90 total academic advising sessions through the end of the performance period. This figure (n=90) represents 78% of the total project target (n=116) and demonstrates substantial progress toward the project target of 116 total academic advising sessions.

Description of Project Activities Related to the Objective

Current and planned project activities that support the two performance measures for this objective include faculty mentoring, career advising, academic advising in the student services center, an Academic Success Center, and Facilitated Academic Workshops.

Plans to Use of Performance Data to Monitor Progress

Data collection to support performance measure 8b commenced in February 2012 with student journaling (via a web-based form in the project management site in Moodle) and will continue on an ongoing basis through the next performance period. We anticipate the reporting of more actual performance data for second measure (8b) in the next performance report and plan to monitor progress on this second measure through use of Moodle for student journaling and discussion of the results of the journaling in project meetings.
9. Project Objective  |  | Check if this is a status update for the previous budget period.

Enhance the academic participation rate of CSUN students in STEM classes, particularly in classes identified as barriers to retention, persistence, and completion in STEM fields

### 9.a. Performance Measure*

Increase by 75 percent the students who participate in tutoring sessions in STEM classes (identified as barriers) over the 2010-11 baseline rate

<table>
<thead>
<tr>
<th>Measure Type</th>
<th>Quantitative Data**</th>
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<tbody>
<tr>
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<tr>
<td>9.a. Performance Measure*</td>
<td>Increase by 75 percent the students who participate in tutoring sessions in STEM classes (identified as barriers) over the 2010-11 baseline rate</td>
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</table>

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### 9.b. Performance Measure*

Increase by 75 percent the students who participate in STEM academic workshops over the 2010-11 baseline rate

<table>
<thead>
<tr>
<th>Measure Type</th>
<th>Quantitative Data**</th>
</tr>
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<tbody>
<tr>
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<tr>
<td></td>
<td>Raw Number</td>
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<tr>
<td>9.b. Performance Measure*</td>
<td>Increase by 75 percent the students who participate in STEM academic workshops over the 2010-11 baseline rate</td>
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### 9.c. Performance Measure*

Increase by 75 percent the students who participate in supplemental labs sessions with CSUN faculty over the 2010-11 baseline rate

<table>
<thead>
<tr>
<th>Measure Type</th>
<th>Quantitative Data**</th>
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</thead>
<tbody>
<tr>
<td></td>
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<td></td>
<td>Raw Number</td>
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<tr>
<td>9.c. Performance Measure*</td>
<td>Increase by 75 percent the students who participate in supplemental labs sessions with CSUN faculty over the 2010-11 baseline rate</td>
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*Note that the performance measures for this objective have been disaggregated from the original performance measure for reporting purposes only.

**Note that in the ratio columns of the target and actual performance data “the numerator represents the numerical target (e.g., the number of students that are expected to attain proficiency) or actual performance data (e.g., the number of students that attained proficiency), and the denominator represents the universe (e.g., all students served)” (Instructions for Grant Performance Report, p. 7).
Explanation of Progress (Include Qualitative Data and Data Collection Information)

Evaluation Data Sources and Methods for the Objective
With respect to baseline data for these three performance measures of this objective, data collection began with the Cohort 1 (Spring 2012) student recruitment process in late Fall 2011 and early Spring 2012 terms. During the interview process, we asked cohort applicants for Cohort 1 the number of tutoring sessions, academic workshops, and supplemental lab sessions in which they had participated in the Fall 2011 term.

Description of Preliminary Findings Related to the Objective
During the performance period, baseline data for the three performance measures of this objective reveal that the number of Cohort 1 students who reported having participated in tutoring sessions is 15 students, while the total number of Cohort 1 students who reported having participated in an academic workshop is six students. Further, only one Cohort 1 student had reported participating in supplemental lab sessions prior to project entry (i.e., in Fall 2011) during the recruitment interview process. These three figures relate to the number of students (i.e., headcount) rather than sessions or workshops. Accordingly, these three figures represent Cohort 1 baseline data for these three measures, respectively. Given the baseline data, the current project targets—all of which represent a 75% increase—for the three measures are 26 students (9a), 11 students (9b), and 2 students (9c). In contrast, actual performance data for the three measures for Cohort 1, collected through structured journaling, reveal that 23 students reported participating in tutoring sessions (performance measure 9a). As a performance measure that requires us to collect headcount data rather than frequency data, this figure demonstrates substantial progress toward the project target for student participation in tutoring sessions and represents 77% (23/30) of Cohort 1 participants. In fact, actual performance data for this performance measure indicate that the number of students who participated in tutoring (n=23) approached the target (n=26). With respect to performance measure 9b, 15 students reported participating in academic workshops through the period, which represents 25% (15/30) of Cohort 1 participants and indicates that actual performance data (n=15) exceeded the project target (n=11) and progress toward the project objective has been achieved for this performance measure. Finally, with respect to performance measure 9c, nine Cohort 1 students reported participating in a supplemental lab. Accordingly, actual data indicate that performance in this area of the objective (i.e., 30% of all Cohort 1 participants) exceeded the project target (n=2), suggesting that this project performance measure 9c has been achieved during the period. Taken together, actual performance data on these three measures demonstrate substantial progress in meeting this project objective related to increasing student participation by 75% in tutoring, academic workshops, and supplemental labs.

Description of Project Activities Related to the Objective
With respect to the first performance measure (9a), after the formation of the Cohort 1 in January 2012, we turned our attention to recruiting, hiring, and assigning classes to peer tutors from CSUN to work with cohort participants. Project faculty and staff developed a process to advertise, recruit, hire, and train peer tutors from CSUN’s upper-division undergraduate and graduate students in the College of Engineering and Computer Science. As part of the process, faculty mentors worked with project staff to identify the “bottleneck” and/or “gateway” courses where tutoring may be needed for cohort participants. With the recent selection and hiring of peer tutors (February-March 2012), tutoring services are available to cohort participants. With these strategies, we seemed to have supported an increase in cohort participant use of peer tutoring and peer mentoring. On this point, one faculty mentor (through structured journaling) reported that “adding a clause into the contract about meeting the student mentor and tutor is helping” and that “having a tutor on call was another good idea.” In addition to these activities related to the first performance measure (9a), planned activities related to the second performance measure (9b) include an Academic Success Center, where workshops may be hosted, participation in Facilitated Academic Workshops, and participation in regional workshops of appropriate professional societies (on the recommendation of faculty mentors). To support our efforts in this area, we plan to post and disseminate information on upcoming workshops on our project’s website (http://www.ecs.csun.edu/aims2/) on the “Workshop Schedules” page. Finally, faculty mentors formed and/or plan to form small group sessions with cohort participants in their instructional labs (to support performance measure 9c). As part of the project, we received the HP tablets (2760’s) and loaded DyKnow, the software that allows users to collaborate interactively on them so that faculty mentors and cohort participants can use them during supplemental lab, research, or mentor sessions.

Plans to Use of Performance Data to Monitor Progress
Data collection to measure actual performance on these three performance measures for this objective consists of survey data collection (e.g., cohort journaling), which occurs through student completion of an electronic journal form with items related to project outcomes. Specifically, we included items to measure performance in these three objectives when we ask students to indicate the number of sessions or workshops that they attended in the past month, including the number of supplemental lab sessions, the number of academic advising sessions, and the number of academic workshops. The journaling process occurs when students complete and submit an electronic journal entry by the end of every month. Once submitted, data extracts in Excel occur, after which a tabulation of the aggregate number of counseling sessions...
are performed. Finally, we plan to continue student journaling so that we can continue monitoring and reporting actual performance data for all three measures in the performance report for next year’s project period. Specifically, we plan to use the results from this data collection process to monitor progress on three performance measures related to this objective at monthly project meetings.
**SECTION A - Performance Objectives Information and Related Performance Measures Data** (See Instructions. Use as many pages as necessary.)

### 10. Project Objective

| Check if this is a status update for the previous budget period. |

Enhance the research participation rate of CSUN students in STEM fields

#### 10.a. Performance Measure*

<table>
<thead>
<tr>
<th>Increase by 50% CSUN students who participate in research-related activities with faculty in STEM fields</th>
</tr>
</thead>
</table>
| **Measure Type** | **Quantitative Data****
| Project | Target | Actual Performance Data |
| Raw Number | Ratio | % | Raw Number | Ratio | % |
| 1/30 | 3 | 16/30 | 53 |

*Note that the performance measures for this objective have been disaggregated from the original performance measure for reporting purposes only.

**Note that in the ratio columns of the target and actual performance data “the numerator represents the numerical target (e.g., the number of students that are expected to attain proficiency) or actual performance data (e.g., the number of students that attained proficiency), and the denominator represents the universe (e.g., all students served)” (Instructions for Grant Performance Report, p. 7).

#### 10.b. Performance Measure*

<table>
<thead>
<tr>
<th>Improve the research interests/skills of CSUN students in STEM fields</th>
</tr>
</thead>
</table>
| **Measure Type** | **Quantitative Data**
| Project | Target | Actual Performance Data |
| Raw Number | Ratio | % | Raw Number | Ratio | % |
| / | / | / |

*Note that the performance measures for this objective have been disaggregated from the original performance measure for reporting purposes only.

Explanation of Progress (Include Qualitative Data and Data Collection Information)

**Evaluation Data Sources and Methods for the Objective**

**Quantitative Data Sources and Data Collection Procedures for Performance Measure 10a**

For Cohort 1 (Spring 2012), data collection for the first performance measure (10a) of this objective commenced with cohort recruitment process in late Fall 2011 and early Spring 2012 terms. During the interview process, we asked cohort applicants the number of faculty research-related sessions that they had in the Fall 2011 term (one term prior to project entry). After aggregating the results, we found that no Cohort 1 students had participated in a faculty research session prior to entry into the project. Accordingly, the Cohort 1 project target for the first performance measure is one student, an increase of over 50% of the baseline figure. Data collection to measure actual performance on these two performance measures consists of a combination of document data and survey/questionnaire data collection (e.g., structured journaling), which occurs through student completion of a web-based journal form with items related to project objectives. Specifically, we included items to assess performance on measure 10a of this objective when we ask students to indicate the number of faculty research sessions that they attended in the past month. Once submit-
ted, data extracts in Excel occur, after which a tabulation of the aggregate number of research-related sessions with faculty are performed. In addition to student journaling, student interviews (detailed below) allow us to collect data on how participation in project activities has improved the research interests/skills of cohort participants.

**Interview Data Sources and Sample for Performance Measure 10b**
The data sources that we used for performance measure 10b consisted of 8 AIMS2 Cohort 1 participants. We selected the participants using a mixed sampling strategy of criterion and stratified purposeful sampling. Specifically, we employed a criterion sampling to select participants that met specific criteria for participating in the AIMS2 program. The criteria that we used to select interviewees mirrored the criteria for participation in the AIMS2 project, which include transfer status as a student from a Hispanic group and/or group that is economically, educationally and environmentally disadvantaged and is a declared STEM major enrolled full time in CECS programs. Additional criteria for inclusion in the interviews map to project participation requirements, including the following: (a) pass all courses enrolled in each semester; (b) continue to be a declared STEM major; (c) enroll in a minimum of 12 units each semester; (d) earn a grade of “C+” or better in each class enrolled; and (e) participate in all components of the program. As part of the mixed sampling strategy, in addition to the criterion strategy described above, we employed a stratified purposeful sample. As such, we selected 8 participants from Cohort 1 for interviews with a stratification based on gender, ethnicity, and program major. That is, we reviewed the full roster of AIMS2 students in Cohort 1 and selected female participants first, as they were represented less in number, and worked to ensure female participation and inclusion in interviews. Then, we selected female participants according to their ethnicity and major. After selecting female participants, we selected male participants based on their ethnicity and major. The goal of this sampling strategy was to create strata to vary the majors and obtain a sample of at least one student within each major offered through the respective departments in the college. In terms of gender, the final sample consists of 3 females and 5 males. With respect to ethnicity, the final sample has 2 Mexican-Americans (1 male and 1 female); 1 Hispanic/Latino male; 1 Asian male; 1 White/Persian/Armenian male; 1 White female; 1 Middle Eastern female; and 1 Peruvian/Ecuadorian male. In addition, the final sample consists of major courses of study across engineering and computer science fields, including 3 Mechanical Engineering (2 females and 1 male); 1 Computer Science and Applied Mathematics (male); 1 Computer Engineering (female); 1 Civil Engineering (male); 1 Construction Management (male); and 1 Electrical Engineering (male).

**Interview Data Collection Instruments and Procedures for Performance Measure 10b**
The primary instrument that we used to collect data from Cohort 1 participants is an interview protocol. We designed the interview protocol to collect descriptive data related to the cohort students’ participation and experiences of research interests and skills. We asked the cohort participants to respond to the following main question to guide the conversation: Talk about your experiences participating in research projects with your faculty mentor in the AIMS2 program. In addition to this main question, we asked follow-up and probing questions, including the following: What have done for the research activity? How has participating in the research activity/project changed you? How does participation in these projects prepare you academically for classes and your career? With the interview protocol, we conducted one-on-one, 60-minute personal interviews with Cohort 1 participants, who we invited to participate in the interviews through email. Once we received their response, we set a mutual time for the interview. The Dean’s office arranged a secure, quiet room available for the interviews, which we conducted during the Summer 2012 session. After the interviews, we assigned each cohort participant a two digit random number. During the interview session, we read an informed consent form aloud to the participants and audio recorded the session. Upon completion of the interviews, we transcribed the audio files into a transcribed data file. After producing transcribed data files, the recorded audio files were destroyed. We stored the transcribed files on a password-protected, secure laptop. In addition, we stored hard copies of transcribed data files in brown envelopes with their identifying two digit numbers visible within a secure filing cabinet accessible only to the evaluators.

**Interview Data Analysis Procedures for Performance Measure 10b**
After transcription, the transcript was ready for coding and thematic data analysis. We conducted the primary analysis through ATLAS.ti, a computer-aided qualitative data analysis software program. Specifically, we used the themes that emerged from the ATLAS.ti analysis and from codes developed in hard copy transcribed data files. We then categorized the themes that emerged from codes that we clustered according to experiences and interactions of the cohort participants. These categories were used to align thematic findings to the performance measures associated with program objectives. Finally, we extracted direct quotes from interviewees to illustrate themes and support overall findings from data analysis and interpretation.

Overall, given that student journaling began in February 2012 for the current performance period and that student interviews took place over the Summer 2012 session, we are reporting actual performance data for both measures for the first year of the project period. In addition to the procedures described above, student interviews are used here to assess the second performance measure (10b). For this performance period, we used these two procedures to support a mixed-methods approach with the collection of both quantitative and qualitative data.
Description of Preliminary Findings Related to the Objective

Preliminary Findings for Performance Measure 10a
Actual performance data for this first measure indicate that we have achieved this part of this objective. In fact, during the current performance period, over half of Cohort 1 participants (n=16) participated in faculty research, which represents 53% of all Cohort 1 participants and a dramatic increase over the baseline figure (n=0). As a result, actual performance data related to this performance measure (10a) of this objective demonstrate that we have exceeded the project target (n=1) and achieved this part of this objective.

Preliminary Findings for Performance Measure 10b
In terms of the second performance measure (10b)—which measures the improvement of research skills and interest in research—actual performance data indicate that cohort students (in Cohort 1) participated in a variety of research activities during the period. These activities included research work on a Formula SAE racing vehicle, research in computer science applications and software designs, and rebuilding an engine and related thermal dynamics designs. When we examined the effects of participating in faculty research projects on cohort participants we found a strong, positive influence. Specifically, we found that interviewees characterized their experiences as shaping a sense of accomplishment as they continued in the research started by previous students. On this point, one cohort participant stated, “I feel positive and more confident in my research.” Another cohort participant remarked: “[Redacted] is creating an [redacted] and [redacted] is showing me how to do it.” As a result of his connection to a faculty mentor in the project, one interviewee obtained a research position.

While a majority of interviewees (n=5) reported a sense of accomplishment from their participation in faculty research, a few interviewees (n=3) faced challenges to participating in faculty research projects. On this point, one student shared that he or she did not “have a research project” because he or she had “no time.” Clearly, this student had time constraints that prevented him or her from participating. Other students, however, cited fewer opportunities to participate. For example, one student remarked, “Not involved in any research projects. There wasn’t any for me.” Another student shared: “No notice given about any research projects then it was too late, I got a job.” Finally, one student seemed to reference that there were opportunities to participate in faculty research but needed more personal contact to learn more about the opportunity. On this note, he or she described: “I have no research experiences. I got emails, but no one talked about it. I wasn’t sure how to find out.” While these few students shared the above concerns related to research, we should note that participation in research sponsored by faculty mentors is a selective opportunity and that faculty mentors invite cohort participants to participate in research projects.

Overall, even with the comments from these few students referenced above, students who participated in research with faculty mentors generally felt that their time involved in these projects prepared them academically for their classes. Illustrating this point, one cohort participant stated, “After participating in the research projects, I felt better about my classes, I understood the material more.” Yet another cohort participant shared that “working on the [redacted] helps me to learn concepts.” When we looked more closely at how participating in faculty research supported their academic performance, we discovered that these activities afforded them an opportunity to be presented with typical problems and solutions in their fields. For example, one cohort participant working on a project stated simply, “I was learning techniques used in the field.” Another student responded: “I am not sure what I want to do when I graduate. I have also met alumni who could help me too.” Finally, participants felt that their involvement in the research activities and projects presented them with a practical skill set for their academic studies and careers after graduation. In one student’s response, he shared: “Being able to work in a group teaches me skills for later on, like work plans and how to be a part of a group.” Another student shared: “Doing research with [redacted] helped me to think critically about my future career.”

Description of Project Activities Related to the Objective
During the current performance period, faculty mentors worked to develop research-related activities with Cohort 1 and Cohort 2 (which formed in Fall 2012) participants. Current and/or planned activities that faculty mentors considered for Cohort 1 and Cohort 2 participants during the period include projects in one of their instructional labs, research projects that they may have been working, and participation in related student professional events, networking, and competitions such as Young Engineering Day, SHPE National Design Competition, Formula SAE, National Steel Bridge, WESTEC Manufacturing Challenge, UAV, Autonomous Helicopter, and SS12 Code for a Cause, etc. Further, faculty mentors reported (through structured journaling) that during the period they supported the development of research skills and interest in research through research project group coordination and meetings (including the recruitment of cohort participants for summer research). Project activities for the current performance period included small group mentoring sessions with faculty mentors, individual faculty mentoring appointments, student participation in CSUN’s Tech Fest and Senior Design Project, student participation undergraduate research projects both during the academic year and Summer 2012,
student participation in projects in instructional labs of faculty mentors, introduction to an appropriate professional society student chapters in the discipline of the faculty mentor. The Summer 2012 research projects with faculty mentors included the following:

Professors Stewart Prince and Bob Ryan:
"Thermal-Fluids Lab Summer Research" with 1 CSUN student and 1 GCC student
"Design of a Solar Energy Demonstration Unit / Redesign of a Human Powered Vehicle Drive Train" with 2 students from COC

Professor Behzad Bavaria:
“Evolution of Special Boundaries in Grain Boundary Engineered Nickel” with 1 CSUN student
“Polymer Protective Barriers for Improved Implantable Glucose Sensor Life” with 1 COC student

Professor Bruno Osorno:
"Microntroller Interface for Motor Control Using Bluetooth and Arduino Technologies” with 3 CSUN students and 1 GCC student

Professor Amine Ghanem:
“ASCE Steel Bridge Competition: How to improve the process?” with 1 CSUN student
“Creating Simulation Model for ICF Walls” with 1 CSUN student
“PAD System versus CMU Walls” with 1 CSUN student

Professor Gloria Melara:
“Introduction to Language and Artificial Intelligence Summer Project” with 2 students from GCC

Finally, within the context of support for Hispanic students in CSUN’s College of Engineering and Computer Science, an example of how the project has an on-going efforts to support Hispanic students, is their involvement in SHPE National Design Competitions. Other cohort activities during the period include the continued involvement in other student chapters of professional organizations related to minority inclusion. In recent project meetings, faculty mentors discussed presenting a “research exchange” to future cohorts and other students at GCC and COC of current projects.

**Plans to Use of Performance Data to Monitor Progress**

With actual performance measure data for both measures in this project objective for this period, we have reported baseline and actual performance measure in this report. As a result, we plan to continue to monitor progress on both performance measures through use of structured journaling in Moodle and student interviews planned for next year. During the next performance period, discussions of results from both data collection procedures will support the monitoring or progress of this objective.
SECTION A - Performance Objectives Information and Related Performance Measures Data (See Instructions. Use as many pages as necessary.)

11. Project Objective  [ ] Check if this is a status update for the previous budget period.

Increase and enhance student-faculty interaction in STEM fields at CSUN

11.a. Performance Measure*

Increase by 90 percent the frequency of student-faculty interactions over the 2010-11 baseline rate

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*Note that the performance measures for this objective have been disaggregated from the original performance measure for reporting purposes only.

**Note that in the ratio columns of the target and actual performance data “the numerator represents the numerical target (e.g., the number of students that are expected to attain proficiency) or actual performance data (e.g., the number of students that attained proficiency), and the denominator represents the universe (e.g., all students served)” (Instructions for Grant Performance Report, p. 7).

11.b. Performance Measure*

Improve the quality of interactions between CSUN students and faculty in STEM field

| Measure Type | Quantitative Data *
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*Note that the performance measures for this objective have been disaggregated from the original performance measure for reporting purposes only.

Explanation of Progress (Include Qualitative Data and Data Collection Information)

Evaluation Data Sources and Methods for the Objective

Evaluation Data Sources and Methods for Performance Measure 11a

With Cohort 1 participants in the current performance period, we employed both student structured journals and student interviews to assess the two performance measures of this objective. These two data collection procedures represent a mixed-methods approach with the collection of both quantitative and qualitative data. In the student journals, which are guided by a set of close- and open-ended items, we ask respondents to indicate the number of interactions during the month and the types of interactions, including in-class interaction, faculty office hours, email contact, phone contact, Moodle interaction (online), supplemental lab session, faculty research session, individual mentor appointment, group mentor meeting, on-campus project event, off-campus project event, or other event. Further, we ask cohort participants to describe their interactions with their faculty mentor during the month. In addition to structured journaling, we conducted cohort participant interviews in Summer 2012, which we detail below.
Interview Data Sources and Sample for Performance Measure 11b

The data sources that we used for performance measure 11b consisted of 8 AIMS² Cohort 1 participants. We selected the participants using a mixed sampling strategy of criterion and stratified purposeful sampling. Specifically, we employed a criterion sampling to select participants that met specific criteria for participating in the AIMS² program. The criteria that we used to select interviewees mirrored the criteria for participation in the AIMS² project, which include transfer status as a student from a Hispanic group and/or group that is economically, educationally and environmentally disadvantaged and is a declared STEM major enrolled full time in CECS programs. Additional criteria for inclusion in the interviews map to project participation requirements, including the following: (a) pass all courses enrolled in each semester; (b) continue to be a declared STEM major; (c) enroll in a minimum of 12 units each semester; (d) earn a grade of “C+” or better in each class enrolled; and (e) participate in all components of the program. As part of the mixed sampling strategy, in addition to criterion strategy described above, we employed a stratified purposeful sample. As such, we selected 8 participants from Cohort 1 for interviews with a stratification based on gender, ethnicity, and program major. That is, we reviewed the full roster of AIMS² students in Cohort 1 and selected female participants first, as they were represented less in number, and worked to ensure female participation and inclusion in interviews. Then, we selected female participants according to their ethnicity and major. After selecting female participants, we selected male participants based on their ethnicity and major. The goal of this sampling strategy was to create strata to vary the majors and obtain a sample of at least one student within each major offered through the respective departments in the college. In terms of gender, the final sample consists of 3 females and 5 males. With respect to ethnicity, the final sample has 2 Mexican-Americans (1 male and 1 female); 1 Hispanic/Latino male; 1 Asian male; 1 White/Persian/Armenian male; 1 White female; 1 Middle Eastern female; and 1 Peruvian/Ecuadorian male. In addition, the final sample consists of major courses of study across engineering and computer science fields, including 3 Mechanical Engineering (2 females and 1 male); 1 Computer Science and Applied Mathematics (male); 1 Computer Engineering (female); 1 Civil Engineering (male); 1 Construction Management (male); and 1 Electrical Engineering (male).

Interview Data Collection Instruments and Procedures for Performance Measure 11b

The primary instrument that we used to collect data from Cohort 1 participants is an interview protocol. We designed the interview protocol to collect descriptive data related to the cohort students’ interactions with faculty. We asked the cohort participants to respond to the following main questions to guide the conversation, in addition to follow-up and probing questions: Describe two recent interactions with a faculty member in engineering or computer science. Walk through the steps of the interaction from beginning to end. Describe an interaction with your AIMS² faculty mentor that you consider positive. Walk through the steps of the interaction from beginning to end. Describe how your interactions with the faculty mentor have changed since being in the AIMS² program. In contrast, describe an interaction with a faculty member that you consider negative. Walk through the steps of the interaction from beginning to end. Describe how your interactions with faculty have changed since being in the HSI-STEM program. With the interview protocol, we conducted one-on-one, 60-minute personal interviews with Cohort 1 participants, who we invited to participate in the interviews through email. Once we received their response, we set a mutual time for the interview. The Dean’s office arranged a secure, quiet room available for the interviews, which we conducted during the Summer 2012 session. After the interviews, we assigned each cohort participant a two digit random number. During the interview session, we read an informed consent form aloud to the participants and audio recorded the session. Upon completion of the interviews, we transcribed the audio files into a transcribed data file. After producing transcribed data files, the recorded audio files were destroyed. We stored the transcribed files on a password-protected, secure laptop. In addition, we stored hard copies of transcribed data files in brown envelopes with their identifying two digit numbers visible within a secure filing cabinet accessible only to the evaluators.

Interview Data Analysis Procedures for Performance Measure 11b

After transcription, the transcript was ready for coding and thematic data analysis. We conducted the primary analysis through ATLAS.ti, a computer-aided qualitative data analysis software program. Specifically, we used the themes that emerged from the ATLAS.ti analysis and from codes developed in hard copy transcribed data files. We then categorized the themes that emerged from codes that we clustered according to experiences and interactions of the cohort participants. These categories were used to align thematic findings to the performance measures associated with program objectives. Finally, we extracted direct quotes from interviewees to illustrate themes and support overall findings from data analysis and interpretation.

Description of Preliminary Findings Related to the Objective

Preliminary Findings for Performance Measure 11a

To support the development of cohort baseline figures for the first performance measure, during the Cohort 1 (Spring 2012) applicant interview we asked interviewees the number of student-faculty interactions that they had in the Fall 2011. Results from interview responses suggest that students in the current (Spring 2012) cohort logged a total of 443 separate interactions with faculty in Fall 2011 prior to cohort entry in Spring 2012. This figure represents the current baseline data for the first performance measure (11a), which serves to set the current project target of 842 total interactions between students and faculty. When we examine actual performance
Preliminary Findings for Performance Measure 11b

The second performance measure (11b) relates to the quality of student-faculty interaction, which required us to collect textual data from interviews with cohort participants. Over the past year, we can report from interview data analysis that—on the whole—cohort participants reported positive interactions with faculty. Indeed, results from data analysis indicate that all eight students interviewed shared positive interactions with faculty mentors, particularly with faculty being responsive to their academic needs. In fact, one cohort participant stated, “My faculty mentor is very helpful and is always willing to listen.” Another cohort participant stated, “I see my mentor a lot but sometimes [redacted] is friendly and we just talk but other times [redacted] is serious.” Still another student expressed how he appreciates the availability of faculty mentors by stating, “I had a conflict with his office hours, but when I talked to [redacted] in class, we were able to work a time to meet that was different than [redacted] office hours.”

With more practical considerations, cohort participants expressed that their faculty mentor was willing to help, provide support, and advise them with course selection and major field of study. On this point, one cohort participant stated, “[redacted] helped to select my courses from my senior year into the Masters’ program. All I have to do is to select a specialty.” In addition, students felt that their faculty mentor was instrumental in career development. For example, one student shared: “My faculty mentor knows about internships and research projects I can get involved in.” A cohort participant stated, “My faculty mentor helped me to prepare for what a career is like as an engineer.”

Another component of faculty-student interaction that we found in participant responses relates to faculty-cohort group meetings. Specifically, faculty-cohort group meetings seemed to positively affect students by facilitating more frequent interaction with faculty mentors, helping in meeting other cohort participants (peer-peer interaction), and talking about challenges with classes and the program. To this point, one student stated, “I go to the [redacted] meetings and they helped me to meet other cohort members.” Likewise, another student commented about faculty-cohort group meetings as such: “They are great…I do better in my classes now because my faculty mentor helps us study for classes and finals.”

Another cohort participant said, “faculty mentors help us to manage our notes and exchange study information when we are in the [redacted] groups.” Overall, the effects of faculty mentor-cohort participant interaction can be summed up by this student’s statement: “Before becoming to the AIMS² Program I hadn’t had much advising with picking out courses, but since I started AIMS² I see my faculty mentor a lot.” He continued: “my faculty mentor is like a parent-tough love. [redacted] guides me on the right path. [redacted] tells me exactly what I have to do.”

Another student talked about his relationship with his faculty mentor, sharing: “[redacted] gives me advice and shows me how to manage my time.” Yet another student felt: “My faculty mentor changed my attitude about homework, changing my bad habits, and volunteering with other people involved in my major.”

Description of Project Activities Related to the Objective

Overall, project activities are intended to facilitate frequent and quality student-faculty interaction in the current performance period. To that end, faculty mentors met with their cohort participants early in the Spring 2012 term (Cohort 1) and early Fall 2012 term (Cohort 2) to establish a faculty mentoring relationship; plan project activities; and to design research activities. More specifically, during the current performance period, faculty mentors reported (through structured journaling) that interacting with cohort participants facilitated the development of the peer tutor/mentor program (including introductions for AIMS² cohort participants to peer tutors and meetings with peer mentors), academic advisement and individual student meetings, supervision of student club/organization and club start-up, and coordination and facilitation of small group workshops. In addition, faculty mentors reported that during the performance period they interacted with cohort participant through multiple modes of communication by responding to email messages and phone calls and securing permission numbers for closed classes for cohort participants. More broadly, the AIMS² project presented the Summer 2012 research projects to the incoming Cohort 2 during orientation in September 2012, which was a key opportunity for faculty mentors to interact with students. Finally, some AIMS² Cohort 1 participants developed a poster session display of their summer research projects for the incoming Cohort 2 under the advisement of their faculty mentors (see performance measure 10b above). As upcoming events and activities approached, they were included on a calendar on the project’s website (http://www.ees.csun.edu/aims2/) under the “Upcoming Events” and “Field Trips” pages.

Plans to Use of Performance Data to Monitor Progress

During the current performance period, data collection for both performance measures (11a/11b) demonstrates substantive progress toward achieving this project objective. With the results from student journaling that began in February 2012 and student interviews from Summer 2012, we have presented actual performance data for both measures to the project team. Further, we have used results from data collection in both Moodle and interviews to monitor progress in meeting this objective. Specifically, we have used Moodle cohort participant journal results to assess further progress on the first performance measure (11a) and student interviews to evaluate progress on the second performance measure (11b). During the next performance period, our plans to use data collected through these procedures include discussions.
of the results in project meetings to address areas of improvement. Specifically, we plan to present data collected through both cohort participant interviews and faculty mentor journals. With respect to the latter, we plan to structure a presentation around themes that emerged during data analysis from the current performance period, including focus areas to facilitate student involvement in project activities and program policies on student non-participation in faculty mentor/project activities. Indeed, we found that faculty mentors (through structured journaling) reported that some cohort participants “only interact with the faculty advisor if they are forced to” and others “haven’t shown up a single time” or “aren’t interested.” Another faculty mentor seemed to agree: “It is clear that a few students in the cohort are not making an effort to get engaged with their faculty mentor.” While actual performance data for the period indicate that cohort participants generally engaged in faculty mentor activities, we may need to discuss strategies about how to exercise control over how and when a student can be asked to leave the program for not participating in faculty mentor/project activities. On this point, one faculty mentor shared: “My biggest problem with the program is the lack of control I have over the student. I cannot tell the students who do not participate to come in the lab ‘or else.’ I have no grade to hang over their head.”
12. Project Objective  [ ] Check if this is a status update for the previous budget period.

Enhance the peer environment of CSUN students in STEM fields

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*Note that the performance measures for this objective have been disaggregated from the original performance measure for reporting purposes only.

**Note that in the ratio columns of the target and actual performance data “the numerator represents the numerical target (e.g., the number of students that are expected to attain proficiency) or actual performance data (e.g., the number of students that attained proficiency), and the denominator represents the universe (e.g., all students served)” (Instructions for Grant Performance Report, p. 7).

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*Note that the performance measures for this objective have been disaggregated from the original performance measure for reporting purposes only.

**Note that in the ratio columns of the target and actual performance data “the numerator represents the numerical target (e.g., the number of students that are expected to attain proficiency) or actual performance data (e.g., the number of students that attained proficiency), and the denominator represents the universe (e.g., all students served)” (Instructions for Grant Performance Report, p. 7).

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*Note that the performance measures for this objective have been disaggregated from the original performance measure for reporting purposes only.

**Note that in the ratio columns of the target and actual performance data “the numerator represents the numerical target (e.g., the number of students that are expected to attain proficiency) or actual performance data (e.g., the number of students that attained proficiency), and the denominator represents the universe (e.g., all students served)” (Instructions for Grant Performance Report, p. 7).
12.d. Performance Measure*

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*Note that the performance measures for this objective have been disaggregated from the original performance measure for reporting purposes only.

Explanation of Progress (Include Qualitative Data and Data Collection Information)

Evaluation Data Sources and Methods for the Objective

Quantitative Data Sources and Data Collection Procedures for Performance Measures 12a, 12b, and 12c

For Cohort 1, data collection for these four measures of this objective includes cohort participant recruitment interviews, structured journaling by cohort participants, and personal interviews with selected cohort participant during the this performance period. Specifically, data collection began with the Cohort 1 recruitment process in the late Fall 2011 and early Spring 2012 terms. During the interview process, we asked cohort applicants the number of peer-tutoring and peer-mentoring sessions that they had in the previous six months. In addition to data collection for the baseline measures, data collection to measure actual performance on the four measures consists of survey data collection (e.g., cohort journaling) and student interviews. With respect to the former, we included items to assess performance in these measures related to peer-peer interaction. In the journal, we ask cohort participants to indicate the number and types of interactions with peer mentors, peer tutors, and fellow cohort participants. The types of interactions under these three categories include: in-class interaction, Moodle interaction (online), email contact, phone contact, text message contact, social media interaction, faculty research session, supplemental lab session, group mentor/tutor session, on-campus project event, off-campus project event, and other event. Once submitted, data extracts in Excel occur, after which a tabulation of the aggregate number of peer tutoring, peer mentoring, and peer-peer interaction are performed. In addition to structured journaling, personal interviews were conducted in Summer 2012 and interview data were transcribed and analyzed in Fall 2012.

Interview Data Sources and Sample for Performance Measure 12d

The data sources that we used for performance measure 12d consisted of 8 AIMS² Cohort 1 participants. We selected the participants using a mixed sampling strategy of criterion and stratified purposeful sampling. Specifically, we employed a criterion sampling to select participants that met specific criteria for participating in the AIMS² program. The criteria that we used to select interviewees mirrored the criteria for participation in the AIMS² project, which include transfer status as a student from a Hispanic group and/or group that is economically and environmentally disadvantaged and is a declared STEM major enrolled full time in CECS programs. Additional criteria for inclusion in the interviews map to project participation requirements, including the following: (a) pass all courses enrolled in each semester; (b) continue to be a declared STEM major; (c) enroll in a minimum of 12 units each semester; (d) earn a grade of “C+” or better in each class enrolled; and (e) participate in all components of the program. As part of the mixed sampling strategy, in addition to the criterion strategy described above, we employed a stratified purposeful sample. As such, we selected 8 participants from Cohort 1 for interviews with a stratification based on gender, ethnicity, and program major. That is, we reviewed the full roster of AIMS² students in Cohort 1 and selected female participants first, as they were represented less in number, and worked to ensure female participation and inclusion in interviews. Then, we selected female participants according to their ethnicity and major. After selecting female participants, we selected male participants based on their ethnicity and major. The goal of this sampling strategy was to create strata to vary the majors and obtain a sample of at least one student within each major offered through the respective departments in the college. In terms of gender, the final sample consists of 3 females and 5 males. With respect to ethnicity, the final sample has 2 Mexican-Americans (1 male and 1 female); 1 Hispanic/Latino male; 1 Asian male; 1 White/Persian/Armenian male; 1 White female; 1 Middle Eastern female; and 1 Peruvian/Ecuadorian male. In addition, the final sample consists of major courses of study across engineering and computer science fields, including 3 Mechanical Engineering (2 females and 1 male); 1 Computer Science and Applied Mathematics (male); 1 Computer Engineering (female); 1 Civil Engineering (male); 1 Construction Management (male); and 1 Electrical Engineering (male).


**Interview Data Collection Instruments and Procedures for Performance Measure 12d**

The primary instrument that we used to collect data from Cohort 1 participants is an interview protocol. We designed the interview protocol to collect descriptive data related to the cohort students’ peer-peer interaction. Specifically, we asked the cohort participants to respond to the following main questions to guide the conversation, in addition to follow-up and probing questions: Describe an interaction with a student you consider positive. Walk through the steps of the interaction from beginning to end. Describe how your interactions with peers in the cohort have changed since being in the AIMS program. Talk about your experiences with peer mentors. Describe some interactions that you’ve had and your feelings about them. Talk about your experiences with peer tutors. Describe some interactions that you’ve had and your feelings about them. Describe how your interactions with peers in the cohort have changed since being in the AIMS program. Talk about your experiences with peer mentors. Describe some interactions that you’ve had and your feelings about them.

After transcription, the transcript was ready for coding and thematic data analysis. We conducted the primary analysis through ATLAS.ti, a computer-aided qualitative data analysis software program. Specifically, we used the themes that emerged from the ATLAS.ti analysis and from codes developed in hard copy transcribed data files. We then categorized the themes that emerged from codes that we clustered according to experiences and interactions of the cohort participants. These categories were used to align thematic findings to the performance measures associated with program objectives. Finally, we extracted direct quotes from interviewees to illustrate themes and support overall findings from data analysis and interpretation.

**Description of Preliminary Findings Related to the Objective**

**Preliminary Findings for Performance Measures 12a, 12b, and 12c**

Baseline data aggregated from results of Cohort 1 (Spring 2012) applicant interviews (see section immediately above) indicate that the total number of students who participated in peer-tutoring and peer-mentoring in the Fall 2011 term is 26 and 18, respectively. In addition, results from document data collection of college records reveals that prior to Cohort 1 no students (outside of a graduate program in assistive technology) participated in a cohort model. These figures represent the baseline measures for two of these four measures, respectively, for Cohort 1. In light of these baseline measures and given the project target percent increases (30% for all three measures), the Cohort 1 project targets for these three measures are 1 student (12a), 34 students (12b), and 23 students (12c).

During the performance period, actual performance data for the three measures reveals that two measures have been met (12a and 12c). Specifically, with respect to performance measure 12a (cohort participation), with the formation and induction of 30 students in Cohort 1 (Spring 2012), there are 30 students who now participate in a cohort model, which supports that conclusion that we have exceeded the project target (i.e., 30% increase over the baseline) for this performance measure. That is, with the 30 cohort participants in Cohort 1 (Spring 2012), we have exceeded the target of a 30% increase over the baseline (n=0). While we are not reporting data from Cohort 2 (Fall 2012) in this report, we can note that we have recruited and inducted 29 more students who participate in a cohort model and plan to report Cohort 2 data in next year’s report. When we return to Cohort 1, we see data from student structured journals during the performance period for this report that show that we have met performance measure 12c with reporting having participated in peer mentoring sessions. The second performance measure—12c—that has been met during the period relates to peer mentoring among cohort participants. With this performance measure, we find that 26 students (or 87% of cohort participants) reported having participated in peer mentoring activities. Indeed, actual performance data for this measure represent an increase over the baseline figure (n=23) and an increase over the baseline ratio (18/30 or 60% of all cohort participants). As a result, performance data demonstrate that the number and percentage of students in Cohort 1 exceeds the project target (23/30 or 77%) by 10%.

When we turn to performance measure 12c, we find that 23 of 30 students in Cohort 1 (or 77% of all cohort participants) engaged in peer tutoring. These figures are consistent with actual performance data from measure 9a (tutoring). In light of the baseline data (26/30 or 87% of all cohort participants), we can conclude that actual performance data on this measure demonstrates progress toward the project target of 30/30 students or 100% of all students in Cohort 1. While the number of students who participated in peer tutoring during the period did not exceed the baseline data or project target, the figure we have reached a large majority of cohort participants through facilitating peer-tutoring opportunities.
Preliminary Findings for Performance Measure 12d

For the fourth and final measure (12d)—related to the quality of peer-peer interaction—of this project objective, results from data analysis indicate that overall cohort participants found a peer environment where they enjoyed meeting new people, forming study groups, and working in research groups with other students. When we look at specific types of peer interaction within the context of the project, we find that cohort participants responded well to their general peer-peer interactions. On this point, one cohort participant shared: “I met friends and we took the same classes.” Similarly, a cohort participant stated, “I now have friends I can meet on weekends and study with.” Another student described, “I like working with the same students in my [redacted] group and research group.” Referencing connections to student transfer experiences, one cohort participant said, “I still see my friends from GCC and we have some classes together.” With respect to peer interactions through peer mentoring, cohort participants found a support system in their mentors that served to guide them through their transition to CSUN and through their programs. For example, one cohort participant shared: “At first I was confused about the difference between peer mentors and peer tutors, but when I found out the difference, my peer mentor helped me to navigate things.” Yet another student stated: “My mentor helped me to turn into a self-starter and to ask for help.” In addition, peer mentors seemed to connect cohort participants to services that extended beyond the initial reach of peer mentors. To sum up the overall impression of cohort participants from their peer mentoring experiences, one interviewee said: “I like my mentor, he is a Masters’ student and he knows a lot.” Finally, with respect to peer-peer interactions related to tutoring, cohort participants were generally pleased with the support. One student shared, “I was glad when we knew who the peer tutors were. I was able to get in touch with them right away and they helped me to study for this one class I was having problems with.” Another student agreed: “They have helped me to get used to the heavy load of my classes.” This student seemed to summarize what others felt about peer tutor: “They are my security blanket.”

While all eight students whom we interviewed reported positive effects of peer-tutoring, peer-mentoring, and more generally peer-peer interactions, some interviewees (n=3) reported that they had challenges with these components of the project. In fact, the two challenges that interviewees cited as the most persistent in their interactions with peers related to (a) communication with peer tutors/mentors and (b) access to peer tutors. With respect to the former point, interviewees reported that they had “no face to face, only emails” and “didn’t have any interactions with tutors.” In reference to the latter point, students reported that they “saw a peer tutor once,” had a “hard time finding a tutor,” and “peer tutors came too late to get help.” When asked to help us understand why they reported these challenges with peer tutoring, students sited that there were “no tutors at the beginning of the semester” and that there were “too many students for each mentor or tutor.” In his or her response, one student referenced both peer tutors and peer mentors, arguing that “their roles are confusing; feels different, peer mentors and peer tutors.” One this note, we can point out that as Cohort 1 was forming in the early Spring 2012 term, we had not yet formed a peer tutoring structure that we had developed later in the Spring 2012 term and into the Fall 2012 term. Further, we can also point out that we have developed measures to increase cohort participant access to peer tutors and encourage interaction between peer tutors and cohort participants, including the development of table with peer tutor names and relevant information like contact information. In addition, when we distribute peer tutor tables to cohort participants, we ask them to arrange to contact and meet with peer tutors. With respect to peer mentors, we have also taken steps to increase interaction between peer mentors and cohort participants, including asking peer mentors to attend faculty mentor group meetings with cohort participants. In one final analysis of interview data, we found connections between faculty research projects, faculty-student interaction, and peer-peer interaction, perhaps pointing to a nexus between these project activities and their benefits for cohort participants. One cohort participant, who was working on a faculty research project, stated “I was glad to be working on the same team as seniors, I could see progress of the [redacted].” These seniors served as peer mentors—and as students who helped shape a positive peer environment that faculty mentors helped to shape through collaborative research projects.

Description of Project Activities Related to the Objective

During the performance period, project faculty and staff worked to meet these four project measures of this objective. Specifically, we formed the first (Cohort 1) and second (Cohort 2) cohorts of student participants during the Spring 2012 and Fall 2012 terms. To support the development of a high quality peer environment and frequent peer-peer interaction, we developed both a peer-tutoring component and a peer-mentoring component to the project and peer interaction through both peer- and faculty-mentors. In particular, in February-March 2012 and during Summer 2012 for the Fall 2012 semester, we advertised, recruited, hired, and trained peer tutors from CSUN’s upper-division undergraduate and graduate students in the College of Engineering and Computer Science. In addition to peer tutoring, we conducted training of peer mentors for cohort participants. Finally, to facilitate a strong environment connected to both instructional and faculty research activities, faculty mentors planned and/or facilitated small group sessions with cohort participants during the period. In addition to supporting student-faculty interaction and student development, these sessions are intended to facilitate peer-peer interaction. Finally, project faculty and staff planned project activities to encourage peer interactions, including on- and off-campus project events like introduction to an appropriate professional society student chapter in the discipline and related activities – technical talks, presentations, student chapter activities etc. and visits with the cohort students from Glendale Community College and College of the Canyons.
Plans to Use of Performance Data to Monitor Progress
With monthly student journaling during the performance period and student interviews during the first year, we have reported actual performance data for all four measures in the performance report for the first year of the project period. We have used results from data collection in both Moodle and interviews to monitor progress on all four performance measures related to this objective. In particular, we have used Moodle cohort participant journal results to assess further progress on the first performance three measures (12a-12c) and student interviews to evaluate progress on the final performance measure (12d). During the second project year, we plan to discuss the results of data collection in project meetings and address areas of improvement. Specifically, we plan to present data from faculty mentor journaling and, in particular, on how to facilitate peer-peer interaction through modes of communication that we already developed or can efficiently develop. For example, one faculty mentor “noticed that [cohort participants] knew each other by face but not by name.” This faculty mentor went on to suggest that “if we add the name, picture, and email address on the cohort website that might help.”
SECTION B - Budget Information (See Instructions. Use as many pages as necessary.)

Summary of Budget Information

The total requested funding under the solicitation for five years is $5,562,768 including a total of $1,490,915 that is requested by the two supporting community colleges under this proposal. The total budget for Year 1 of the grant is $1,096,856 of which $299,893 is awarded to the two partner community colleges as sub-contractors. The budget for Year 2 of the grant in the amount of $1,134,630 was awarded in November 2012 following the acceptance of the Interim Report in April 2012.

The grant award was announced in October 2011 and as of September 30, 2012 (end of Year 1) we had expended $604,276 of the Year 1 budget. The total expended to date is $761,443. In our original proposal to the US Department of Education we envisioned a start date of July 1, 2011. Given the announcement of the grant award in October 2011 the team organized rapidly to recruit the first cohorts of students from all three institutions by January-February 2012 and put in place the various project activities envisioned under the grant. Thus the first expenditures on the grant began to occur in early spring 2012. We would like to carry forward the balance available from the Year 1 budget to subsequent years and to cover the additional costs for faculty release time, clerical support, student research support and project web site development. The attached detail trial balance shows the expenses by category for the various elements of the project. The summary below indicates the expenditures by category and changes as appropriate.

Personnel:

Faculty Costs

CSUN’s personnel budget represents the costs for the faculty, staff and students supporting the project. In addition to the one faculty member from the College of Education (Prof. Nathan Durdella) who is responsible for the evaluation and assessment activities, we had proposed that one faculty member designated from each of the five Engineering and Computer Science (ECS) departments would participate in the project. Following the selection of the cohort it was necessary to recruit six faculty members to effectively serve the needs of the students. The six faculty members are Profs. Amine Ghanem (Civil Engineering and Construction Management), Gloria Melara (Computer Science), Bruno Osorno (Electrical and Computer Engineering), Behzad Bavarian (Manufacturing Systems Engineering and Management), and Robert Ryan and Stewart Prince (Mechanical Engineering).

Five of the six faculty members received reassigned time equivalent to one 3-unit class for the spring 2012 semester and received one month of summer salary for summer 2012 as budgeted in the original proposal. For the fall 2012 semester all six faculty members are receiving 3 units of release time per semester. The sixth faculty member (Prof. Robert Ryan from Mechanical Engineering) received one month of summer salary for summer 2012 estimated at $7,695 including benefits. The total cost for the additional release time (27 units over the duration of the grant) for Prof. Ryan including benefits is estimated to be approximately $89,000. For Year 1 alone the additional cost of Prof. Ryan’s release time is estimated to be $9,230 (3 units in fall 2012). Assuming a 3% annual increase in costs, the Year 2 costs for Prof. Ryan’s release time would be $19,014. We intend to cover this with the anticipated carry forward from our Year 1 Budget. The five Department Chairs in the College of Engineering and Computer Science were also provided with 0.5 month of summer salary to help coordinate the activities with the community colleges. The faculty member from the College of Education was originally scheduled to receive 3-units of release time in years 1 and 5, and 6-units of release time in years 2 through 4. He was also scheduled to receive 2 months of summer salary during the grant period. Based on the assessment and project evaluation work during the period from January – April 2012 and the preparation of the Interim Performance report in April 2012, it became evident that he would need additional release time over the budgeted 6 units for Year 2 and Year 5 of the grant to complete the project tasks. The second cohort of students was recruited at all three institutions in fall 2012 and it is necessary to keep them distinct and separate for project analysis and performance comparison purposes. Since Year 2 funding was yet to
be announced in April 2012, we covered the cost of the 3 units of additional release time for fall 2012 of approximately $10,300 by reducing his summer salary for Year 1 from 2 months to 1 month, to $7,858 (salary plus 8.8% benefits), leaving us $2,452 short. The shortage will be covered from the carry-forward funds and now that Year 2 funding has been confirmed we expect to be able to restore his summer funding to 2 months for Year 2 and beyond. Also the anticipated cost of the additional 3 units of release time in Year 5 of the grant is $11,266.

Staff Costs

As outlined in our proposal we made it our top priority to recruit the students into the cohorts and establish the various project activities involving the faculty and the students in the grant. We had proposed that a half-time career advisor/counselor would be hired at a salary of $25,000/yr to advise the students in terms of financing their education and the availability of aid packages, future careers, locating suitable internships and employment upon graduation. A position description is being developed and we expect to complete the hiring process to recruit an individual to serve in this capacity effective spring 2013. Additionally, we had proposed that two research support staff would devote 40% of their time to support the student design and research projects under this grant proposal. One research engineer Ms. Lisa Reiner is in the materials engineering area and is assisting Prof. Bavarian who is one of the Co-PI’s of the grant. The other will be in the CNC and machining area and is expected to be recruited to join the team during summer 2013. The hiring of the career advisor and technical staff support person will be timely as half the students in the cohort are completing their first full year in the program. We are carrying forward the amounts budgeted for both positions from Year 1 and expect to complete these hires by the end of spring 2013 or sooner.

Furthermore, we had proposed that a support staff in the ECS Student Services Center would be designated to guide this group of transfer students in the cohort through academic and non-academic issues. This support staff person is Ms. Latessa Hagler and is compensated at $10,000/year for her commitment for this project.

In our grant proposal we committed to developing and maintaining a project website to disseminate information about the project goals and outcomes. A separate budget category was created to cover this expense with a budget of $10,800. The website was developed and implemented by Digital Energy and is currently housed on the home page of the College of Engineering and Computer Science at CSUN at [http://www.ecs.csun.edu/aims2/](http://www.ecs.csun.edu/aims2/). We anticipate ongoing maintenance expenditures to keep the project web site updated during Years 2 – 5 and expect to use some of the carry forward funds to cover them.

In addition we have added clerical support to provide administrative assistance for the project. This was not originally budgeted but it became apparent that we would need this support to accomplish the goals of the project. Some of the duties that are being performed by staff in this category are: Filtering information on cohort students for PI's, Contacting students to set up appointments with Chairs and PI's, maintaining the project web site once it is established to ensure that it is up to date. Other duties include Scheduling meetings, E-mail correspondence, arranging teleconferences for the project team, arrangement of parking, photocopying, compilation of materials, scheduling of rooms, and maintenance of records. Presently Ms. Cindy Barrett and Ms. Crystal Waters are providing clerical support. Since our original budget request missed including this category a separate budget category has been created to cover the anticipated expenses under this category. The anticipated annual budget for administrative support including benefits is $26,000. We are covering this with the anticipated carry forward from Year 1 of the grant. Information on Project Staff may be found on the project web site at [http://www.ecs.csun.edu/aims2/project_staff.html](http://www.ecs.csun.edu/aims2/project_staff.html)

To help with budgeting issues in the grant, we had proposed that a grant budget specialist would be hired for 0.65 FTE in the first year, and half-time in years 2 through 5. This has been completed and the grant budget specialist who is supporting this grant is Ms. Mary Jumamil from the University Corporation.

Student Mentors and Tutors:

A group of 14 current senior CSUN students were employed for ten hours each week at a rate of $15/hr to help tutor the students in the cohort during spring 2012. These students were selected upon the recommendation of the faculty mentors and department chairs and based on the needs of the students in the cohort. They are available at regularly sched-
uled hours and by appointment to individually tutor students in the cohort: [http://www.ecs.csun.edu/aims2/peer_tutors.html](http://www.ecs.csun.edu/aims2/peer_tutors.html), and serve as peer mentors [http://www.ecs.csun.edu/aims2/peer_mentors.html](http://www.ecs.csun.edu/aims2/peer_mentors.html)

In addition, we selected over 15 students from the cohort group to participate in paid research activities under the supervision of the faculty mentors beginning this summer. These students worked on the average at least 13 hours/week during the summer and were paid at the rate of $15/hour. The students who participated in the summer research activities prepared posters about their work and presented them during the opening meeting of the fall 2012 semester when the second cohort was formed; and during the alumni networking event that we hosted in the college on October 11, 2012.

**Student Stipend:** In order to motivate the students and partially defray the cost of book and other supplies, each student in the program will be compensated $1200 while at the community college, and $2400 while attending CSUN. We had proposed that the number of students participating in the program will be according to the following table. Our first cohort which was recruited in January-February 2012 includes 30 students from CSUN, 15 students from Glendale CC, and 18 students from College of the Canyons. The second cohort includes 30 students from CSUN, 15 students from Glendale CC and 12 students from College of the Canyons and was recruited in August-September 2012. The annual stipend is provided to the students in two equal installments and is based on the students’ progress in meeting the guidelines of the grant.

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**Supplies:** Supplies requested under this proposal included: 40 computer tablets ($75,596) and the associated software DyKnow ($1500/yr), a specialized cart to store the 40 tablets ($4000), printing ($1500/yr), and laboratory supplies ($25,000/yr). The tablets have been purchased and installed with appropriate software that is commonly used in the undergraduate engineering and computer science programs in the college. Faculty are using the tablets with students in the cohort in tutoring and mentoring sessions, and in curriculum development. One of the faculty mentors, Prof. Stewart Prince provided the project team with an introduction to DyKnow and the collaborative learning tools during our monthly meeting in March 2012 with his presentation entitled “Using Tablets to address the needs of the cohort”.

**Travel:** Travel reimbursement for two faculty members participating in the annual American Society of Engineering Education (ASEE) conference was requested. These costs are arrived at based on historical data and using approved reimbursement rates at CSUN. Prof. Robert Ryan from Mechanical Engineering and one of the Co-PI’s attended the ASEE annual meeting in San Antonio in June 2012. Furthermore, travel for two faculty and five students to the Society of Hispanic Professional Engineers (SHPE) in the first three years, and 4 faculty and ten students in years 4 and 5 was requested. Several students from the cohort attended the SHPE National meeting in November 2012 in Texas. Note that CSUN has a long and proud tradition of winning at the SHPE National Design Competition including winning the top two places in 2011 and the first place in 2010 respectively. More information may be found at [http://www.ecs.csun.edu/ecs/newsH-20111028.html](http://www.ecs.csun.edu/ecs/newsH-20111028.html) and [http://www.northridgemagazine.com/focus-on/big-finish/](http://www.northridgemagazine.com/focus-on/big-finish/)
The grant is administered by the University Corporation (TUC) at California State University, Northridge in conjunction with the Office of Research and Sponsored Projects. Specific services provided by these two offices are summarized below:

Office of Research & Sponsored Projects (ORSP)
Post-Award Activities
- Award notification
- Budget revisions & no-cost extensions
- Liaison between university and grantor
- Compliance animal/human subjects

The University Corporation (TUC)
Post-Award Activities
Project Accounting /Compliance
- Approval of project related hiring
- Approval & processing of project related expenditures (Purchase Orders, Check Requests, Timesheets, Salary Payment Authorizations, Faculty Release Time Reimbursement, Independent Contractor)
- Project accounting / budget monitoring
- Ensuring compliance with finance related grant regulations
- Maintaining financial records
- Invoicing the grantor / Processing of receipts
- Preparation and submittal of financial reports to grantor
- Distribution of financial reports to Principal Investigators & Managers of Academic Resources
- A-133 Single Audit / Special Audits
- Subrecipient Monitoring (A-133 Audit Reports)
- Effort Reporting
- Asset Management
- Obtaining necessary insurance coverage

Payroll
- Payroll Processing
- Vacation/absence time monitoring

Human Resources
- Hiring, change of status and termination of project staff (together with OHR)
- Benefits (Health, Dental, Retirement, Insurances)

Office of Human Resource Services at CSUN (OHR)
Post-Award Activities
- Hiring, change of status and termination of project staff (together with TUC-HR)

SECTION C - Additional Information  (See Instructions. Use as many pages as necessary.)
### Project Budget Status

**Project ID:** 40034236  
**Granting Agency:** US DEPT OF EDUCATION  
**Project Director:** Ramesh, Dr. S.K.  
**Project Title:** CSU, Northridge Engineering & Computer Science HSI-STEM Initiative  
**Project Beginning Date:** 2011-10-01  
**Project Ending Date:** 2012-09-30  
**For Month End:** December 31, 2012  
**As Of:** 12/13/2012 11:57:14

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<td>0.00</td>
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<tr>
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**Funds Available to Principal Investigator:**

<table>
<thead>
<tr>
<th>Total Funds Available:</th>
<th>492,579.48</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less Indirect Cost:</td>
<td>0.00</td>
</tr>
<tr>
<td><strong>Total Funds Available To Principal Investigator:</strong></td>
<td><strong>492,579.48</strong></td>
</tr>
</tbody>
</table>

**Notes:**

* Faculty Release Time: Actual expenditures in the account '601620 Faculty Release Time' include a charge of actual benefits.

**) Benefits: All expenditures for benefits are budgeted in account '60200 Benefits', however the actual expenditures are booked in the accounts 602110 Payroll Taxes, 602210 Workers Compensation, 602220 Unemployment, 602310 Insurance, 602320 Retirement, etc...

As a result, all benefit accounts (602XXX) can be viewed as one budget item, and should be treated as such with regard to budget revisions.
## Project Budget Status

**Sponsored Programs**

### Project Information
- **Project ID:** 40034357
- **Granting Agency:** US DEPT OF EDUCATION
- **Project Director:** Ramesh, Dr. S.K.
- **Project Title:** CSU, Northridge Engineering & Computer Science HSI-STEM Initiative
- **Project Beginning Date:** 2012-10-01
- **Project Ending Date:** 2013-09-30
- **As Of:** 12/13/2012 11:57:18

### Budget Balance Available (BBA)

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<thead>
<tr>
<th>Account</th>
<th>Description</th>
<th>Budget</th>
<th>Encumbrance (Committed)</th>
<th>Actual Expenditure</th>
<th>Balance Available</th>
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<td>(3,599.00)</td>
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### Funds Available to Principal Investigator:
- Total Funds Available: 841,479.64
- Less Indirect Cost: 0.00
- Total Funds Available To Principal Investigator: 841,479.64

### Notes:
- *) Faculty Release Time: Actual expenditures in the account '601620 Faculty Release Time' include a charge of actual benefits.
- **) Benefits: All expenditures for benefits are budgeted in account '602000 Benefits', however the actual expenditures are booked in the accounts 602110 Payroll Taxes, 602210 Workers Compensation, 602220 Unemployment, 602310 Insurance, 602320 Retirement, etc...
- As a result, all benefit accounts (602XXX) can be viewed as one budget item, and should be treated as such with regard to budget revisions.
General Information
1. PR/Award #: P031C11031
2. Grantee NCES ID#: 110608
   (Block 5 of the Grant Award Notification - 11 characters.)
   (See instructions. Up to 12 characters.)
3. Project Title: CSU, Northridge Engineering and Computer Science HSI-STEM Initiative
   (Enter the same title as on the approved application.)
4. Grantee Name (Block 1 of the Grant Award Notification): THE UNIVERSITY CORPORATION -- ENGINEERING & COMPUTER SCIENCE, CALIFORNIA STATE UNIVERSITY, NORTHRIDGE
5. Grantee Address (See instructions.)
   Name: Dr. S. K. Ramesh
   Title: Dean
   Ph#: (818) 677-4501 Ext: ( )
   Fax#: (818) 677-2140
   Email Address: s.ramesh@csun.edu

Reporting Period Information (See instructions.)
7. Reporting Period: From: 10/01/2011 To: 03/31/2012 (mm/dd/yyyy)

Budget Expenditures (To be completed by your Business Office. See instructions. Also see Section B.)
8. Budget Expenditures

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<th></th>
<th>Federal Grant Funds</th>
<th>Non-Federal Funds (Match/Cost Share)</th>
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<td>N/A</td>
</tr>
<tr>
<td>b. Current Budget Period</td>
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</tr>
<tr>
<td>c. Entire Project Period (For Final Performance Reports only)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Indirect Cost Information (To be completed by your Business Office. See instructions.)
9. Indirect Costs
   a. Are you claiming indirect costs under this grant? __Yes  _X_No
   b. If yes, do you have an Indirect Cost Rate Agreement approved by the Federal Government? __Yes  __No
   c. If yes, provide the following information:
      Period Covered by the Indirect Cost Rate Agreement: From: ______/_____/______ To: ______/_____/______ (mm/dd/yyyy)
      Approving Federal agency: __ED  __Other (Please specify):
      Type of Rate (For Final Performance Reports Only): __ Provisional  __Final  __Other (Please specify):
   d. For Restricted Rate Programs (check one) -- Are you using a restricted indirect cost rate that:
      ____ Is included in your approved Indirect Cost Rate Agreement?
      ____ Complies with 34 CFR 76.564(c)(2)?

Human Subjects (Annual Institutional Review Board (IRB) Certification) (See instructions.)
10. Is the annual certification of Institutional Review Board (IRB) approval attached? __Yes  __X_No  __N/A

Performance Measures Status and Certification (See instructions.)
11. Performance Measures Status
   a. Are complete data on performance measures for the current budget period included in the Project Status Chart? __Yes  __X__ No
   b. If no, when will the data be available and submitted to the Department? 12/31/2012 (mm/dd/yyyy)

12. To the best of my knowledge and belief, all data in this performance report are true and correct and the report fully discloses all known weaknesses concerning the accuracy, reliability, and completeness of the data.

   ________________
   Name of Authorized Representative: Scott Perez
   Title: __Director, Research and Sponsored Projects
   Signature: Scott Perez
   Date: 04/12/2012

ED 524B
The Project Director received notification of the grant award in October 2011. All stakeholders were informed of the award immediately and the team held its first organizational meeting on October 13th. During this meeting, the team focused on the work where they will complete their studies in Engineering and/or Computer Science.

The AIMS² (Attract, Inspire, Mentor and Support Students) Program - CSU, Northridge Engineering and Computer Science HSI-STEM Initiative

This collaborative project is lead by the College of Engineering and Computer Science at California State University, Northridge, in partnership with Glendale Community College (GCC) and the College of the Canyons (COC). The primary objectives of the grant are: (1) To increase the number of Hispanic and low-income students who successfully transfer from Glendale Community College and College of the Canyons to California State University to pursue majors in Engineering and/or Computer Science, (2) To increase the number of Hispanic and low-income students who graduate from CSU Northridge with degrees from CECS undergraduate programs, and (3) To develop a model, seamless transfer program to assist Hispanic and low-income students to successfully transfer from Glendale Community College and College of the Canyons, to California State University, Northridge where they will complete their studies in Engineering and/or Computer Science.

The Project Director received notification of the grant award in October 2011. All stakeholders were informed of the award immediately and the team held its first organizational meeting on October 13th. During this meeting, the team focused on the work plan for the project including the key goals and objectives, assessment and reporting and budget. A meeting calendar with regular meeting times was established. Meeting agendas and presentations may be accessed on the project web site at [http://www.ecs.csun.edu/aims2/presentations.html](http://www.ecs.csun.edu/aims2/presentations.html). At the first meeting, each member of the team received a project binder with relevant information including complete data on the first time transfer students who entered the College of Engineering and Computer Science at CSUN in the fall 2011 semester.

The team selected AIMS² (Attract, Inspire, Mentor and Support Students) as the name of this collaborative project capturing the key elements of the HSI-STEM grant program and worked with an external consultant to develop and implement a comprehensive project web site which may be accessed at [http://www.ecs.csun.edu/aims2/](http://www.ecs.csun.edu/aims2/). Internal assessment of the program objectives and outcomes are being conducted continuously by the Program Assessment and Evaluation Committee made up of the PI’s of the grant and the internal program evaluator and reported in detail in Section A. The project webpage is housed on the homepage of the College and will be maintained to inform and disseminate progress on achievement of the goals and objectives of the grant. In addition it serves as a common point of interaction for all stakeholders involved in the grant including links to the cohort Moodle site and links to faculty mentors, peer mentors and tutors, and project staff.

The first priority for the team was the recruitment of the students to form the first cohort and the identification of the gaps in articulation in lower division transfer courses between the partner colleges and CSUN. A simple online application was developed to recruit students to the CSUN cohort. All first time transfer students (fall 2011 semester) in the College of Engineering and Computer Science at CSUN received a personal letter informing them of the grant award and inviting them to complete the online application. We received a total of 58 applications. Of these, 47 were deemed to meet the requirements for the grant. These applicants were invited to a personal interview with project personnel in January 2012. The first CSUN cohort of 30 students was selected based on the interviews and the recommendations of the project personnel. The students were notified of their selection and a mandatory orientation meeting with the entire cohort was held on January 20th. This meeting covered the responsibilities of the students in the cohort and introduced them to the faculty mentors and all project staff. Also cohort students completed paperwork to receive their annual stipend. This is distributed in two equal installments to ensure that students are making progress in accordance with the guidelines of the grant. The partner community colleges adapted the online application developed at CSUN and completed the recruitment of their cohorts (15 students each) in February-March 2012.

One of the two major objectives of this grant is to create seamless transfer programs between community colleges and CSUN to enable Hispanic students and other under-represented minorities to successfully transfer to CSUN’s engineering and computer science programs and graduate in a timely manner. The project faculty team from GCC, COC and CSUN has reviewed gaps in the existing articulation agreements between our institutions [http://www.ecs.csun.edu/aims2/course_articulation.html](http://www.ecs.csun.edu/aims2/course_articulation.html) and is working to develop curricula to address the gaps. The WiTEC initiative (Wireless Technology Initiative) under this grant is a unique collaborative solution that capitalizes on the past successes of the partners to develop relevant curricula to enable seamless transfers for students in the cohort. After comparing the performance of the tablets from three different vendors the tablet laptops that are used as part of the WiTEC initiative were purchased from HP in January 2012 and secured and maintained by the IT group in the college. The tablets are equipped with commonly used software packages in the college’s academic programs and also include a software package called DyKnow that enables interaction between the users. WiTec allows students in the cohort to
benefit from the latest pedagogy to enhance their understanding of the rigorous curricula in engineering and computer science and succeed. We expect quicker mastery of difficult, abstract concepts in lower division courses, and improved student performance. Using emerging technologies in the classroom, demonstrating the relevance of theoretical concepts, and linking education to future careers are the strategies that will encourage students in the cohort to persist and graduate. We expect that the proposed teaching and learning innovations will improve measures of teaching effectiveness, student academic performance and retention. With wireless HP Tablet PCs available to faculty in the project team and students in the cohort, she/he can instantly assess understanding through polling and appropriately clarify concepts—a kind of immediate formative assessment of teaching effectiveness with corrective opportunities. We expect to report on our progress on this initiative in subsequent years.

The following is a brief summary of the project activities to date: Seven team meetings have been held since grant was announced in October 2011. A Project Website has been established at http://www.ecs.csun.edu/aims2/. The selection of student cohorts for the first cohort has been completed in spring 2012. CSUN Peer Mentors http://www.ecs.csun.edu/aims2/peer_mentors.html and Tutors http://www.ecs.csun.edu/aims2/peer_tutors.html have been selected based on the needs of the cohort and they are actively working with the cohort students. Faculty mentors http://www.ecs.csun.edu/aims2/faculty_mentors.html meet regularly with their students in the cohort to discuss their academic progress. Other activities for cohort students include, projects in instructional labs, research projects with faculty, introduction to an appropriate professional society student chapter in the discipline and related activities – technical talks, presentations, student chapter activities etc., and participation in college wide events such as Tech Fest, and the Senior Design Project Showcase etc., Activities that are planned include visits between the cohort students from the partner colleges as well as outreach visits by cohort students to other colleges and high schools to raise awareness of the grant and encourage future students. Gaps in course articulation agreements between the partner institutions have been identified and the faculty has begun to work on addressing them. Based on the preliminary work to date, the Project Director has been invited to make a presentation on “Best Practices in working with Community Colleges” at the 2012 Engineering Deans Institute meeting on April 17th, 2012: http://www.ascc.org/conferences-and-events/conferences/edi/2012/program-schedule/EDI_Session_on_Working_with_Community_Colleges.pdf. The WiTec initiative has been launched with the tablet laptops purchased from the grant. We anticipate that WiTEC will create a model that other faculty can adapt to their subject areas; the wireless classroom will become a learning laboratory open to participants from the project team who in turn will reach and teach interested colleagues, and inform external stakeholders as appropriate.

Work in progress: Nominations for the proposed external advisory board have been received from the project team members and we are in the process of contacting the nominees to confirm their willingness to serve. The Advisory Board will be in place by June 2012 and we anticipate the first meeting with the board to occur by the end of summer 2012. Also during summer 2012 we anticipate completing the hiring of relevant project staff including the career advisor and lab technical support staff. Section A describes in detail the project’s goals and the progress we have made to date in achieving the expected outcomes and performance measures. We anticipate being able to provide complete data as appropriate for relevant outcomes with our first annual performance report that is due on December 31, 2012.
**SECTION A - Performance Objectives Information and Related Performance Measures Data** (See Instructions. Use as many pages as necessary.)

1. **Project Objective**  
   |   | Check if this is a status update for the previous budget period.

Increase the transfer of Hispanic and low-income students from College of the Canyons and Glendale Community College to CSUN in STEM fields

1.a. **Performance Measure**

<table>
<thead>
<tr>
<th>Measure Type</th>
<th>Quantitative Data</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>After two years, increase by 15 the number of Hispanic and low-income students who transfer from College of the Canyons and Glendale Community College to CSUN in STEM fields over the 2010-11 baseline number</strong></td>
<td><strong>Project</strong></td>
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</table>

<table>
<thead>
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<th>Raw Number</th>
<th>Ratio</th>
<th>%</th>
<th>Actual Performance Data**</th>
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</thead>
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<tr>
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<td>/</td>
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</tr>
<tr>
<td></td>
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<td></td>
<td></td>
</tr>
</tbody>
</table>

*CSUN institutional data (not project cohort data)  
**Baseline data (per Instructions for Grant Performance Report)

Explanation of Progress (Include Qualitative Data and Data Collection Information)

**Evaluation Data Sources and Methods for the Objective**

While baseline data for this performance measure have been collected, actual performance data have not yet been collected. Quantitative data sources for both baseline and actual performance data for this measure are from CSUN institutional data (from CSUN’s Office of Institutional Research). We have worked with CSUN’s Office of Institutional Research to prepare the 2010-11 baseline data on student transfer figures for both College of the Canyons and Glendale Community College and plan to work with the same office to produce the 2011-12 figures, which will mark the end of the first academic year after formation of the student cohort participants from the two community colleges in the Spring 2012 term.

**Description of Preliminary Findings Related to the Objective**

The baseline data for this measure (1a) is from CSUN’s Office of Institutional Research and includes institutional data (i.e., not project cohort data). Accordingly, the baseline data do not correspond to the number of project cohort participants but rather to all students who met the criteria for inclusion in the transfer cohort (see next sentence). The 2010-11 baseline data for all Hispanic and/or low-income (i.e., Pell grant recipients) students who transferred from College of the Canyons and Glendale Community College to CSUN planning to major in a field in the College of Engineering and Computer Science follows: 14 students from College of the Canyons and seven from Glendale Community College, for a total of 21 students from both colleges. Consequently, the target number of Hispanic and low-income students who transfer from College of the Canyons and Glendale Community College by Spring 2014 (two academic years after entry into the current cohort) is 36, which represents an increase of 15 over the 2010-11 baseline number.

**Description of Project Activities Related to the Objective**

Project faculty and staff are working to support the achievement of this objective through work with cohort participants at College of the Canyons and Glendale Community College. Recently, project faculty and staff completed work to form the student cohorts at both College of the Canyons and Glendale Community College. Anticipated project activities at both community colleges include tutoring, mentoring, academic excellence workshop (College of the Canyons), textbook award program, joint leadership conference (College of the Canyons), joint outreach efforts (College of the Canyons), and engineering boot camps (College of the Canyons). In addition,
project faculty at both CSUN and College of the Canyons/Glendale Community College are working collaboratively to support early contact and connections between community college students and CSUN, including community college cohort attendance at CSUN’s Project Design Showcase and CSUN’s Tech Fest

Plans to Use of Performance Data to Monitor Progress
We anticipate that the Office of Institutional Research will produce actual student transfer data (as the receiving institution) from the 2011-12 academic year in August-September 2012. Once the Office of Institutional Research sends us the 2011-12 data on student transfer, we will calculate the actual performance data for this measure. Data collection plans to measure this objective include annual secondary data extracts from the Office of Institutional Research for each academic year. We plan to publish the new figures on our project’s website (http://www.ees.csun.edu/aims2/) and discuss progress at our project meetings.
2. Project Objective

Check if this is a status update for the previous budget period.

Increase the number of courses that articulate from College of the Canyons and Glendale Community College to CSUN and articulation agreements between College of the Canyons and Glendale Community College and CSUN

<table>
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</table>

*Note that the performance measures for this objective have been disaggregated from the original performance measure for reporting purposes only.

**Baseline data (per Instructions for Grant Performance Report)

<table>
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<td></td>
<td></td>
<td>Target</td>
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<td></td>
<td></td>
<td>Raw Number</td>
</tr>
<tr>
<td></td>
<td>92</td>
<td>/</td>
</tr>
</tbody>
</table>

*Note that the performance measures for this objective have been disaggregated from the original performance measure for reporting purposes only.

**Baseline data (per Instructions for Grant Performance Report)

Explanation of Progress (Include Qualitative Data and Data Collection Information)

Evaluation Data Sources and Methods for the Objective

The two performance measures (2a and 2b) for this objective measure the same outcome: articulated courses. That is, an articulated course is equivalent to an articulation agreement within the context of this project. Accordingly, for the purpose of this project objective, performance measures 2a and 2b use the same baseline data and actual performance data. Document data collection (e.g., of course articulation agreements) and review constitute the data collection methods for these two performance measures of this objective. Data collection commenced in February 2012 and will continue until project faculty complete the articulation and curriculum approval process at College of the Canyons, Glendale Community College, and CSUN. Data analysis of documents includes reviews to confirm and verify that courses are articulated and articulation agreements are in effect. In addition, Glendale Community College will use an online student-transfer information system to track progress on these two performance measures (see below under “Project Activities at Glendale Community College”
Description of Preliminary Findings Related to the Objective
Actual performance data for these two performance measures of this objective indicate that 77 courses currently articulate between College of the Canyons/Glendale Community College and CSUN. However, no new courses have been articulated through project activities at the time of this report. Data collected through documents reveal that a total of 41 courses currently articulate between College of the Canyons and CSUN and a total of 36 courses currently articulate between Glendale Community College and CSUN. Of the 77 courses that currently articulate, remedial math courses have been excluded from the count and six courses are missing labs (four at College of the Canyons and two at Glendale Community College). Accordingly, the total of 77 courses that currently articulate between both community colleges and CSUN constitutes the baseline performance measure. Meanwhile, a total of 12 courses currently do not articulate between College of the Canyons and CSUN and 17 courses currently do not articulate between Glendale Community College and CSUN, for a total of 29 courses in the fields of engineering and computer science. Given the project target of 15 new articulated courses, the total number of courses that need to articulate between CSUN and the two community colleges is 92, which represents the project target number.

Description of Project Activities Related to the Objective
Currently, efforts of project faculty and staff to meet these two performance measures are well under way. On December 8, 2011, project faculty mentors from CSUN, College of the Canyons, and Glendale Community College met to discuss course articulation. At the most recent two monthly project team meetings (February 9, 2012, and March 15, 2012), project faculty reported their progress in meeting the two performance measures for this objective. Subsequently, project faculty established a framework to develop course articulation agreements and have worked on articulating individual courses. Specifically, project faculty have formed work groups based on their disciplinary backgrounds and department affiliations (e.g., computer science, engineering fields, etc.) and assigned each other specific courses to review, revise, and articulate. An example of the work that faculty are doing can be seen in civil engineering and construction management courses. With respect to CSUN’s Civil Engineering (CE) courses, two courses—CE240 Engineering Statics (3 units) and CE280/L Computer Applications in Civil Engineering (2 units)—have been identified for potential articulation with Glendale Community College and College of the Canyons. Likewise, four Construction Managements (CMT) courses—CMT110/L Construction Drawings & Lab (2 units) CMT208/L Construction Site Surveying & Lab (3 units) CMT210/L Construction Contract Documents & Lab (3 units) CMT240/L Building Construction & Lab (3 units)—have been identified for potential articulation with both Glendale Community College and College of the Canyons (although CSUN’s CMT208/L is already articulated with College of the Canyon’s SURV 101). In addition to efforts to articulate courses between CSUN, College of the Canyons, and Glendale Community College, project faculty plan to work collaboratively using technology (e.g., WiTec) as appropriate to develop curricula for courses that do not currently exist at College of the Canyons and/or Glendale Community College.

Project Activities at College of the Canyons
During this performance period College of the Canyons engineering faculty have been working with CSUN faculty members to articulate one course and two labs. These include articulation between CSUN’s ME186 and College of the Canyon’s Engineering 114, CSUN’s MSE 227L and College of the Canyon’s Engineering 151FL. Faculty in CSUN’s Computer Science department are also working with faculty in College of the Canyon’s Computer Information Technology department to determine which courses could be developed at College of the Canyons that would ease student transfer to the CSUN’s computer science department.

Project Activities at Glendale Community College
CSUN will receive copies of Glendale Community College’s coursework for Engineering and Computer Information Systems, and Glendale Community College will align its curriculum to CSUN’s courses, where appropriate, and then go through the appropriate local approval process for establishing the articulation agreements. Data collection includes reviewing documents, including the CSUN HSI-STEM grant packet, and reviewing the online student-transfer information system, www.assist.org, in March 2012.

Plans to Use of Performance Data to Monitor Progress
Plans to measure progress on these two outcome measures include document data collection (e.g., course articulation agreements) and review. Data collection will occur as project faculty complete the articulation and curriculum approval process at College of the Canyons, Glendale Community College, and CSUN. With respect to project implementation, we plan to move forward with the curriculum revision process and submission of revised courses to curriculum committees at our respective campuses once courses have been articulated. While this process may take time to complete, it is important to note that if project faculty agree on course content, they can begin to make substitutions immediately while awaiting the conclusion of the curriculum approval processes at their respective institutions.
3. Project Objective  

Check if this is a status update for the previous budget period.

Enhance the academic advising/counseling capacity of College of the Canyons and Glendale Community College in STEM fields.

3.a. Performance Measure* for College of the Canyons**

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*Note that the performance measures for this objective have been disaggregated from the original performance measure for reporting purposes only.

**Note that this performance measure is reported in separate tables for College of the Canyons and Glendale Community College, given differences in target/actual performance data for this reporting period.

***Baseline data (per Instructions for Grant Performance Report)

3.a. Performance Measure* for Glendale Community College**

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***Baseline data (per Instructions for Grant Performance Report)

3.b. Performance Measure* for College of the Canyons**

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*Note that the performance measures for this objective have been disaggregated from the original performance measure for reporting purposes only.

**Note that this performance measure is reported in separate tables for College of the Canyons and Glendale Community College, given differences in target/actual performance data for this reporting period.

***Baseline data (per Instructions for Grant Performance Report)
3.b. Performance Measure* for Glendale Community College**

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<td><strong>Increase by four the number of advising/counseling sessions with students in STEM fields over the 2010-11 baseline number</strong></td>
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<thead>
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**Note that this performance measure is reported in separate tables for College of the Canyons and Glendale Community College, given differences in target/actual performance data for this reporting period.

***Baseline data (per Instructions for Grant Performance Report)

Explanation of Progress (Include Qualitative Data and Data Collection Information)

Evaluation Data Sources and Methods for the Objective
College of the Canyons and Glendale Community College report their respective data sources and methods below.

Evaluation Data Sources and Methods at College of the Canyons
College of the Canyons used a combination of document data sources and collection methods—including counseling appointments, student educational plans, and attendance at the transfer planning events—to establish baseline data for these performance measures.

Evaluation Data Sources and Methods at Glendale Community College
Glendale Community College used an online baseline survey questionnaire (see below under “Description of Preliminary Findings Related to the Objective” for details) to establish baseline data on these performance measures.

Description of Preliminary Findings Related to the Objective
Preliminary findings for each college are reported below.

Preliminary Findings of College of the Canyons
For performance measure 3a, College of the Canyons reports that no counselors have participated in staff development activities. Further, College of the Canyons reports that only one student has participated in a counseling session. These data represent baseline data for the two performance measures, respectively. Accordingly, the project target (3a) is to increase by two the number of counselors who participate in STEM-related professional development workshops. With respect to performance measure 3b, College of the Canyons reports a baseline measure of one session (i.e., academic advising session). Given that the project target is to increase the number of academic advising/counseling sessions by four sessions per student while in the program, the project target is 61 tutoring sessions. We derived this target by multiplying the number of unduplicated student headcount of current Spring 2012 cohort participants at College of the Canyons (n=15) by four (sessions per student) and adding one (i.e., the baseline of one session) for a total of 61 academic advising/counseling sessions.

Preliminary Findings of Glendale Community College
With respect to performance measure 3a (i.e., Glendale Community College counselors who participate in STEM professional development), there are no data available related to the number of Glendale Community College counselors who participated in STEM professional development workshops. Accordingly, cohort baseline data for 2010-2011 is set to 0. The target is to increase by two the number of Glendale Community College counselors who participate in STEM professional development workshops.
With respect to performance measure 3b (i.e., students’ participation in advising/counseling sessions), data were collected from baseline survey questionnaire (questions #23-25) of Glendale Community College students participating in the program (Spring 2012 cohort) who were invited to participate in an online survey in February 2012 to collect cohort baseline data about the types of services and programs they participated in during the Fall 2011 semester. The survey included items that asked if respondents attended any academic counseling sessions with a STEM counselor. Of the students in the cohort (n=15), one out of fourteen students who responded indicated that he/she attended one academic counseling session. Given that the target increase is to increase the number of academic advising/counseling sessions by four sessions per student while in the program, the project target is 61 tutoring sessions. We derived this target by multiplying the number of unduplicated student headcount of current Spring 2012 cohort participants at Glendale Community College (n=15) by four (sessions per student) and adding one (i.e., the baseline of one session) for a total of 61 academic advising/counseling sessions.

**Description of Project Activities Related to the Objective**
Specific project activities at College of the Canyons and Glendale Community College, respectively, are detailed below.

**Project Activities at College of the Canyons**
During this performance period we have discussed our counseling plan with the department chair of the counseling department and the department has agreed to support our need for an increase in counseling sessions and counselor professional development related to engineering and the STEM fields. Our plan is to send one or more counseling faculty members to STEM conferences so that they will have the tools that they need to successfully prepare our AIMS² scholars for transfer. Our counseling plan includes having our AIMS² scholars meet with counseling faculty twice a semester for every semester they are involved in the program at College of the Canyons. These appointments will result in the development of a Student Educational Plan (SEP) for each scholar. Our counselors will also provide informational workshops on transfer planning during the fall semesters to support the scholars transfer process.

**Project Activities at Glendale Community College**
Counselors will be notified of professional development opportunities through: their monthly CSUN meetings, STEMTech listservs, and networking with other STEM colleagues. At minimum, students participating in the program will be required to meet one-on-one with the AIMS²/HSI-STEM counselor, twice per semester. During these sessions, students will develop or update their student educational plans (SEP). SEPs are a list of required General Education and Major requirements prepared only by academic counselors. In addition, advising of prerequisite courses will be provided to properly guide students.

**Plans to Use of Performance Data to Monitor Progress**
At College of the Canyons, progress toward the above performance measures of this objective will be tracked the number of counseling appointments, the number of SEPs created or modified, and attendance at the transfer planning events. Meanwhile, at Glendale Community College, plans to monitor performance on these two measures include use of results from the online survey and recording counselor(s) attendance at professional development workshops.
Enhance the academic participation/transfer readiness rate of College of the Canyons and Glendale Community College students in STEM fields

4. Project Objective

Check if this is a status update for the previous budget period.

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<thead>
<tr>
<th>4.a. Performance Measure* for College of the Canyons**</th>
<th>Measure Type</th>
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<td>Increase by 75 percent the College of the Canyons and Glendale Community College students who participate in tutoring sessions in STEM classes and who participate in STEM academic workshops over the 2010-11 baseline rate</td>
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*Note that the performance measures for this objective have been disaggregated from the original performance measure for reporting purposes only.

**Note that this performance measure is reported in separate tables for College of the Canyons and Glendale Community College, given differences in target/actual performance data for this reporting period.

***Note that in the ratio columns of the target and actual performance data “the numerator represents the numerical target (e.g., the number of students that are expected to attain proficiency) or actual performance data (e.g., the number of students that attained proficiency), and the denominator represents the universe (e.g., all students served)” (Instructions for Grant Performance Report, p. 7).

****Baseline data (per Instructions for Grant Performance Report)

<table>
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<th>4.a. Performance Measure* for Glendale Community College**</th>
<th>Measure Type</th>
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<tr>
<td>Increase by 75 percent the College of the Canyons and Glendale Community College students who participate in tutoring sessions in STEM classes and who participate in STEM academic workshops over the 2010-11 baseline rate</td>
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****Baseline data (per Instructions for Grant Performance Report)

<table>
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<th>4.b. Performance Measure* College of the Canyons**</th>
<th>Measure Type</th>
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<td>Increase by 75 percent the College of the Canyons and Glendale Community College students who enroll in online courses with CSUN faculty over the 2010-11 baseline rate</td>
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### 4.b. Performance Measure* for Glendale Community College**

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****Baseline data (per Instructions for Grant Performance Report)

### Explanation of Progress (Include Qualitative Data and Data Collection Information)

**Evaluation Data Sources and Methods for the Objective**

College of the Canyons and Glendale Community College report their respective data sources and methods below.

**Evaluation Data Sources and Methods at College of the Canyons**

College of the Canyons collected data on student participation in tutoring sessions through an existing program tracking system.

**Evaluation Data Sources and Methods at Glendale Community College**

Glendale Community College used an online baseline survey questionnaire (see below under “Description of Preliminary Findings Related to the Objective” for details) to establish baseline data on these performance measures.

### Description of Preliminary Findings Related to the Objective

Preliminary findings for each college are reported below.

**Preliminary Findings of College of the Canyons**

For performance measure 4a, College of the Canyons reports that no students in the cohort participated in tutoring (see performance measure 6a) or academic workshops prior to cohort entry. In addition, with respect to performance measure 4b, College of the Canyons reports that no students enrolled in online courses with CSUN faculty prior to cohort entry. Given current baseline data reported by College of the Canyons, project targets have been established that are intended to achieve the percent increase in both performance measures related to increases in the number of students (not sessions or workshops) that participate in tutoring (4a), workshops (4a), and online classes (4b). Accordingly, the current target for performance measure 4a is set at 1/15 (7% of all cohort participants) and for performance measure 4b is 1/15 (7% of all cohort participants).

**Preliminary Findings of Glendale Community College**
With respect to performance measure 4a (i.e., Glendale Community College students’ participation in STEM tutoring), data were collected from baseline survey questionnaire (questions #9-12). Glendale Community College students participating in the program (Spring 2012 cohort) were invited to participate in an online survey in February 2012 to collect cohort baseline data about the types of services and programs they participated in during the Fall 2011 semester, including any tutoring support for their STEM classes. Of all students in the current Spring 2012 cohort (n=15), two of the fourteen students that responded indicated that they participated in tutoring sessions for a STEM class during the Fall 2011 semester. They each attended 2-3 sessions of tutoring for additional support in mathematics. One of the students indicated that the tutoring was to help him/her prepare for the mathematics placement test, rather than for support in an enrolled course. In further support of the establishment of a baseline for performance measure 4a, project students were also asked to indicate the number of STEM facilitated academic workshops they attended during the Fall 2011 semester. These academic workshops include workshops that help students with planning coursework, time management, etc. and were sponsored by a STEM department. One student indicated he or she attended six or more STEM-facilitated academic workshops during the Fall 2011 semester. The topics included: library workshops and transfer application workshops (data from baseline survey questionnaire, questions #13-15). In addition to STEM-facilitated academic workshops, students were asked in the survey if they participated in any supplemental lab sessions for a STEM class. Supplemental lab sessions consist of learning workshops offered to specific classes that focus on problem solving exercises centered on the course material. One student indicated he/she attended 1-3 supplemental lab sessions, which were led by student leaders (data from baseline survey questionnaire, questions #16-18). Between tutoring sessions, STEM-facilitated academic workshops, and supplemental lab learning workshops, a total of four students in the current cohort reported participating in an activity related to performance measure 4a. Given the total of four students, the baseline for the current cohort for this measure is 4 students (4/15 or 27% of all cohort participants). Accordingly, the project target of increasing the number of students who participate in tutoring session and academic workshops by 75% requires us to set the current target for performance measure at 7/15 (47% of all cohort participants).

For performance measure 4b (i.e., Glendale Community College students’ enrollment in online courses with CSUN faculty), data from baseline survey questionnaire (questions #21-22) indicated that none of the Glendale Community College students enrolled in online courses at CSUN during the Fall 2011 semester. As a consequence, current baseline data reported by Glendale Community College indicates that the project target is 1/15 (7% of all cohort participants). This project target reflects the performance measure’s unit of analysis of students (not sessions or workshops) for performance measure 4b.

Description of Project Activities Related to the Objective
Specific project activities at College of the Canyons and Glendale Community College, respectively, are detailed below.

Project Activities at College of the Canyons
Project activities include tutoring in math, engineering and physics with faculty tutors and student tutors for our AIMS² scholars. During this performance period, College of the Canyons established a drop in tutorial schedule for math, engineering and physics. There are four hours of engineering tutoring with faculty tutors, four hours of physics tutoring with faculty tutors and fourteen hours of mathematics tutoring with both faculty and student tutors available for our AIMS² scholars. Because of the financial situation for AIMS² scholars it is difficult for them to enroll in university courses while they are still at College of the Canyons.

Project Activities at Glendale Community College
During the course of the project, students will be supplemented with tutoring to increase their math, science and language skills to increase their “transfer readiness” in these areas. The Glendale Community College Learning Center provides tutoring services for students, and is responsible for screening and training all student tutors. The Learning Center requires that all students who receive tutoring to swipe their student ID cards for recording keeping. The AIMS²/HSI-STEM counselor will be able to track program students who have participated in tutoring services via PeopleSoft. The AIMS²/HSI-STEM counselor will also remind students of the tutoring support available and their requirement to seek tutoring services. Glendale Community College program administrators and the AIMS²/HSI-STEM counselor are working on articulating present and new courses with CSUN faculty. Some of the present courses, such as Computer Science courses, will be offered as a hybrid model.

Plans to Use of Performance Data to Monitor Progress
At College of the Canyons, progress toward the above performance measures of this objective will be tracked using a tracking mechanism to be developed so that they are able to quantify their time with both peer and faculty tutors and participation in peer tutoring session and academic workshops. Meanwhile, Glendale Community College plans to monitor performance on these two measures from the online survey questionnaire results and by tracking students’ tutoring attendance via the college’s PeopleSoft program.
### SECTION A - Performance Objectives Information and Related Performance Measures Data

#### 5. Project Objective

Check if this is a status update for the previous budget period.

Increase and enhance student-faculty interaction at College of the Canyons and Glendale Community College with CSUN faculty in STEM fields

##### 5.a. Performance Measure* for College of the Canyons**

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*Note that the performance measures for this objective have been disaggregated from the original performance measure for reporting purposes only.**Note that this performance measure is reported in separate tables for College of the Canyons and Glendale Community College, given differences in target/actual performance data for this reporting period.***No baseline data available for this report

##### 5.a. Performance Measure* for Glendale Community College**

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##### 5.b. Performance Measure

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Evaluation Data Sources and Methods for the Objective
College of the Canyons and Glendale Community College report their respective data sources and methods below.

Evaluation Data Sources and Methods at College of the Canyons
No baseline data are reported for College of the Canyons here. Baseline data will be reported in the next performance report.

Evaluation Data Sources and Methods at Glendale Community College
Glendale Community College used an online baseline survey questionnaire (see below under “Description of Preliminary Findings Related to the Objective” for details) to establish baseline data on these performance measures.

Description of Preliminary Findings Related to the Objective
Preliminary findings for each college are reported below.

Preliminary Findings of College of the Canyons
No cohort baseline data are reported for College of the Canyons here. Baseline data for the current cohort will be reported in the next performance report.

Preliminary Findings of Glendale Community College
For performance measure 5a (i.e., student-faculty interactions), data were collected from cohort baseline survey questionnaire (questions #26-27). Glendale Community College students participating in the program were invited to participate in an online survey in February 2012 to collect baseline data about the types of services and programs they participated in during the Fall 2011 semester, including any interactions with faculty. Among all program participants in the Spring 2012 cohort (n=15), fourteen students completed a survey. Two of the students (14%) indicated in the survey that they interacted with CSUN College of Engineering & Computer Science faculty during the Fall 2011 semester. The types of student-faculty interactions consisted of: phone communication (4-5 times), out of class discussions (1 time), and office hour visits (1 time). Given the total of two students who responded that they had interacted with faculty, the baseline for the current cohort for this measure is 2 students (2/15 or 13% of all cohort participants). Accordingly, the project target of increasing the number of students who interact with faculty by 90% suggests that we set the current target for performance measure at 4/15 (27% of all cohort participants). With respect to performance measure 5b (i.e., quality of student-faculty interactions), neither baseline nor actual performance data is currently available for the quality of student-faculty interactions (from baseline survey questionnaire, question #28).

Description of Project Activities Related to the Objective
Specific project activities at College of the Canyons and Glendale Community College, respectively, are detailed below.

Project Activities at College of the Canyons
College of the Canyons is developing a schedule of appointments for engineering faculty to spend one-on-one time with each member of AIMS\textsuperscript{2} student cohort. Each student will be scheduled for monthly one-on-one time with faculty in the engineering department to discuss their academic goals, their professional aspirations and the barriers they may face along the way. College of the Canyons also plans to invite CSUN engineering faculty to have lunch at College of the Canyons with cohort students so that they may learn more about the opportunities available to them at CSUN. This chance to interact informally with CSUN faculty and learn about their research will provide a unique experience for College of the Canyons AIMS\textsuperscript{2} students.

Project Activities at Glendale Community College
Glendale Community College program administrators and the AIMS\textsuperscript{2}/HSI-STEM counselor will identify faculty mentors for students to interact with. Faculty mentors will be identified and selected based on AIMS\textsuperscript{2} student majors. The AIMS\textsuperscript{2}/HSI-STEM counselor also will meet with participants weekly for one hour in a club capacity. The purpose of these meetings is to discuss the projects, plan field trips, and additional plans with CSUN. An event is tentatively scheduled for April 2012 for student
participants to visit the CSUN campus and meet with faculty. The baseline data indicate that 13% of students participated in student-faculty interaction in Fall 2011. This is higher than anticipated when developing the performance measures. As such, since the target for this performance measure was to increase by 90%, the target will be to have a 100% student-faculty interaction rate, or 15 of 15 program participants.

**Plans to Use of Performance Data to Monitor Progress**

College of the Canyons expects to monitor progress toward the performance measures of this objective by using faculty/scholar appointments and scholar participation in CSUN faculty events at College of the Canyons. Meanwhile, at Glendale Community College, plans to monitor performance on these two measures include use of results from the online survey questionnaire and group interviews (i.e., participant focus groups). Specifically, Glendale Community College plans to collect data on the quality of student-faculty interactions in May 2012 through student participant focus groups and a follow up online survey. For the student focus groups, a protocol will be developed to inquire about students’ experiences in interacting with CSUN faculty, the frequency and methods of interactions, and what was most and least beneficial about the support they received. The focus groups will be led by the program evaluators and will be audio recorded as well as have hand-written notes taken during the discussion.
Enhance the peer environment of College of the Canyons and Glendale Community College students in STEM fields

### 6. Project Objective

Check if this is a status update for the previous budget period.

**Objective:**
Increase by 15 the number of College of the Canyons and Glendale Community College students who participate in peer-peer tutoring sessions over the 2010-11 baseline number

#### 6.a. Performance Measure* for College of the Canyons**

<table>
<thead>
<tr>
<th>Measure Type</th>
<th>Quantitative Data***</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project</td>
<td></td>
</tr>
<tr>
<td><strong>Target</strong></td>
<td><strong>Actual Performance Data</strong>**</td>
</tr>
<tr>
<td>Raw Number</td>
<td>Ratio</td>
</tr>
<tr>
<td>15</td>
<td>/</td>
</tr>
</tbody>
</table>

*Note that the performance measures for this objective have been disaggregated from the original performance measure for reporting purposes only.

**Note that this performance measure is reported in separate tables for College of the Canyons and Glendale Community College, given differences in target/actual performance data for this reporting period.

***Note that in the ratio columns of the target and actual performance data “the numerator represents the numerical target (e.g., the number of students that are expected to attain proficiency) or actual performance data (e.g., the number of students that attained proficiency), and the denominator represents the universe (e.g., all students served)” (Instructions for Grant Performance Report, p. 7).

****Baseline data (per Instructions for Grant Performance Report)

#### 6.a. Performance Measure* for Glendale Community College**

<table>
<thead>
<tr>
<th>Measure Type</th>
<th>Quantitative Data***</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project</td>
<td></td>
</tr>
<tr>
<td><strong>Target</strong></td>
<td><strong>Actual Performance Data</strong>**</td>
</tr>
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<td>Raw Number</td>
<td>Ratio</td>
</tr>
<tr>
<td>19</td>
<td>/</td>
</tr>
</tbody>
</table>

*Note that the performance measures for this objective have been disaggregated from the original performance measure for reporting purposes only.

**Note that this performance measure is reported in separate tables for College of the Canyons and Glendale Community College, given differences in target/actual performance data for this reporting period.

***Note that in the ratio columns of the target and actual performance data “the numerator represents the numerical target (e.g., the number of students that are expected to attain proficiency) or actual performance data (e.g., the number of students that attained proficiency), and the denominator represents the universe (e.g., all students served)” (Instructions for Grant Performance Report, p. 7).

****Baseline data (per Instructions for Grant Performance Report)
### 6.b. Performance Measure* for College of the Canyons**

**Measure Type**
Quantitative Data

**Project**

<table>
<thead>
<tr>
<th>Raw Number</th>
<th>Ratio</th>
<th>%</th>
<th>Raw Number</th>
<th>Ratio</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>15</td>
<td>/</td>
<td></td>
<td>0</td>
<td>/</td>
<td></td>
</tr>
</tbody>
</table>

*Note that the performance measures for this objective have been disaggregated from the original performance measure for reporting purposes only.

**Note that this performance measure is reported in separate tables for College of the Canyons and Glendale Community College, given differences in target/actual performance data for this reporting period.

***Note that in the ratio columns of the target and actual performance data “the numerator represents the numerical target (e.g., the number of students that are expected to attain proficiency) or actual performance data (e.g., the number of students that attained proficiency), and the denominator represents the universe (e.g., all students served)” (Instructions for Grant Performance Report, p. 7).

****Baseline data (per Instructions for Grant Performance Report)

### 6.b. Performance Measure* for Glendale Community College**

**Measure Type**
Quantitative Data

**Project**

<table>
<thead>
<tr>
<th>Raw Number</th>
<th>Ratio</th>
<th>%</th>
<th>Raw Number</th>
<th>Ratio</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>15</td>
<td>/</td>
<td></td>
<td>0</td>
<td>/</td>
<td></td>
</tr>
</tbody>
</table>

*Note that the performance measures for this objective have been disaggregated from the original performance measure for reporting purposes only.

### 6.c. Performance Measure*

**Measure Type**
Quantitative Data

**Project**

<table>
<thead>
<tr>
<th>Raw Number</th>
<th>Ratio</th>
<th>%</th>
<th>Raw Number</th>
<th>Ratio</th>
<th>%</th>
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<tbody>
<tr>
<td>/</td>
<td>/</td>
<td></td>
<td>/</td>
<td>/</td>
<td></td>
</tr>
</tbody>
</table>

*Note that the performance measures for this objective have been disaggregated from the original performance measure for reporting purposes only.

Explanation of Progress (Include Qualitative Data and Data Collection Information)

**Evaluation Data Sources and Methods for the Objective**

**Evaluation Data Sources and Methods at College of the Canyons**

College of the Canyons collected data on student participation in tutoring sessions through an existing program tracking system.

**Evaluation Data Sources and Methods at Glendale Community College**

Glendale Community College used an online baseline survey questionnaire (see below under “Description of Preliminary Findings Related to the Objective” for details) to establish baseline data on these performance measures.

**Description of Preliminary Findings Related to the Objective**

Preliminary findings for each college are reported below.
Preliminary Findings of College of the Canyons
With respect to performance measure 6a, College of the Canyons reports that no students in the current Spring 2012 cohort participated in tutoring (see performance measure 4a). In addition, College of the Canyons reports that no students were mentored by CSUN students (performance measure 6b). Given cohort baseline data reported by the College of the Canyons, project targets have been established that are intended to achieve the number increase in both performance measures. Accordingly, the target for performance measure 6a is set at 15 students (i.e., all cohort participants) and for performance measure 6b is 15 students (i.e., all cohort participants). We derived these current project targets by adding 15 (students) to the current baseline for both measures 6a and 6b (n=0).

Preliminary Findings of Glendale Community College
With respect to performance measure 6a, (i.e., Glendale Community College students’ participation in peer-peer tutoring), data were collected from baseline survey questionnaire (questions #29-32). Glendale Community College students participating in the program (Spring 2012) were invited to participate in an online survey in February 2012 to collect baseline data for the current cohort about the types of services and programs they participated in during the Fall 2011 semester, including peer-peer tutoring. Four students indicated in the survey that they received peer tutoring during the Fall 2011 semester. Specifically, these sessions were led by Glendale Community College students. The number of peer tutoring sessions that these students attended varied. The courses that students indicated that they received peer tutoring in were: science, technology, mathematics, and psychology. For performance measure 6b (i.e., Glendale Community College students’ peer mentored by CSUN students), the online student survey to collect cohort baseline data indicated that none of the Glendale Community College students received mentoring from a CSUN student. Accordingly, the target for performance measure 6a is set at 19 students (i.e., a 15 student increase over the current baseline of 4 students). The current project target for performance measure 6b is 15 students (i.e., all cohort participants), given that no student had reported participating in peer mentoring. We derived the current project target for performance measure 6b by adding 15 (students) to the current baseline for the measure (n=0). Finally, with respect to performance measure 6c (i.e., quality of peer interactions), neither baseline nor actual performance data for the quality of peer interactions are currently available.

Description of Project Activities Related to the Objective
While College of the Canyons and Glendale Community College have developed and/or plan to develop project activities, an overall project activity that we plan to develop relates to CSUN cohort participants mentoring College of the Canyons and Glendale Community College cohort participants as peer mentors. Specific project activities at College of the Canyons and Glendale Community College, respectively, are detailed below.

Project Activities at College of the Canyons
During this performance period College of the Canyons established a drop in tutorial schedule for math, engineering and physics. Three peer tutors for mathematics have been hired and trained. College of the Canyons project faculty and staff are currently developing additional training workshops for peer tutors and, as mentioned earlier, are developing a tracking mechanism for AIMS² scholars using peer tutors.

Project Activities at Glendale Community College
Glendale Community College students are required to participate in tutoring to increase their math, science and language skills. The Glendale Community College Learning Center provides tutoring services for students, and is responsible for screening and training all student tutors. The Learning Center requires that all students who receive tutoring swipe their student ID cards for recording keeping. The AIMS²/HSI-STEM counselor will be able to track program students who have participated in tutoring services via PeopleSoft. The AIMS²/HSI-STEM counselor will also remind students of the tutoring support available and their requirement to seek tutoring services.

Plans to Use of Performance Data to Monitor Progress
College of the Canyons will track all scholar interactions with peer mentors from both College of the Canyons and CSUN. Meanwhile, at Glendale Community College, plans to monitor performance on these two measures include tracking students participation in tutoring through the college’s PeopleSoft program as well as using the results from the online survey questionnaire and group interview (i.e., participant focus group). Specifically, the quality of peer interactions will be collected in May 2012 through student participant focus groups and a follow up online survey. For the student focus groups, a protocol will be developed to inquire about students’ expe-
riences in their peer mentorship, the types and frequency of activities, and what was most and least beneficial about the support they received. The focus groups will be led by the program evaluators and will be audio recorded as well as have hand-written notes taken during the discussion.
7. Project Objective

Check if this is a status update for the previous budget period.

Increase the program completion of Hispanic and low-income students in STEM fields

7.a. Performance Measure*

After two years, increase from 26 % to 30% the number of Hispanic and low-income students who complete baccalaureate degrees in STEM fields over the 2010-11 baseline number

<table>
<thead>
<tr>
<th>Measure Type</th>
<th>Quantitative Data**</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project</td>
<td>Target</td>
</tr>
<tr>
<td>Raw Number</td>
<td>Ratio %</td>
</tr>
<tr>
<td>21/68</td>
<td>30</td>
</tr>
<tr>
<td>Actual Performance Data***</td>
<td></td>
</tr>
<tr>
<td>Raw Number</td>
<td>Ratio %</td>
</tr>
<tr>
<td>18/68</td>
<td>26.5%</td>
</tr>
</tbody>
</table>

*CSUN institutional data (not project cohort data)

**Note that in the ratio columns of the target and actual performance data “the numerator represents the numerical target (e.g., the number of students that are expected to attain proficiency) or actual performance data (e.g., the number of students that attained proficiency), and the denominator represents the universe (e.g., all students served)” (Instructions for Grant Performance Report, p. 7).

***Baseline data (per Instructions for Grant Performance Report)

Explanation of Progress (Include Qualitative Data and Data Collection Information)

Evaluation Data Sources and Methods for the Objective

We plan to work with CSUN’s Office of Institutional Research to produce the 2011-12 program completion figures for Hispanic and/or low-income students in engineering and computer science fields. The end of the 2011-12 academic year will mark the end of the first academic year of the project (but will only mark the end of the first semester after formation of the first cohort of student participants during the Spring 2012 term). In addition, we worked with the Office of Institutional Research to identify baseline data for 2010-11.

Description of Preliminary Findings Related to the Objective

The baseline data for this measure (1a) is from CSUN’s Office of Institutional Research and includes institutional data (i.e., not project cohort data). Accordingly, the baseline data do not correspond to the number of project cohort participants but rather to all students who met the criteria for inclusion in the transfer cohort (see next sentence). The baseline data for Hispanic and/or low-income students in engineering and computer science at CSUN indicates that the two-year program completion (i.e., graduation) rate for the most recent entry term (Fall 2007) for Hispanic and/or low-income (i.e., Pell grant recipients) transfer students planning to a major in a field in the College of Engineering and Computer Science was 5.9% (4/68), while the three-year completion rate for the same student population in the same entry term (i.e., Fall 2007) was 26.5% (18/68). This latter rate—26.5%—comprises the baseline data for the project and the basis for which the project target of 30% is set. Given the project target increase, the number of students who graduate by Spring 2014 (two years after the first cohort entry) is 21/68 (or just over 30%).

Description of Project Activities Related to the Objective

To support this project objective, project faculty met with their cohort participants early in the Spring 2012 term to establish a faculty mentoring relationship and coordinate project activities. Project activities currently under way and/or planned this year include the following: participation in CSUN’s Tech Fest and Senior Design...
Project, peer tutoring and peer mentoring, participation undergraduate research projects, projects in an instructional lab of the faculty mentor, and introduction to an appropriate professional society student chapter in a discipline of the faculty mentor.

Plans to Use of Performance Data to Monitor Progress
We plan to work with the Office of Institutional Research to collect actual student program completion data from the 2011-12 academic year. Once the Office of Institutional Research sends us the 2011-12 data on student transfer, we will calculate the performance data for this measure. Data collection plans to measure this objective include annual secondary data extracts from the Office of Institutional Research for each academic year. Once we calculate the rate for the first project year, we plan to publish the results on our project’s website (http://www.ees.csun.edu/aims2/) and discuss the updated rate in our project meetings. In addition, we worked with the Office of Institutional Research to identify the cohort participant demographic characteristics so that we could identify a control group to compare the cohort group to and we could understand the cohort holistically. As a consequence, we worked with the Office of Institutional Research to produce frequency distributions of the following demographic characteristics of the cohort participants: age, sex, ethnicity, transfer community college, first term enrolled at CSUN, local cumulative GPA, number of units completed at CSUN, and Pell grant status. After we examined the demographic characteristics, we identified a control group of students who did not participate as a member of the project cohort and requested student achievement data from the Office of Institutional Research. The student achievement measures included grade distribution on a set of engineering and computer science courses, term GPA, local cumulative GPA, next-term persistence, and program completion. Once the Spring 2012 semester ends, we will use data on these measures to compare achievement outcomes between cohort, control, and college groups.
8. Project Objective  |  | Check if this is a status update for the previous budget period.

Enhance the academic advising capacity in STEM fields at CSUN

| 8.a. Performance Measure* | Measure Type | Quantitative Data |
|----------------------------------------------------------|
| Increase by one the number of academic advisors at CSUN in STEM fields over the 2010-11 baseline number | Project | Target | Raw Number | Ratio | % |
| | | Actual Performance Data | Raw Number | Ratio | % |
| | | | 4 | / | 4 | / |

*Note that the performance measures for this objective have been disaggregated from the original performance measure for reporting purposes only.

| 8.b. Performance Measure* | Measure Type | Quantitative Data |
|----------------------------------------------------------|
| Increase by two the number of advising/counseling sessions with students** in STEM fields over the 2010-11 baseline number | Project | Target | Raw Number | Ratio | % |
| | | Actual Performance Data | Raw Number | Ratio | % |
| | | | 116 | / | 18 | / |

*Note that the performance measures for this objective have been disaggregated from the original performance measure for reporting purposes only.

**CSUN cohort participants only

Explanation of Progress (Include Qualitative Data and Data Collection Information)

Evaluation Data Sources and Methods for the Objective
Baseline and actual performance data for these two measures were collected through a combination of document data and student structured journal sources during the period.

Description of Preliminary Findings Related to the Objective
Baseline data for the first performance measures (8a) for this objective reveal that CSUN’s College of Engineering and Computer Science had three full-time staff academic advisors in 2010-11. Given that the college had three staff academic advisors prior to the project, the project target is four total academic advisors. Meanwhile, we have augmented the academic advising capacity of the college through the six faculty mentors who include academic advising with their cohort participants. Actual performance data for the first performance measure (8a) demonstrates that we met the project target and achieved this component of the objective with the addition of one new staff academic advisor to the college. The staff academic advisor, LaTesha Hagler, works with the student services office of the college and coordinates project
activities related to cohort participant advising. With Tesha’s arrival, the college now has four staff academic advisors in total, one above the baseline data. Given the actual performance data (n=4) and the project target (n=4), we have met this performance measure of the objective.

Baseline data collection (for the current CSUN cohort) related to the second objective (8b) began with the CSUN student recruitment process for the Spring 2012 cohort in late Fall 2011 and early Spring 2012 terms. During the interview, we asked cohort applicants the number of academic advising sessions that they had in the Fall 2011 term or the term immediately prior to the formation of the first project cohort in Spring 2012. After aggregating the results, the number of academic advising sessions that CSUN cohort participants reported prior to project entry is 56 (CSUN students only), which represents the baseline figure for this measure. Given the project target of increasing the number of academic advising sessions by two sessions per student, the current target number of sessions for the project is 116. We derived this target by multiplying the number of unduplicated student headcount of current Spring 2012 cohort participants at CSUN (n=30) by two (sessions per student) and adding 56 sessions to the total for a total of total of 116. Further, actual performance data for the second performance measure (8b) reveals that cohort participants reported 18 total academic advising sessions through the end of February 2012. This figure (n=18) demonstrates progress related to the project target of 116 total academic advising sessions. Data collected through cohort participant journaling and faculty mentor journaling in February 2012 supported the documentation of actual performance on this second performance measure. Data collection to update the actual performance on the second objective (8b) will continue on a monthly basis through document data collection (e.g., cohort participant and faculty mentor journaling through a web-based survey/questionnaire).

Description of Project Activities Related to the Objective
Current and planned project activities that support the two performance measures for this objective include faculty mentoring, career advising, academic advising in the student services center, an Academic Success Center, and Facilitated Academic Workshops.

Plans to Use of Performance Data to Monitor Progress
Data collection to support performance measure 8b commenced in February 2012 with student journaling (via a web-based form in the project management site in Moodle). Student journaling occurs through student completion of an electronic journal form with items related to project outcomes, including an items related to the number of academic advising sessions for the month. Students complete and submit an electronic journal entry by the end of every month. Once submitted, data extracts in Excel occur, after which a tabulation of the aggregate number of counseling sessions are performed. We anticipate the reporting of more actual performance data for second measure (8b) in the next performance report and plan to monitor progress on this second measure through use of Moodle for student journaling and discussion of the results of the journaling in project meetings.
### SECTION A - Performance Objectives Information and Related Performance Measures Data

(See Instructions. Use as many pages as necessary.)

#### 9. Project Objective

Check if this is a status update for the previous budget period.

Enhance the academic participation rate of CSUN students in STEM classes, particularly in classes identified as barriers to retention, persistence, and completion in STEM fields.

<table>
<thead>
<tr>
<th>9.a. Performance Measure*</th>
<th>Measure Type</th>
<th>Quantitative Data**</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increase by 75 percent the students who participate in tutoring sessions in STEM classes (identified as barriers) over the 2010-11 baseline rate</td>
<td>Project</td>
<td>Target</td>
</tr>
<tr>
<td></td>
<td>Raw Number</td>
<td>Ratio</td>
</tr>
<tr>
<td></td>
<td>26/30</td>
<td>87</td>
</tr>
</tbody>
</table>

*Note that the performance measures for this objective have been disaggregated from the original performance measure for reporting purposes only.

**Note that in the ratio columns of the target and actual performance data “the numerator represents the numerical target (e.g., the number of students that are expected to attain proficiency) or actual performance data (e.g., the number of students that attained proficiency), and the denominator represents the universe (e.g., all students served)” (Instructions for Grant Performance Report, p. 7).

<table>
<thead>
<tr>
<th>9.b. Performance Measure*</th>
<th>Measure Type</th>
<th>Quantitative Data**</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increase by 75 percent the students who participate in STEM academic workshops over the 2010-11 baseline rate</td>
<td>Project</td>
<td>Target</td>
</tr>
<tr>
<td></td>
<td>Raw Number</td>
<td>Ratio</td>
</tr>
<tr>
<td></td>
<td>11/30</td>
<td>37</td>
</tr>
</tbody>
</table>

*Note that the performance measures for this objective have been disaggregated from the original performance measure for reporting purposes only.

**Note that in the ratio columns of the target and actual performance data “the numerator represents the numerical target (e.g., the number of students that are expected to attain proficiency) or actual performance data (e.g., the number of students that attained proficiency), and the denominator represents the universe (e.g., all students served)” (Instructions for Grant Performance Report, p. 7).

<table>
<thead>
<tr>
<th>9.c. Performance Measure*</th>
<th>Measure Type</th>
<th>Quantitative Data**</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increase by 75 percent the students who participate in supplemental labs sessions with CSUN faculty over the 2010-11 baseline rate</td>
<td>Project</td>
<td>Target</td>
</tr>
<tr>
<td></td>
<td>Raw Number</td>
<td>Ratio</td>
</tr>
<tr>
<td></td>
<td>2/30</td>
<td>7</td>
</tr>
</tbody>
</table>

*Note that the performance measures for this objective have been disaggregated from the original performance measure for reporting purposes only.
Data collection for cohort baseline data of these three performance measures of this objective began with the student cohort recruitment process in late Fall 2011 and early Spring 2012 terms. During the interview, we asked cohort applicants for the Spring 2012 cohort the number of tutoring sessions, academic workshops, and supplemental lab sessions in which they had participated in the Fall 2011 term. Overall, the number of Spring 2012 cohort students who reported having participated in tutoring sessions is 15 students, while the total number of cohort students who reported having participated in an academic workshop is six students. Further, only one cohort student had reported participating in supplemental lab sessions prior to project entry (i.e., in Fall 2011). These three figures relate to the number of students (i.e., headcount) rather than sessions or workshops. These three figures represent the baseline data for these three measures, respectively. Given the baseline data, the current project targets—all of which represent a 75% increase—for the three measures are 26 students (9a), 11 students (9b), and 2 students (9c).

**Note that in the ratio columns of the target and actual performance data “the numerator represents the numerical target (e.g., the number of students that are expected to attain proficiency) or actual performance data (e.g., the number of students that attained proficiency), and the denominator represents the universe (e.g., all students served)” (Instructions for Grant Performance Report, p. 7).**

**Explanation of Progress (Include Qualitative Data and Data Collection Information)**

**Evaluation Data Sources and Methods for the Objective**

Data collection for cohort baseline data of these three performance measures of this objective began with the student cohort recruitment process in late Fall 2011 and early Spring 2012 terms. During the interview, we asked cohort applicants for the Spring 2012 cohort the number of tutoring sessions, academic workshops, and supplemental lab sessions in which they had participated in the Fall 2011 term. Overall, the number of Spring 2012 cohort students who reported having participated in tutoring sessions is 15 students, while the total number of cohort students who reported having participated in an academic workshop is six students. Further, only one cohort student had reported participating in supplemental lab sessions prior to project entry (i.e., in Fall 2011). These three figures relate to the number of students (i.e., headcount) rather than sessions or workshops. These three figures represent the baseline data for these three measures, respectively. Given the baseline data, the current project targets—all of which represent a 75% increase—for the three measures are 26 students (9a), 11 students (9b), and 2 students (9c).

**Description of Preliminary Findings Related to the Objective**

Actual performance data for the three measures, collected through student structured journaling, reveals that through February 2012 seven students reported participating in tutoring sessions (performance measure 9a). This figure demonstrates progress toward the project target for student participation in tutoring sessions and represents 23% (7/30) of all participants in the cohort. With respect to performance measure 9b, seven students reported participating in academic workshops through the period (February 2012), which represents 23% (7/30) of cohort participants and substantive progress toward meeting the project target for this performance measure. Finally, one student reported participating in a supplemental lab, which points to slight progress in this area of the objective (i.e., 3% of all cohort participants) but substantial progress toward the project target (n=2). Taken together, actual performance data on these three measures demonstrate steady progress in meeting this project objective related to increasing student participation by 75% in tutoring, academic workshops, and supplemental labs.

**Description of Project Activities Related to the Objective**

Currently, project faculty and staff are working to meet these three project performance measures of this objective. With respect to the first performance measure (9a), after the formation of the first participant cohort in January 2012, we turned our attention to recruiting, hiring, and assigning classes to peer tutors from CSUN to work with cohort participants. Project faculty and staff developed a process to advertise, recruit, hire, and train peer tutors from CSUN’s upper-division undergraduate and graduate students in the College of Engineering and Computer Science. As part of the process, faculty mentors worked with project staff to identify the “bottleneck” and/or “gateway” courses where tutoring may be needed for cohort participants. With the recent selection and hiring of peer tutors (February-March 2012), tutoring services will be available to cohort participants on an ongoing basis. In addition to these activities related to the first performance measure (9a), planned activities related to the second performance measure (9b) include an Academic Success Center, where workshops may be hosted, participation in Facilitated Academic Workshops, and participation in regional workshops of appropriate professional societies (on the recommendation of faculty mentors). To support our efforts in this area, we plan to post and disseminate information on upcoming workshops on our project’s website (http://www.ecs.csun.edu/aims2/) on the “Workshop Schedules” page. Finally, faculty mentors are planning small group sessions with cohort participants in their instructional labs (to support performance measure 9c). As part of the project, we received the HP tablets (2760’s) and a wireless cart in early January 2012. Since then, we loaded DyKnow, the software that allows users to collaborate interactively, so that faculty mentors and cohort participants can use them during supplemental lab, research, or mentor sessions.

**Plans to Use of Performance Data to Monitor Progress**

Further data collection to measure actual performance on these three performance measures for this objective consists of survey data collection (e.g., cohort journaling), which occurs through student completion of an electronic journal form with items related to project outcomes. Specifically, we included items to measure performance in these three objectives when we ask students to indicate the number of sessions or workshops that they attended in the past month, including the number of supplemental lab sessions, the number of academic advising sessions, and the number of academic workshops. The journaling process occurs when students complete and submit an electronic journal entry by the end of every month. Once submitted, data extracts in Excel occur, after which a tabulation of the aggregate number of counseling sessions can be performed. Given that student journaling began in February 2012, we anticipate the reporting of additional actual performance data for all three measures in the performance report for the first year of the project period. We plan to use the results from this data collection process to monitor progress on three performance measures related to this objective at monthly project meetings.
10. Project Objective  [ ] Check if this is a status update for the previous budget period.

Enhance the research participation rate of CSUN students in STEM fields

10.a. Performance Measure*

<table>
<thead>
<tr>
<th>Measure Type</th>
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<tbody>
<tr>
<td>Project</td>
</tr>
<tr>
<td>Quantitative Data**</td>
</tr>
</tbody>
</table>

Increase by 50 percent CSUN students who participate in research-related activities with faculty in STEM fields

<table>
<thead>
<tr>
<th>Raw Number</th>
<th>Ratio</th>
<th>%</th>
<th>Raw Number</th>
<th>Ratio</th>
<th>%</th>
</tr>
</thead>
<tbody>
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<td></td>
<td>5/30</td>
<td>16</td>
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</table>

*Note that the performance measures for this objective have been disaggregated from the original performance measure for reporting purposes only.

**Note that in the ratio columns of the target and actual performance data “the numerator represents the numerical target (e.g., the number of students that are expected to attain proficiency) or actual performance data (e.g., the number of students that attained proficiency), and the denominator represents the universe (e.g., all students served)” (Instructions for Grant Performance Report, p. 7).

10.b. Performance Measure*

<table>
<thead>
<tr>
<th>Measure Type</th>
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<tbody>
<tr>
<td>Project</td>
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<tr>
<td>Quantitative Data</td>
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</tbody>
</table>

Improve the research interests/skills of CSUN students in STEM fields

<table>
<thead>
<tr>
<th>Raw Number</th>
<th>Ratio</th>
<th>%</th>
<th>Raw Number</th>
<th>Ratio</th>
<th>%</th>
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<td>/</td>
<td>/</td>
<td></td>
<td>/</td>
<td>/</td>
<td></td>
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</tbody>
</table>

*Note that the performance measures for this objective have been disaggregated from the original performance measure for reporting purposes only.

Explanation of Progress (Include Qualitative Data and Data Collection Information)

Evaluation Data Sources and Methods for the Objective

Data collection for the first performance measure (10a) of this objective commenced with the Spring 2012 cohort recruitment process in late Fall 2011 and early Spring 2012 terms. During the interview, we asked cohort applicants the number of faculty research-related sessions that they had in the Fall 2011 term. After aggregating the results, we found that no students in the Spring 2012 cohort had participated in a faculty research session prior to entry into the project. Accordingly, the current project target for the first performance measure is one student, an increase of over 50% of the baseline figure. Data collection to measure actual performance on these three performance measures consists of a combination of document data and survey/questionnaire data collection (e.g., cohort journaling), which occurs through student completion of a web-based journal form with items related to project outcomes. Specifically, we included items to assess performance on measure 10a of this objective when we ask students to indicate the number of faculty research sessions that they attended in the past month. Once submitted, data extracts in Excel occur, after which
a tabulation of the aggregate number of research-related sessions with faculty can be performed. In addition to student journaling, student interviews will allow us to collect data on how participation in project activities has improved the research interests/skills of cohort participants. Given that student journaling began in February 2012 and that student interviews will take place during the first project year, we anticipate the reporting of actual performance data for both measures in the Grant Performance Report for the first year of the project period. In addition to the procedures described above, student interviews will be used to assess the second performance measure (10b). We used these two procedures to support a mixed-methods approach with the collection of both quantitative and qualitative data.

Description of Preliminary Findings Related to the Objective
Actual performance data for this first measure indicates that we have made substantial progress on this measure. In fact, just since February five Spring 2012 cohort students have participated in faculty research, which represents 16% of all cohort participants and an increase over the baseline figure (n=0). Actual performance data on this objective demonstrates that we have exceeded the project target for this measure of the objective. Neither baseline nor actual performance data are reported for the second measure (10b).

Description of Project Activities Related to the Objective
During the current term (Spring 2012), faculty mentors have worked to develop research-related activities with cohort participants. Current and/or planned activities that faculty mentors have considered for cohort participants include projects in one of their instructional labs, research projects that they may have been working, and participation in related student professional events and competitions such as SHPE National Design Competition, Formula SAE, National Steel Bridge, WESTEC Manufacturing Challenge, UAV, Autonomous Helicopter, and SS12 Code for a Cause, etc. Finally, within the context of support for Hispanic students in CSUN’s College of Engineering and Computer Science, an example of how the project may support Hispanic students can be seen in how CSUN students (who are not current cohort participants) who participated in and won the most recent SHPE National Design Competition could discuss their experiences with cohort participants.

Plans to Use of Performance Data to Monitor Progress
Given that the second performance measure (10b) relates to quality, the baseline data will be collected as part of the cohort participant interviews through Fall 2012. We plan to report baseline and actual performance measure on this objectives in the next Grant Performance Report. In addition, we plan to monitor progress on both performance measures through use of structured journaling in Moodle and student interviews. Discussions of results from both data collection procedures will support the monitoring or progress of this objective.
### 11. Project Objective

Check if this is a status update for the previous budget period.

Increase and enhance student-faculty interaction in STEM fields at CSUN

<table>
<thead>
<tr>
<th>11.a. Performance Measure*</th>
<th>Measure Type</th>
<th>Quantitative Data**</th>
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<tbody>
<tr>
<td>Increase by 90 percent the frequency of student-faculty interactions over the 2010-11 baseline rate</td>
<td>Project</td>
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<td></td>
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*Note that the performance measures for this objective have been disaggregated from the original performance measure for reporting purposes only.

**Note that in the ratio columns of the target and actual performance data “the numerator represents the numerical target (e.g., the number of students that are expected to attain proficiency) or actual performance data (e.g., the number of students that attained proficiency), and the denominator represents the universe (e.g., all students served)” (Instructions for Grant Performance Report, p. 7).

<table>
<thead>
<tr>
<th>11.b. Performance Measure*</th>
<th>Measure Type</th>
<th>Quantitative Data</th>
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</thead>
<tbody>
<tr>
<td>Improve the quality of interactions between CSUN students and faculty in STEM field</td>
<td>Project</td>
<td>Target</td>
</tr>
<tr>
<td></td>
<td>Raw Number</td>
<td>Ratio</td>
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<tr>
<td></td>
<td>/</td>
<td>/</td>
</tr>
</tbody>
</table>

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Explanation of Progress (Include Qualitative Data and Data Collection Information)

Evaluation Data Sources and Methods for the Objective

Both student structured journals and student interviews are used to assess the two performance measures of this objective. These two data collection procedures represent a mixed-methods approach with the collection of both quantitative and qualitative data. In the student journals, which are structured with a set of close- and open-ended items, we ask respondents to indicate the number of interactions during the month and the types of interactions, including in-class interaction, faculty office hours, email contact, phone contact, Moodle interaction (online), supplemental lab session, faculty research session, individual mentor appointment, group mentor meeting, on-campus project event, off-campus project event, or other event. In addition, we ask cohort participants to describe their interactions with their faculty mentor during the month.
Description of Preliminary Findings Related to the Objective
To support the development of cohort baseline figures for the first performance measure, during the Spring 2012 cohort applicant interview we asked interviewees the number of student-faculty interactions that they had in the Fall 2011. Results from interview responses suggest that students in the current (Spring 2012) cohort logged a total of 443 separate interactions with faculty in Fall 2011 prior to cohort entry in Spring 2012. This figure represents the current baseline data for the first performance measure (11a), which serves to set the current project target of 842 total interactions between students and faculty. By contrast, the second performance measure (11b) relates to the quality of student-faculty interaction, so the current baseline data for this measure will be collected as part of the Spring 2012 cohort participant interviews during the first project year. While we do not yet have actual data for the second performance measure (11b), we can report actual performance data for the first measure (11a). Through February 2012, students reported in their journal entries that they had 107 total interactions with faculty. While this figure (n=107) does not represent an increase over the baseline figure (n=443), it does indicate progress in meeting the project objective to increase student-faculty interaction by 90% during the project period. In fact, the total number of interactions between students and faculty represents 13% of the target (n=842) number of interactions.

Description of Project Activities Related to the Objective
Overall, project activities are intended to facilitate student-faculty interaction. To that end, project faculty met with their cohort participants early in the Spring 2012 term to establish a faculty mentoring relationship and plan project activities. Planned and/or current project activities for this year include small group mentoring sessions with faculty mentors, individual faculty mentoring appointments, student participation in CSUN’s Tech Fest and Senior Design Project, student participation undergraduate research projects, student participation in projects in an instructional lab of the faculty mentor, introduction to an appropriate professional society student chapter in a discipline of the faculty mentor. As upcoming events and activities approach, we plan to include them in the calendar on the project’s website (http://www.ecs.csun.edu/aims2/) on the “Upcoming Events” and “Field Trips” pages.

Plans to Use of Performance Data to Monitor Progress
While data collection for the first performance measure—11a—is well underway, data collection for the second performance measure (11b) will take place during the first project year. Accordingly, student interviews will use interview protocols that include multiple items related to student-faculty interactions intended to examine the nature of and effects from student-faculty interaction in the project. To that end, we included the following questions in the interview protocol:

(1) Describe two recent interactions with a faculty member in engineering or computer science. Walk through the steps of the interaction from beginning to end. Give the details of the interaction.

(2) Describe an interaction with a faculty member that you consider positive. Walk through the steps of the interaction from beginning to end. Give the details of the interaction.

(3) In contrast, describe an interaction with a faculty member that you consider negative. Walk through the steps of the interaction from beginning to end. Give the details of the interaction.

(4) Describe how your interactions with faculty have changed since being in the HSI-STEM program. Give details and illustrate your response.

Given that student journaling began in February 2012 and that student interviews will occur during the first project year, we anticipate the reporting of actual performance data for both measures in the performance report for the first year of the project period. We will use results from data collection in both Moodle and interviews to monitor progress in meeting this objective. Specifically, we plan to use Moodle cohort participant journal results to assess further progress on the first performance measure (11a) and student interviews to evaluate progress on the second performance measure (11b). Our plans to use data collected through these procedures include discussions of the results in project meetings to address areas of improvement.
Enhance the peer environment of CSUN students in STEM fields

12.a. Performance Measure*

<table>
<thead>
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<tr>
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12.b. Performance Measure*

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12.c. Performance Measure*

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<table>
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<th>12.d. Performance Measure*</th>
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</tr>
<tr>
<td></td>
<td>Raw Number</td>
<td>Ratio</td>
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*Note that the performance measures for this objective have been disaggregated from the original performance measure for reporting purposes only.

**Explanation of Progress (Include Qualitative Data and Data Collection Information)**

**Evaluation Data Sources and Methods for the Objective**
Data collection for these four measures of this objective began with the student cohort recruitment process in late Fall 2011 and early Spring 2012 terms. During the interview process, we asked cohort applicants the number of peer-tutoring and peer-mentoring sessions that they had in the previous six months. In addition to data collection for the baseline measures, data collection to measure actual performance on the four measures consists of survey data collection (e.g., cohort journaling) and student interviews. With respect to the former, we included items to assess performance in these measures related to peer-peer interaction. In the journal, we ask cohort participants to indicate the number and types of interactions with peer mentors, peer tutors, and fellow cohort participants. The types of interactions under these three categories include: in-class interaction, Moodle interaction (online), email contact, phone contact, text message contact, social media interaction, faculty research session, supplemental lab session, group mentor/tutor session, on-campus project event, off-campus project event, and other event. Once submitted, data extracts in Excel occur, after which a tabulation of the aggregate number of peer tutoring, peer mentoring, and peer-peer interaction can be performed.

**Description of Preliminary Findings Related to the Objective**
Current cohort baseline data aggregated from results of Spring 2012 cohort applicant interviews (see section immediately above) indicated that the total number of students who participated in peer-tutoring and peer-mentoring in the Fall 2011 term is 26 and 18, respectively. In addition, results from document data collection of college records reveal that prior to the Spring 2012 project cohort no students (outside of a graduate program in assistive technology) participated in a cohort model. These figures represent the baseline measures for two of these four measures, respectively. In light of these baseline measures and given the project target percent increases (30% for all three measures), the current project targets for these three measures are 1 student (12a), 34 students (12b), and 23 students (12c). Actual performance data for the three measures reveals that one measure as been met (12a), with the formation and induction of the first (Spring 2012) cohort of 30 students, which indicates that we have exceeded the project target (i.e., 30% increase over the baseline) for this performance measure. That is, with the 30 current cohort participants, we have exceeded the target of a 30% increase over the baseline (n=0). In addition, data from student structured journals in February 2012 show that we have made some progress on performance measures 12b and 12c, including seven students (or 23% of cohort participants) reporting having participated in peer tutoring sessions and 12 students (40% of all participants in the cohort) reporting having participated in peer mentoring sessions. While actual data on these latter two measures (12b and 12c) do not represent an increase over the baseline figures (n=26 students for 12b and n=18 students for 12c), they do demonstrate progress toward the project targets (n=34 for 12b and n=23 for 12c). Neither baseline nor actual performance data are reported for the fourth and final measure (12d).

**Description of Project Activities Related to the Objective**
Currently, project faculty and staff are working to meet these four project measures of this objective. Specifically, we formed the first cohort of student participants during the late Fall 2012 and early Spring 2012 (January 2012) terms. To support a peer environment and peer-peer interaction, we have developed both a peer-tutoring component and plan to develop a peer-mentoring component to the project and peer interaction through both peer- and faculty-mentors. In particular (as previously described in the narrative for objective 9) in February-March 2012, we advertised, recruited, hired, and trained peer tutors from CSUN’s upper-division undergraduate and graduate students in the College of Engineering and Computer Science. In addition to peer tutoring, we are working on recruiting and training peer mentors for cohort participants. Finally, to facilitate a strong peer environment, faculty mentors have planned and/or facilitated small group sessions with cohort participants. In addition to supporting student-faculty interaction and student development, these sessions are intended to facilitate peer-peer interaction. Finally, project fac-
ulty and staff have planned project activities to encourage peer interactions, including on- and off-campus project events like introduction to an appropriate professional society student chapter in the discipline and related activities – technical talks, presentations, student chapter activities etc. and visits with the cohort students from Glendale Community College and College of the Canyons.

**Plans to Use of Performance Data to Monitor Progress**

In addition to the student journals, student interviews will occur during the first project year. Items on the interview protocol that relate specifically to peer-peer interaction include the following:

1. Describe two recent interactions with a student in engineering or computer science. Walk through the steps of the interaction from beginning to end. Give the details of the interaction.

2. Describe an interaction with a student that you consider positive. Walk through the steps of the interaction from beginning to end. Give the details of the interaction.

3. By contrast, describe an interaction with a student that you consider negative. Walk through the steps of the interaction from beginning to end. Give the details of the interaction.

4. Describe how your interactions with peers have changed since being in the HSI-STEM program. Give details and illustrate your response.

5. Talk about your experiences with peer mentors. Describe some interactions that you’ve had and your feel about them.

With student journaling beginning in February 2012 and student interviews during the first year, we anticipate the reporting of actual performance data for all four measures in the performance report for the first year of the project period. We plan to use results from data collection in both Moodle and interviews to monitor progress on all four performance measures related to this objective. In particular, we will use Moodle cohort participant journal results to assess further progress on the first performance three measures (12a-12c) and student interviews to evaluate progress on the final performance measure (12d). We plan to discuss the results of data collection in project meetings and address areas of improvement.
SECTION B - Budget Information (See Instructions. Use as many pages as necessary.)

Summary of Budget Information

The total requested funding under the solicitation for five years is $5,562,768 including a total of $1,490,915 that is requested by the two supporting community colleges under this proposal. The total budget for Year 1 of the grant is $1,096,856 of which $299,893 is awarded to the two partner community colleges as sub-contractors.

The grant award was announced in October 2011 and as of March 31, 2012 (6 month or halfway point of Year 1) we have an available balance of $506,758 or approximately 46.2% of the Year 1 budget. This available balance is calculated taking into account the actual expenditures to date of $225,046 or 20.52% of the Year 1 budget, and committed encumbrances of $365,053 representing 33.28% of the Year 1 budget. In our original proposal to the US Department of Education we envisioned a start date of July 1, 2011. Given the start date of October 2011, we anticipate having a balance of approximately 20% of our Year 1 budget that we would like to carry forward to subsequent years and to cover some of the additional costs for faculty release time, clerical support, and project web site development. The attached detail trial balance shows the expenses by category for the various elements of the project. The summary below indicates the expenditures by category and changes as appropriate.

Personnel:

Faculty Costs

CSUN’s personnel budget represents the costs for the faculty, staff and students supporting the project. In addition to the one faculty member from the College of Education (Prof. Nathan Durdella) who is responsible for the evaluation and assessment activities, we had proposed that one faculty member designated from each of the five Engineering and Computer Science (ECS) departments would participate in the project. Following the selection of the cohort it was necessary to recruit six faculty members to effectively serve the needs of the students. The six faculty members are Prof. Amine Ghanem (Civil Engineering and Construction Management), Gloria Melara (Computer Science), Bruno Osorno (Electrical and Computer Engineering), Behzad Bavarian (Manufacturing Systems Engineering and Management), and Robert Ryan and Stewart Prince (Mechanical Engineering). Five of the six faculty members received reassigned time equivalent to one 3-unit class for the spring 2012 semester and will receive one month of summer salary for summer 2012 as budgeted in the original proposal. For the fall 2012 semester all six faculty members will receive 3 units of release time per semester. The sixth faculty member (Prof. Robert Ryan from Mechanical Engineering) will receive one month of summer salary for summer 2012 estimated at $7,695 including benefits. The total cost for the additional release time (27 units over the duration of the grant) for Prof. Ryan including benefits is estimated to be approximately $89,000. For Year 1 alone the additional cost of Prof. Ryan’s release time is estimated to be $9,230 (3 units in fall 2012). Assuming a 3% annual increase in costs, the Year 2 costs for Prof. Ryan’s release time would be $19,014. We plan to cover this with the anticipated carry forward from our Year 1 Budget. The five Department Chairs in the College of Engineering and Computer Science will also be provided with 0.5 month of summer salary to help coordinate the activities with the community colleges. The faculty member from the College of Education will receive 3-units of release time in years 1 and 5, and 6-units of release time in years 2 through 4. He will also receive 2 months of summer salary during the grant period.
Staff Costs

We had proposed that a half-time career advisor/counselor would be hired at a salary of $25,000/yr to advise the students in terms of financing their education and the availability of aid packages, future careers, locating suitable internships and employment upon graduation. A position description is being developed and we expect to complete the hiring process to recruit an individual to serve in this capacity effective summer 2012. Furthermore, we had proposed that a support staff in the ECS Student Services Center would be designated to guide this group of transfer students in the cohort through academic and non-academic issues. This support staff person is Ms. Latesha Hagler and is compensated at $10,000/year for her commitment for this project.

In our grant proposal we committed to developing and maintaining a project website to disseminate information about the project goals and outcomes. A separate budget category was created to cover this expense with a budget of $10,800. The web site was developed and implemented by Digital Energy and is currently housed on the home page of the College of Engineering and Computer Science at CSUN at [http://www.ecs.csun.edu/aims2/](http://www.ecs.csun.edu/aims2/)

In addition we have added clerical support to provide administrative assistance for the project. This was not originally budgeted but it became apparent that we would need this support to accomplish the goals of the project. Some of the duties that are being performed by staff in this category are: Filtering information on cohort students for PI's, Contacting students to set up appointments with Chairs and PI's, maintaining the project web site once it is established to ensure that it is up to date. Other duties include Scheduling meetings, E-mail correspondence, arranging teleconferences for the project team, arrangement of parking, photocopying, compilation of materials, scheduling of rooms, and maintenance of records. Presently Ms. Cindy Barrett and Ms. Crystal Waters are providing clerical support. Since our original budget request missed including this category a separate budget category has been created to cover the anticipated expenses under this category. The anticipated annual budget for administrative support including benefits is $20,000. We are covering this with the anticipated carry forward from Year 1 of the grant. Information on Project Staff may be found on the project web site at [http://www.ecs.csun.edu/aims2/project_staff.html](http://www.ecs.csun.edu/aims2/project_staff.html)

To help with budgeting issues in the grant, we had proposed that a grant budget specialist would be hired for 0.65 FTE in the first year, and half-time in years 2 through 5. This has been completed and the grant budget specialist who is supporting this grant is Ms. Mary Jumamil from the University Corporation.

Additionally, we had proposed that two research support staff would devote 40% of their time to support the student design and research projects under this grant proposal. One research engineer Ms. Lisa Reiner is in the materials engineering area and is assisting Prof. Bavarian who is one of the Co-PI’s of the grant. The other will be in the CNC and machining area and is expected to be recruited to join the team during summer 2012.

Student Mentors and Tutors:

A group of 14 current senior CSUN students have been employed for ten hours each week at a rate of $15/hr to help tutor the students in the cohort. These students were selected upon the recommendation of the faculty mentors and department chairs and based on the needs of the students in the cohort. They are available at regularly scheduled hours and by appointment to individually tutor students in the cohort: [http://www.ecs.csun.edu/aims2/peer_tutors.html](http://www.ecs.csun.edu/aims2/peer_tutors.html), and serve as peer mentors [http://www.ecs.csun.edu/aims2/peer_mentors.html](http://www.ecs.csun.edu/aims2/peer_mentors.html)

In addition, we had proposed that 15 Hispanic transfer students would be chosen from the cohort group each year to participate in research, senior design, or other “engagement” activities. These students will receive a monthly salary of $750 for 10 months for the 5 years duration of the grant. Since the cohort was just recruited in January 2012 we anticipate that selection of these students will be completed over the next few months.

**Student Stipend:** In order to motivate the students and partially defray the cost of book and other supplies, each student in the program will be compensated $1200 while at the community college, and $2400 while attending CSUN. We had proposed that the number of students participating in the program will be according to the following table. As of
March 2012 we have completed the recruitment of the cohorts to include 30 students from CSUN, 15 students from Glendale CC, and 18 students from College of the Canyons. The annual stipend is provided to the students in two equal installments and is based on the students’ progress in meeting the guidelines of the grant.

<table>
<thead>
<tr>
<th>College of Canyons</th>
<th>Glendale CC</th>
<th>CSUN</th>
<th>Total</th>
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</thead>
<tbody>
<tr>
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<td>30</td>
<td>60</td>
</tr>
<tr>
<td>30</td>
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<td>-</td>
<td>-</td>
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<td>30</td>
</tr>
</tbody>
</table>

**Supplies:** Supplies requested under this proposal included: 40 computer tablets ($75,596) and the associated software DyKnow ($1500/yr), a specialized cart to store the 40 tablets ($4000), printing ($1500/yr), and laboratory supplies ($25,000/yr). The tablets have been purchased and installed with appropriate software that is commonly used in the undergraduate engineering and computer science programs in the college. Faculty are beginning to use the tablets with students in the cohort and we expect to report on our progress in the annual performance report for Year 1.

**Travel:** Travel reimbursement for two faculty members participating in the annual American Society of Engineering Education (ASEE) conference was requested. At the time of submission of this report, Prof. Robert Ryan from Mechanical Engineering and one of the Co-PI’s is scheduled to attend the ASEE annual meeting in San Antonio in June 2012. Furthermore, travel for two faculty and five students to the Society of Hispanic Professional Engineers (SHPE) in the first three years, and 4 faculty and ten students in years 4 and 5 was requested. These costs are arrived at based on historical data and using approved reimbursement rates at CSUN. Note that CSUN has a long and proud tradition of winning at the SHPE National Design Competition including winning the top two places in 2011 and the first place in 2010 respectively. More information may be found at [http://www.ecs.csun.edu/ecs/newsH-20111028.html](http://www.ecs.csun.edu/ecs/newsH-20111028.html) and [http://www.northridgemagazine.com/focus-on/big-finish/](http://www.northridgemagazine.com/focus-on/big-finish/)

The grant is administered by the University Corporation (TuC) at California State University, Northridge in conjunction with the Office of Research and Sponsored Projects. Specific services provided by these two offices are summarized below:

**Office of Research & Sponsored Projects (ORSP)**

- Post-Award Activities
  - Award notification
  - Budget revisions & no-cost extensions
  - Liaison between university and grantor
  - Compliance animal/human subjects

**The University Corporation (TUC)**

- Post-Award Activities
Project Accounting /Compliance
◦ Approval of project related hiring
◦ Approval & processing of project related expenditures (Purchase Orders, Check Requests, Timesheets, Salary Payment Authorizations, Faculty Release Time Reimbursement, Independent Contractor)
◦ Project accounting / budget monitoring
◦ Ensuring compliance with finance related grant regulations
◦ Maintaining financial records
◦ Invoicing the grantor / Processing of receipts
◦ Preparation and submittal of financial reports to grantor
◦ Distribution of financial reports to Principal Investigators & Managers of Academic Resources
◦ A-133 Single Audit / Special Audits
◦ Subrecipient Monitoring (A-133 Audit Reports)
◦ Effort Reporting
◦ Asset Management
◦ Obtaining necessary insurance coverage

Payroll
◦ Payroll Processing
◦ Vacation/absence time monitoring

Human Resources
◦ Hiring, change of status and termination of project staff (together with OHR)
◦ Benefits (Health, Dental, Retirement, Insurances)

Office of Human Resource Services at CSUN (OHR)
Post-Award Activities
◦ Hiring, change of status and termination of project staff (together with TUC-HR)

SECTION C - Additional Information  (See Instructions.  Use as many pages as necessary.)
### Project Budget Status

#### Project Details:
- **Project ID:** 40034236
- **Grantee:** US DEPT OF EDUCATION
- **Project Director:** Ramesh, Dr. S.K.
- **Project Title:** CSU, Northridge Engineering & Computer Science HSI-STEM Initiative
- **Project Beginning Date:** 10/1/2011
- **Project Ending Date:** 9/30/2012

#### Budget Balance Available (BBA)

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<tr>
<th>Account</th>
<th>Description</th>
<th>Budget</th>
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<th>Actual Expenditure</th>
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**Funds Available to Principal Investigator:**
- Total Funds Available: 506,757.82
- Less Indirect Cost: 0.00
- **Total Funds Available To Principal Investigator:** 506,757.82

**Outstanding Advances:**
- 130110 Advances | 0.00 | 0.00 | 0.00

**Notes:**
- *) Faculty Release Time: Actual expenditures in the account '601620 Faculty Release Time' include a charge of 38% for benefits.
- **) Benefits: All expenditures for benefits are budgeted in account ‘60200 Benefits’, however the actual expenditures are booked in the accounts 602110 Payroll Taxes, 602210 Workers Compensation, 602220 Unemployment, 602310 Insurance, 602320 Retirement, etc…
- As a result, all benefit accounts (602XXX) can be viewed as one budget item, and should be treated as such with regard to budget revisions.
2014 Annual Performance Report

ED 524B Cover Sheet

1. PR/Award #: P031C110082
2. Grantee NCES ID#: 110495
3. Project Title: Central Valley HSI Cooperative STEM Articulation and Transfer Project
4. Grantee Name: CALIFORNIA STATE UNIVERSITY, STANISLAUS
5. Grantee Address: 1 UNIVERSITY CIRCLE TURLOCK, CA 95382
6. Project Director Name: Juanita Cruthird-Billups Title: Director
   Ph #: 209-664-6770 Fax #: 209-664-7144
   Email Address: jcruthird@csustan.edu

Reporting Period Information
7. Reporting Period: From: 10/01/2013 To: 09/30/2014

Budget Expenditures (To be completed by your Business Office.)
8. Budget Expenditures:

<table>
<thead>
<tr>
<th></th>
<th>Federal Grant Funds</th>
<th>Non-Federal Funds (Match/Cost Share)</th>
</tr>
</thead>
<tbody>
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<tr>
<td>b. Current Budget Period</td>
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<tr>
<td>c. Entire Budget Period (For Final Performance Reports only)</td>
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<td></td>
</tr>
</tbody>
</table>

Indirect Cost Information (To be completed by your Business Office.)
9. Indirect Costs
   a. Are you claiming indirect costs under this grant? No
   b. If yes, do you have an Indirect Cost Rate Agreement approved by the Federal Government?
   c. If yes, provide the following information:
      Period Covered by the Indirect Cost Rate Agreement: From: To:
      Approving Federal agency: ED Other (Please specify):
      Type of Rate: (For Final Performance Reports only)
   d. For Restricted Rate Programs (check one) -- Are you using a restricted indirect cost rate that:
      Is included in your approved Indirect Cost Rate Agreement?
      Complies with 34 CFR 76.564(c)(2)?

Human Subjects (Annual Institutional Review Board (IRB) Certification)
10. Is the annual certification of Institutional Review Board (IRB) approval attached? N/A

Performance Measures Status and Certification
11. Performance Measures Status
   a. Are complete data on performance measures for the current budget period included in the Project Status Chart? Yes
   b. If no, when will the data be available and submitted to the Department?

12. Authorized Representative Name: Dr. James T. Strong, Provost and Vice President for Academic Affairs
    Date: 02/02/2015
    Phone: (209) 667-3203
    E-mail: jtstrong@csustan.edu
Executive Summary

The Central Valley HSI Cooperative STEM Articulation and Transfer Project aims to improve enrollment representation and degree completion of Hispanic and low-income transfer and non-transfer students in STEM disciplines (Biology, Chemistry, Computer Science, Mathematics, Geology, and Physics). The two major activities designed to achieve the grant’s objectives are: 1) Activity 1, which involves three institutions and is designed to facilitate the transfer of STEM students from San Joaquin Delta College (SJDC) and Merced College to CSU Stanislaus by improving the articulation and advising process, and 2) Activity 2, which is administered entirely by CSU Stanislaus and provides STEM majors with improved access to resources and practices that promote retention and graduation.

Warriors on the Way (WOW) 2 STEM, or Activity 1, continued efforts to connect with prospective transfer students and implement programming intended to streamline the transition between partnering institutions. The STEM Transfer Roadmaps served as a key tool when advising prospective transfers. The roadmaps provided students with a tangible guide tailored to their academic goals and facilitated consistency in the advising message to prospective transfers interested in CSU Stanislaus. Students walked away from advising sessions knowing what lower division and upper division courses were required of them for transfer and degree completion. Student presentations, workshops, and events intended to promote discipline emersion and faculty-to-student interaction also continued in Year 3. To further streamline the transition process, WOW 2 STEM hosted a new event at CSU Stanislaus designed specifically for incoming, admitted transfers from partner institutions. The event served as an opportunity for STEM students to receive group advising, learn how to navigate the online enrollment system, and meet faculty. Transferring from a community college to a four-year institution can be a culture shock for most students; by offering an intimate orientation, the transfer process becomes a smooth transition. Lastly, Year 3 marked the one year point for the first set of WOW 2 STEM transfers from Merced College and San Joaquin Delta College. Of the WOW 2 STEM transfer students who enrolled at CSU Stanislaus in Fall 2013, 92% continue their pursuit of a STEM degree.

The Central Valley Math and Science Alliance (CVMSA), or Activity 2, continued to foster diverse faculty-guided scientific research and mentoring experiences for underrepresented students. Intentional programming was designed to support completion of academic pursuits and increase representation in STEM disciplines. Of 20 posters presented of the annual College of Science Student Poster Celebration, 85% had one or more CVMSA participants as contributing authors for the research. Also, seven CVMSA student authors received recognition at the CSU Stanislaus Student Research Competition in the Undergraduate Natural Sciences category. Of those, four were named as delegates for the CSU Statewide Student Research Competition. New, innovative programming included two opportunities for students to receive academic credit, while building understanding of and experiences in scientific research. Research Experience in the Sierra Nevada (RESN) enabled 12 STEM students, guided by two faculty and three graduate students, to participate in a transformative interdisciplinary research experience. Student participants developed research questions/hypotheses, performed laboratory procedures, analyzed data, and presented research findings. Introduction to Science and Scientific Research focused on the culture and methods of scientific research. Students learned about experimental design, library resources, record keeping, report writing, and presenting scientific literature. The course is interdisciplinary, designed to equally benefit upper and lower division students, and culminates with the development of a professional poster presentation.

Year 2 served as the first full year services were available to Hispanic and low-income transfer and non-transfer students. Year 3 provided the opportunity to assess programming for successes and improvements. Largely, this process is contingent on concrete understanding of existing programming and effective mechanisms for tracking student participants. Through Year 2 and into Year 3, much of this information was tracked by various individuals in electronic and paper format, which made compiling data for reporting to various stakeholders challenging and time consuming. In Year 3, multiple measures were implemented to streamline the process and minimize the potential for information inaccuracy. Flags were set up in the CSU Stanislaus student information system to flag WOW 2 STEM and CVMSA participants. The flags allow accurate accounting of students benefiting from grant programming, which is vital to understanding the impact of services on academic success and will allow for added comparison of this sub-group against the broader STEM population. A CVMSA student database was also implemented. The database allows centralized tracking of CSU Stanislaus student programming activities by student.
Section A: Performance Objectives

Project Objective: Develop a transfer and articulation model between CSU Stanislaus and its partnering regional community colleges to increase successful enrollment, persistence, retention, and graduation of Hispanic and transfer students in STEM.

Check if this is a status update for the previous budget period.

<table>
<thead>
<tr>
<th>Performance Measure</th>
<th>Measure Type</th>
<th>Quantitative Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.a. Increase the enrollment percentage of Hispanic and low-income transfer students from the cooperative partners to CSU Stanislaus in five (Biology; Chemistry; Computer Science; Mathematics; and Physics, Physical Sciences, and Geology) STEM disciplines by an average of 20% over the grant period and sustain these enrollment levels beyond the funding term.</td>
<td>Project</td>
<td>Raw Number</td>
</tr>
</tbody>
</table>

Explanation of Progress (Include qualitative data and data collection information)

Performance Measures 1.a. and 1.b. emphasize enrollment and degree completion over the life of the grant, with sustainability beyond the grant funding period. For this reason, quantitative data for the performance measures is not yet available. Measureable outcomes for identified milestones and activities indicated in the Approved Application (p. 53-57) continued to serve as the indicators of progress made during Year 3. Milestone outcomes designated Year 2 for establishment of baseline data and Year 3 as the first year in which enrollment increases should be assessed. Comparison of baseline data with enrollment patterns indicates that since the establishment of the grant, there has been an average increase of 35% in STEM enrollment by students transferring from Merced College and San Joaquin Delta College. While it is still early to assess graduation outcomes, the average retention rate for all Hispanic and low income WOW 2 STEM transfers is 82%. The average CSU Stanislaus institutional GPA for these students is 3.0.

Because the first set of roadmaps were in place by Year 2, Year 3 focused on continued conversations across all partnering institutions to ensure the roadmaps facilitate the streamlined transfer process intended by the grant. Curriculum changes at the community college level became the primary topic of discussion. The curriculum changes were connected to course numbering and the expansion of course offerings at partner campuses. As a result the evaluation and refinement of the first set of roadmaps occurred soon after the initial roadmaps were implemented. The roadmaps are reviewed every semester to ensure responsiveness to curriculum changes and accuracy of STEM advising.

As planned, advising activities continued to support prospective transfers’ needs. In Year 2, substantial efforts were made to establish a pre-matriculation advising process at partnering campuses to ensure students follow the appropriate path towards transfer. In Year 3, this process was refined to include all aspects of advising. Every semester WOW 2 STEM participants receive personalized, regular, and timely guidance. The STEM Transfer Advising Team consists of Community College Counselors, the CSU Stanislaus Transfer Advisor, and STEM faculty. Collectively, this team provides a holistic advising experience for students by incorporating expertise at the two-year and four-year level.

In Year 3, the Data and Evaluation Team resumed regular meetings throughout the year. Initial discussions centered on terminology to insure consistency in definitions relevant to evaluation efforts. From there, discussions moved to assessing trends related to retention, persistence, and graduation for Hispanic and low-income STEM transfer students. Beyond the immediate performance measures, the Data and Evaluation Team focused on understanding where students are dropping/stopping out and academic patterns of successful/unsuccessful students. By better understanding student success trends, opportunities for programming improvements surface and the communication across institutions becomes solution oriented.

For example, discussion by the Data and Evaluation Team on retention and graduation of transfers filtered into looking more closely at prerequisite completion prior to transfer. Effective Fall 2016, the Biology department will require students interested in Biology to complete specific prerequisite courses prior to being able to declare the major. Those students not meeting the requirement will be considered Undeclared with a Biology interest. Because data efforts were already moving in this direction, collaborations across institutions fostered added communication and teamwork that will facilitate responsive programming for prospective transfers. The preliminary, historical data shows a significant number of prospective transfers would be affected by this change. However, the data also indicated that prerequisite completion has increased since the start of WOW 2 STEM (Activity 1) programming at partnering community colleges.

Significant progress was also made in the development of the prospect database and degree audit system. In Year 2 the challenge of the degree audit component was related to the matriculation of prospective students. The challenge of running the degree audit without matriculating prospective transfers has been resolved and the degree audit component functions properly. The next phase of the prospect database and degree audit system will focus on the method of implementation with partner campuses.
**Project Objective:** Provide support services to strengthen and expand high-impact practices to increase engagement, retention, and graduation of Hispanic and low-income students in STEM.

Check if this is a status update for the previous budget period.

<table>
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<tr>
<th>Performance Measure</th>
<th>Measure Type</th>
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<tr>
<td>2.a. Increase CSU Stanislaus STEM degree completion by all Hispanic and low-income students by 15% over the grant period and sustain degree completion beyond the funding term.</td>
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**Explanation of Progress (Include qualitative data and data collection information)**

Performance Measure 2.a. assesses degree completion over the life of the grant, with sustainability beyond the grant funding period. Due to the emphasis of the performance measure and nature of graduation data, qualitative data is not yet available. Measureable outcomes for identified milestones and activities indicated in the Approved Application (p. 53-57) continued to serve as the indicator of progress made during Year 3. Milestone outcomes designated Year 3 as the first year in which graduation rates would be assessed. Since the start of the grant, the STEM degrees conferred rate is 73%. During this same time frame, there has been a 20% increase in STEM degrees conferred by all Hispanic and low-income, undergraduate students.

In Year 3, faculty-guided research experiences and opportunities along with academic support for undergraduates remained a hallmark of grant programming. Programming experienced a significant increase from the prior year. Mentee and research associate opportunities increased 75% and 62% of all CVMSA (Activity 2) participants were paired with grant faculty in one of these roles. The remaining CVMSA participants benefited from regular interactions with faculty through bi-weekly student-faculty meetings. The average student-to-faculty ratio at these meetings was 5:1 with an average of 41 students per gathering. Conference attendance by student participants more than doubled, representing a 138% increase in conference travel. The Commons (Math and Resource Center) continued as a central hub for students seeking peer support regarding their academics.

With the Data and Evaluation Team holding regular meetings in Year 3, a fundamental change in how CVMSA participant activity is tracked took place. Discussions on program effectiveness, in relation to student success, resulted in the creation of a STEM Student Database. The application allows for electronic storage of information about each CVMSA student and combines it with data from the CSU Stanislaus student information system. The Activities module allows all activities a student participates in to be tracked, including meetings, conferences, workshops, and fieldwork. The Attributes module allows for assignment of attributes specific to each student, such as a Faculty Mentor that they are assigned to as a mentee or research associate. The Class information module displays all classes the student has completed, including Class Name, Catalog Number, Term, Drop Dates, Units, Repeats, and Instructors. The Term Module displays Major, Minors, Terms, Academic Level, Cohort, Age, Ethnicity, Gender, Graduation Term, High School Attended, and GPA information. Combined, these various sub-systems provide a clear snapshot of the performance and background of each student. In addition to database development, participant information for the current and prior years was entered.

A flag in the CSU Stanislaus student information system was also implemented. Any time a student is accepted into CVMSA, a flag is added to his or her student record. Students’ program status (active/inactive) is monitored and updated each semester. The flag facilitates accurate accounting of participant counts. The flags are also being used to capture this sub-group of STEM students in the Dashboard. In Year 3, the Dashboard continued to receive updates. Factors related to student retention and graduation are in progress. As anticipated, the first phase Roadmap/Degree Audit Advising application was completed. The Roadmap module allows the creation of degree roadmaps that outline the courses required for each major and the semesters those courses should be completed. Once in production, the roadmaps will be available online through a public website. The roadmaps include Major and General Education requirements along with suggestions on course sequencing across 8 semesters (4-year time to degree). The Roadmaps are taking place on an institutional level and are currently undergoing data entry of course sequencing by campus departments. Development of the second phase, which will overlay the Roadmaps with actual student data from the Degree Audit module of the campus student information system, is underway. This system will aid faculty in advising students and working through issues, concerns, and obstacles to determine the best path to graduation.
Section B: Budget Information

The Year 2 annual report included $92,368.56 in allowable grant obligations from Merced College that had been received and were processing. The processing of these invoices was completed in Year 3; however, they are being excluded from section 8b of the report coversheet because they were reported in Year 2. At the end of Year 2, the Activity 1 CSU Stanislaus Year 1 carryover account indicated a budget balance available of $641.76 because of a state funded bonus for a support staff member. The bonus inadvertantly posted to the grant. The original expenditure for the bonus was included in the Year 2 funding report. The accounting adjustment to move the Payroll/Benefits and correct the project code did not post until later and is therefore included in Year 3 expenditures. The original expenditure of $641.76 and the expenditure adjustment of $641.76 cancel each other out (no charge to the grant).

Although the grant experienced much more consistency with key personnel in Year 3, some turnover did occur and impacted the ability to expend funds at the anticipated rate. The Administrative Analyst transitioned to a new position in March 2014 with the replacement coming on board June 2014. The pay and benefits rate for the new Administrative Analyst came in under the costs previously associated with the position. The time the position was vacant generated salary savings. However, the bigger impact was that there was an unanticipated slowdown in programming implementation. The Administrative Analyst is critical to the myriad of paperwork processing that accompanies program implementation. The timing of the vacancy, the transition time between personnel, and the training time needed to bring the replacement up to speed reduced the programming that could take place during the spring as well as programming planned for summer that did not take place. Also, there was turnover in the CSU Stanislaus Financial Services Grant Accountant position, which had an impact. While this position is not funded by the grant, the budgetary support provided is important to smooth operations. The timing of this vacancy coincided with the change in the Administrative Analyst and affected response time on budget contingent matters. The training time for the new Administrative Analyst was also affected. Additionally, some of the pay/benefits increases anticipated to affect the end of Year 3 did not post until Year 4 and others have not yet processed. Pending increases will be retroactive to July 2014 (anticipated to post to the financials by March 2015). This includes salary/benefits increases for all CSU Stanislaus personnel.

Similarly, San Joaquin Delta College had multiple changes in their Grant Account position, which supports the invoicing process. The lead contact for the grant also transitioned to an alternate position with their campus. Because of these changes, invoicing for July 2014 to September 2014 was delayed and did not post until Year 4 and will be reported in Year 4. Lastly, the Merced College campus experienced turnover in their Clerical Support position, which is funded by the grant and generated salary savings. They also experienced turnover in their Grant Accountant, resulting in delays in invoicing for July 2014 to September 2014 expenditures. These posted in Year 4 and will be reported in Year 4. All of the previously mentioned personnel changes had overlapping transitions and generated slowdown in programming implementation. Finally, despite efforts in Year 3 to reassess partner campus budget and better align them with anticipated needs, invoicing from partner institutions came in under budget. Primarily, this was due to salary and benefits costs for the people in the positions coming in under projected costs.

After considering all expenditures posted as of the end of Year 3 (September 30, 2014), the Year 3 carryover is $373,188.98. The difference between the actual carryover and the projected carryover at the time of the Year 4 budget revision was $98,525.98. The majority of this difference is due to expenditures posting later than expected to the financial system. This includes $61,978.64 in CSU Stanislaus Activity 1 and 2 expenditures related to support staff salary and benefits, student assistant salaries and benefits, research supplies, and student/faculty travel that were anticipated but did not post by September. Some of these expenditures have already posted in Year 4. Others expenditures are pending but will post and be reported in Year 4. Six $4,498.31 of travel expenses for the Evaluator was anticipated but did not post until after September 2014. The Merced College (MC) expenditures came in under budget by $18,440.83 and San Joaquin Delta College (SJDC) was under by $11,636.60. Plans for the unanticipated carryover by Merced College and San Joaquin Delta College are as follows:

*MC Intrusive STEM Counselor to help with identification and advisement of prospective transfers at risk of not completing prerequisite courses prior to transfer (maximum $13,000 for overload pay and benefits).
*Professional development conference travel for MC faculty and key personnel (maximum $5,440.83).
*Supplies and programming expenses for SJDC student/faculty engagement events and workshops (maximum $2,500).
*Additional SJDC faculty overload pay and benefits for mentoring activities related to collaborative student research opportunities (maximum $2,500).
*New computer for SJDC Resource Specialist (maximum $1,500) – requires approval, request will be submitted
*Professional development conference travel for SJDC faculty and key personnel (maximum $5,136.60).

Lastly, based on expenditures originally anticipated to post Year 3 and activities from the approved revised Year 4 budget, an additional $149,092.62 of expenditures has posted to Year 3 as of December 2014. Remaining activities approved with the revised Year 4 budget will proceed as planned. A line item accounting of expenditures by grant activity and a copy of the approved Year 4 budget revision are being uploaded with the annual report for reference.

Section C: Additional Information

Our current partners are Merced College and San Joaquin Delta College for Activity 1. CSU Stanislaus does not anticipate any changes occurring during the life of the grant in this regard.
### Activity 1: CSU Stanislaus

<table>
<thead>
<tr>
<th>Budget Category</th>
<th>Year 2 Carryover Expenditures</th>
<th>Year 3 Expenditures</th>
<th>Total Expenditures</th>
</tr>
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<tr>
<td>Project Director Salary</td>
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### Activity 1: San Joaquin Delta College

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### Activity 2: CSU Stanislaus

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<th>Year 3 Expenditures</th>
<th>Total Expenditures</th>
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<td>Project Director Salary</td>
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## Central Valley HSI Cooperative STEM Articulation and Transfer Project (PR/Award Number P031C110082-14)

### Year 4 Budget Revision (October 1, 2014 – September 30, 2015)

### Activity 1: CSU Stanislaus

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<thead>
<tr>
<th>Budget Category</th>
<th>Year 4 Awarded</th>
<th>Year 4 with Reduction</th>
<th>Carryover Use in Year 4</th>
<th>Year 4 Revised Funds Proposed</th>
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<tr>
<td><strong>TOTAL DIRECT CHARGES</strong></td>
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<td><strong>$261,006</strong></td>
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<td><strong>$362,528</strong></td>
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### Activity 2: CSU Stanislaus

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<tr>
<th>Budget Category</th>
<th>Year 4 Awarded</th>
<th>Year 4 with Reduction</th>
<th>Carryover Use in Year 4</th>
<th>Year 4 Revised Funds Proposed</th>
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</thead>
<tbody>
<tr>
<td><strong>SUB-TOTAL</strong></td>
<td><strong>$181,366</strong></td>
<td><strong>$263,024</strong></td>
<td><strong>$89,907</strong></td>
<td><strong>$352,932</strong></td>
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ACTIVITY 1: CSU STANISLAUS

The following is an explanation for Activity 1: CSU Stanislaus, of how carryover funds will be spent and proposed revisions in Year 4, only for line items that need to be changed.

**Personnel** – Total revised funds proposed is $217,159

All personnel salary line items have been adjusted to reflect projected salary expenses based on current pay rates for the positions. A 3% COLA is expected in Year 4 and has been factored into all salaries except hourly student positions.

- $29,157 in Year 3 Carryover funds is planned to fill the gap between projected salary expenses and Year 4 funding allocation for the Activity 1 Coordinator/Transfer Advisor, Research Technician, and Administrative Support positions.
- The Analyst/Programmer and Communications Specialist positions will be fully funded by Year 3 Carryover. Salary cost of $35,229. The Programmer was listed in the awarded proposal for Year 1 to Year 3 only. This position continues to play an integral role in our data reporting and evaluation efforts. The position is funded at 25% time and effort by the grant. The Communication Specialist position was approved in Year 3 based on carryover and is essential to the grant’s institutionalization efforts, which require effective communication of grant successes across campus. This position is part-time.
- The Peer Mentors salary line has been reduced to reflect 2 Peer Transfer Mentors at 10 hours per week to reflect programmatic needs during the academic year, plus 2 Peer Mentors at 21 hour each during the summer for programming needs during new student orientations.

**Benefits** – Total revised funds proposed is $99,923

The benefits line item has been adjusted to accurately reflect contractually required personnel benefits.

- $16,150 in Year 3 Carryover funds is planned to fill the gap between projected benefits and the Year 4 funding allocation for the Activity 1 Coordinator/Transfer Advisor, Research Technician, and Administrative Support positions.
- The Analyst/Programmer and Communications Specialist benefits will be fully funded by Year 3 Carryover. Benefits cost of $11,404.

**Travel** – Total revised funds proposed is $12,800

The line item for travel was adjusted to reflect travel needs of the F.A.S.T. Faculty, Activity 1 Coordinator/Transfer Advisor, and Peer Transfer Mentors travel to partner institutions, plus additional conference travel funding for key personnel.

- The Activity 1 Coordinator/Transfer Advisor regularly travel to both partner institutions for transfer advising, meetings with F.A.S.T. faculty, and student presentations. The Peer Transfer Mentors also travel periodically to our partner institutions. The awarded proposal did not include funding for these activities; however, they are essential to grant programming.
- We plan to add funding for the Research Technician to attend the 2014 California Association for Institutional Research conference and the Transfer Advisor to attend the National Academic Advising Association (NACADA) conference. A proposal to present at the NACADA conference on our best practices and outcomes is being drafted and we would like to send two key personnel to present with the
Activity 1 Coordinator at the conference. We believe a team presentation would better illustrate programmatic diversity and collaborations needed to support student success.

- Travel for the Director and one key personnel to the Project Director’s Meeting in Washington, D.C. (or alternative conference if no Director’s meeting is scheduled) will continue to be funded out of this activity, as well.

Supplies – Total revised funds proposed is $8,525
The line item for supplies was increased to include two office supplies requests as well as funding for professional development activities for grant faculty that would be hosted at CSU Stanislaus.

- We would like to purchase a digital camera that could be used to document, photograph, and highlight grant programming and participant achievements. Currently, grant personnel use personal cameras and smartphones to photograph programming and events. If approved, this purchase would prevent possible damage to personal property being used in the work environment and facilitate consistency regarding image quality used for publications. Canon PowerShot, cost estimated at $145.

- With few exceptions, grant related paperwork and records are stored electronically on a secure, networked department drive. This method of data storage complies with campus requirements/recommendations for minimizing the risk of unwanted individuals gaining access to confidential information and data. We would like to purchase a scanner that would be setup at the workstation used by our Peer Transfer Mentors. This would enable student employees or other personnel to handle scanning of documents, thereby minimizing the need to impose on the Administrative Supports’ workstation and time. Currently, the Administrative Supports’ printer is the means of scanning documents. Brother - ImageCenter™ Desktop Scanner, cost estimated at $380

- We would also like to allocate $6,000 to facilitate advising and mentoring related workshops and events for faculty and counselors/advisors from all partnering institutions, which would be hosted at CSU Stanislaus.

Contractual – Total revised funds proposed is $24,121
The Year 4 allocation for contractual services was reduced by 5% but allows the use of contractual services Year 3 carryover to partially offset the reduction. The difference between the reduced Year 4 budget and the awarded budget in the grant proposal represents a 5% budget reduction in Year 4 to the grant. This serves as the reason for reducing the Evaluator budget by 5% in Year 4.
ACTIVITY 1: MERCED COLLEGE

The following is an explanation for Activity 1: Merced College, of how carryover funds will be spent and proposed revisions in Year 4, only for line items that need to be changed. All line item adjustments are based on budget projections submitted by Merced College (MC).

**Personnel** – Total revised funds proposed is $155,736
All personnel salary line items have been adjusted to reflect projected salary expenses based on current pay rates for the positions.
- $20,646 in Year 3 Carryover is allocated for Student Assistant salaries to provide Supplemental Instruction. This proposal has already received approval.
- We also plan to continue salary funding equivalent to 10% release time for the Dean of Science, Math, Engineering, and Computer Science at Merced College (MC). This person serves as the MC Project Lead responsible for carrying out the provisions of the grant. The addition of this line item was approved by the grant’s prior Program Officer beginning in Year 2.

**Benefits** – Total revised funds proposed is $28,635
The benefits line items have been adjusted to accurately reflect contractually required personnel benefits.

**Travel** – Total revised funds proposed is $1,925
We would like to add $800 for guest speaker travel expenses (mileage and lodging where appropriate). Merced College will be inviting local and regional STEM professionals/disciple experts to present workshops to STEM students. The guest speakers will be donating their time, but we would like to offset the travel expenses they would otherwise incur.

**Supplies** – Total revised funds proposed is $8,046
We would like to add $1,200 for supplies and programming expenses connected with hosting on-campus workshops and events for STEM students by local and regional STEM professionals/disciple experts.
ACTIVITY 1: SAN JOAQUIN DELTA COLLEGE

The following is an explanation for Activity 1: San Joaquin Delta College, of how carryover funds will be spent and proposed revisions in Year 4, only for line items that need to be changed. All line item adjustments are based on budget projections submitted by San Joaquin Delta (SJD).

**Personnel** – Total revised funds proposed is $119,872
All personnel salary have been adjusted to reflect projected salary expenses based on current pay rates for the positions.
- We plan to continue using overload pay for F.A.S.T. faculty salaries and savings will continue to fund a portion of time for an existing Counselor at SJD to fill the STEM advising gap the Resource Specialist is not able to contractually fulfill.
- $18,780 in Year 3 Carryover funds is planned to fill the gap between projected salary expenses and Year 4 funding allocation for the Resource Specialist position.

**Benefits** – Total revised funds proposed is $30,381
The benefits have been adjusted to accurately reflect contractually required personnel benefits.
- $6,414 in Year 3 Carryover funds is planned to fill the gap between projected benefits and the Year 4 funding allocation for the Resource Specialist.

**Supplies** – Total revised funds proposed is $1,500
The line has been reduced based on projected needs submitted by SJD.
ACTIVITY 2: CSU STANISLAUS

The following is an explanation for Activity 2: CSU Stanislaus, of how carryover funds will be spent and proposed revisions in Year 4, only for line items that need to be changed.

Personnel – Total revised funds proposed is $352,932
All personnel salary line items have been adjusted to reflect projected salary expenses based on current pay rates for the positions. A 3% COLA is expected in Year 4 and has been factored into all salaries except hourly student positions.

- $29,907 in Year 3 Carryover funds is planned to fill the gap between projected salary expenses and Year 4 funding allocation for the Instructional Support Technician, Research Technician, and Administrative Support positions.
- We would like to use $60,000 in Year 3 Carryover funds to support salary funding for summer research experiences. $24,000 to pay student Research Associates (20 students x $12 per hour x 20 hours/week x 5 weeks) and $36,000 (10 faculty x $450 per day x 8 days). Additionally, the Instructional Support Technician would be available during summer to help supervise student research.
- The funding allocation for Peer Mentors was increased to provided 2 Peer Mentors at all times that The Commons (Math and Science Resource Center) is open (9 am-5 pm on Mon. – Thurs. and 9 am – 4 pm on Fri., total of 39 hours per week). Ensuring consistent support to students seeking help with their academics is extremely important to retention and graduation outcomes for students in our target population.

Benefits – Total revised funds proposed is $128,639
The benefits line items have been adjusted to accurately reflect contractually required personnel benefits.

- $16,566 in Year 3 Carryover funds is planned to fill the gap between projected benefits and the Year 4 funding allocation for the Activity 1 Coordinator/Transfer Advisor, Research Technician, and Administrative Support positions.
- An additional, $2,670 in Year 3 Carryover funds is needed to fund benefits corresponding to the student and faculty salaries for summer research experiences.

Travel – Total revised funds proposed is $66,700
The line item for travel was increased to included added professional development opportunities for students, faculty, and staff.

- We would like to add $10,000 in travel funding for professional development activities for faculty related to advising and mentoring. The awarded grant proposal included funding for Faculty Mentors to travel with students to scientific conferences. No funding was allocated to advising and mentoring development activities for the faculty who serve our students. To drive institutional change and continue to engage, advise, and support our target population’s unique needs it is critical that faculty have opportunities to participate in professional development activities related to student success and advising.
- We would like to allocate an added $12,000 in Year 3 carryover for student travel to scientific conferences. $8,000 of this would be available to grant participants who are presenting at conferences but traveling with non-grant faculty (only student travel costs would be...
covered with grant funds) and $4,000 of this would be available to grant participants presenting at an in-state conference, but not traveling with faculty. Some of our student participants, engage in research opportunities with faculty that are not Faculty Mentors for the grant. Presenting at a professional conference is a culminating event that rewards a student’s research effort. Some of our students do not get this experience because they cannot afford the travel cost. The $43,200 already allocated to travel will continue to be available to Faculty Mentors traveling with students.

- We would also like to use $1,500 in Year 3 Carryover funding for the Instructional Support Technician to attend a conference for professional development purposes. The Instructional Support Technician spends most of his time in the Faculty Mentors’ labs with students and provides research support across multiple disciplines. He has to maintain diverse discipline knowledge and be able to connect with our target population. Professional development opportunities are an important to maintaining knowledge critical to his role with the grant.

Supplies – Total revised funds proposed is $29,788
We would like to request that the remainder of Year 3 Carryover and Year 4 funds be applied to this line to facilitate additional student programming and research.

- We would like to allocate an added $7,500 in supplies for student research. $5,500 for summer research supplies and $2,000 to support printing of students posters for presentation at campus events or scientific conferences. Poster printing cost about $40 each. Because we serve a low-income demographic, we feel that covering poster printing cost would facilitate added participation in on-campus research competitions and events as it would eliminate the only expense the students have related to these events.

- The remaining funds would go to supplies and programming expenses connected with hosting on-campus workshops and student events designed to increase student/faculty engagement, understanding of STEM career and research opportunities, and foster awareness of campus resources. Currently we have 12 student/faculty engagement meetings (topics vary – e.g. campus resources, career options, study skills, summer REUs), 1 student mini conference (event is a collaboration with other campus programs that target underrepresented populations), and a series of 15 workshops (cross disciple workshop series focused of scientific research) scheduled.

Contractual – Total revised funds proposed is $24,121
The Year 4 allocation for contractual services was reduced by 5% but allows the use of contractual services Year 3 carryover to partially offset the reduction. The difference between the reduced Year 4 budget and the awarded budget in the grant proposal represents a 5% budget reduction in Year 4 to the grant. This serves as the reason for reducing the Evaluator budget by 5% in Year 4.