

United States Department of Education HSI-STEM Grantees

Moderated by:
Dr. Frank A. Gomez
Executive Director, STEM-NET
Office of the Chancellor



<https://www2.calstate.edu/impact-of-the-csu/research/stem-net>

Speakers

Mark Filowitz & Megan Drangstveit, Cal State Fullerton
Project RAISE: Regional Alliance in STEM Education

Eric Marinez, Cal State Long Beach
CSULB Sí Puedo (Strengthening the Impact by Providing Undergraduate Educational
Development Opportunities)

S.K. Ramesh, CSUN
AIMS2: Enhancing Student Success with a Multi-Institutional Collaborative Program

Sastry Pantula, Cal State San Bernardino
Advising for Undergraduate Success (A4US)

Iqbal Atwal & Harold Stanislaw, Stanislaus State
STEM Success at Stanislaus State



CALIFORNIA STATE UNIVERSITY
FULLERTON



Project RAISE: Regional Alliance in STEM Education

Dr. Mark Filowitz

Associate Vice President for Academic Programs & Enrollment

Dr. Megan Drangstveit

Project Director

California State University, Fullerton

Dr. Mark Filowitz, PI & Dr. Megan Drangstveit, PD

California State University, Fullerton

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Project Overview

- CSUF has a strong history of utilizing grants to focus on STEM transfer student success
- Project RAISE integrates a variety of services and project components to increase the number of Hispanic and low-income STEM transfer students and increase persistence, retention, and graduation rates among participants
- Project RAISE Partners:
 - Community Colleges: Citrus, Cypress, Fullerton, Golden West, Mt. San Antonio, Orange Coast, Santa Ana, Santiago Canyon
 - CSUF Colleges: Natural Sciences & Mathematics, Engineering & Computer Science
 - CSUF: Career Center, college academic advisors, IT
 - External Evaluator: Arroyo Research Services

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Activities & Results

Peer Advisors

- 1:1 mentoring for research and transfer programs, lead workshops and activities at CCs and CSUF; ideally products of the program / STEM transfer students
- **Result:** built connections with students, provided support and referrals to campus resources, increased self-efficacy and skills with leadership, communication, confidence; lead trainings

Community college outreach activities

- Workshops focused on careers in STEM, undergraduate research, transfer success; transfer fairs
- **Result:** connected with community college students and counselors; students expanded understanding of transfer and career options; showcased CSUF as transfer institution; recruited students for research and transfer programs; added CC visits to CSUF with lab tours

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Activities & Results

Undergraduate Research Experience

- 8 weeks at CSUF for 32 CC students each summer, individual project, research poster, summer symposium, assigned Peer Advisor, \$5,000 participant stipend, \$1,500 faculty research supplies
- **Result:** offered in person in 2017 (32), 2018 (41), 2019 (48); virtual/hybrid in 2021 (32); students have increased confidence in STEM pursuits, commitment to STEM careers, transfer to 4 yr.; CSUF has adopted URE model for campus-wide student research program pilot
 - Far exceeded goal of attracting HLI participants (+186% over baseline by Year 3)
 - 100% of participants reported plans to transfer to a four-year institution
 - 85% reported being “very likely” to seek other STEM research or internship opportunities
 - Substantial gains in: ability to make academic presentations (44% to 77%); knowledge of transfer process (54% to 71%); ability to find resources on scientific/technical topics (67% to 83%); knowledge of how to achieve STEM education and career goals (69% to 83%)

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Activities & Results

RAISE Transfer Program

- Transition program for STEM transfers at CSUF – academic, social, and skills workshops, Transfer Resource Center, assigned Peer Advisor, priority registration
- **Result:** students completed required activities aligned with student persistence and success, higher rates of students in good standing vs non participants, participants credit program for persistence and success; adapted formats to include asynchronous and virtual content
 - Despite COVID-related campus closures, in Year 4:
 - 53% of HLI students were on track to complete a STEM degree within 3 years of transfer, a 29% increase from baseline
 - 93% of HLI STEM students in RTP were in good academic standing, exceeding 75% target
 - 87% of HLI STEM students in Year 4 cohort from partner colleges remained in STEM in 2nd year, a 9% increase from baseline

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Activities & Results

Summer Internship Program

- Assist students in preparing for and pursuing paid summer internships, workshops and 1:1 support, 1-day bootcamp in August
- **Result:** students engaged with employers via activities and added site tours, completed paid internships, utilized campus career resources and feel more confident and prepared for searches

Transferology

- Free nationwide website that allows students to explore college transfer options
- **Result:** difficult to track user data, reluctance to change from assist.org especially after update

STEM Articulation Conference

- Annual meeting to discuss admissions & curriculum updates, college-specific course guidance, articulation agreements, networking
- **Result:** held each fall with presenters from CSUF and guests from CCs; limited audience

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Lessons Learned

- Create partnerships beyond articulation agreements
- Undergraduate research programs are highly impactful, our program is especially supportive
- Transition programs – include mix of academic, wellness, and social opportunities; hybrid offerings
- Mentoring – students appreciate a point of contact to make CSUF feel smaller
- Student staff **are** the program – helpful to be able to recruit from participants
- Use feedback, constantly refine – assess everything, meet regularly with evaluation team
- Transferology = easy to use, ≠ easy to adapt by CC counselors or students
- We were well-positioned to continue many activities, even through the pandemic

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Next Steps/Long-Term Plans

- Incorporate pandemic practices: recorded content, planned virtual and in-person activities for greater participant flexibility
- Partner with CSUF research programs and colleges to co-promote opportunities, engage students
- Applied for no cost extension, complete activities due to pandemic
- Applied for 2021 competition
 - Remove Transferology
 - Build on articulation conference with year-round articulation assessment and implementation efforts with partner CCs
 - Add formalized post-transfer research pursuit support
 - Continue undergraduate research, transfer & internship support programs, community college outreach
 - Expand from 8 to 9 community colleges, covering ~64% of incoming transfer students at CSUF

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Summary

- Our program is excelling in the following areas:
 - Providing information about STEM careers, transfer, and research to community college and CSUF students
 - Supporting STEM transfer students prior to and after transfer, and through research and internship experiences
 - Considered valuable by participants, and as a primary source of support/motivator for student success
 - Fostering connections between partner community colleges
 - Utilizing assessment to refine activities to best support students and grant objectives
- We hope to secure the next grant and institutionalize more pieces of Project RAISE that have long-term feasibility and high success rates

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LONG BEACH
STATE UNIVERSITY



HSI-STEM SI PUEDO (Strengthening the Impact by Providing Undergraduate Educational Development Opportunities)

Dr. Eric Marinez– California State University

Collaborators:

Dr. Tracy Maples, COE Associate Dean

Dr. Krzysztof Slowinski, CNSM Associate Dean



HSI-STEM
SCIENCE • TECHNOLOGY
ENGINEERING • MATH

Dr. Eric Marinez, Associate Professor

CSULB, Department of Chemistry

Eric.Marinez@csulb.edu

Project Overview

- AIM: To close the achievement gap in STEM baccalaureate degree attainment for Hispanic and other low-income students.

- GOALS:
 1. Improve student academic success;
 2. Improve timely degree completion and retention;
 3. Increase degree attainment; and
 4. Develop model transfer programming.

Project Overview

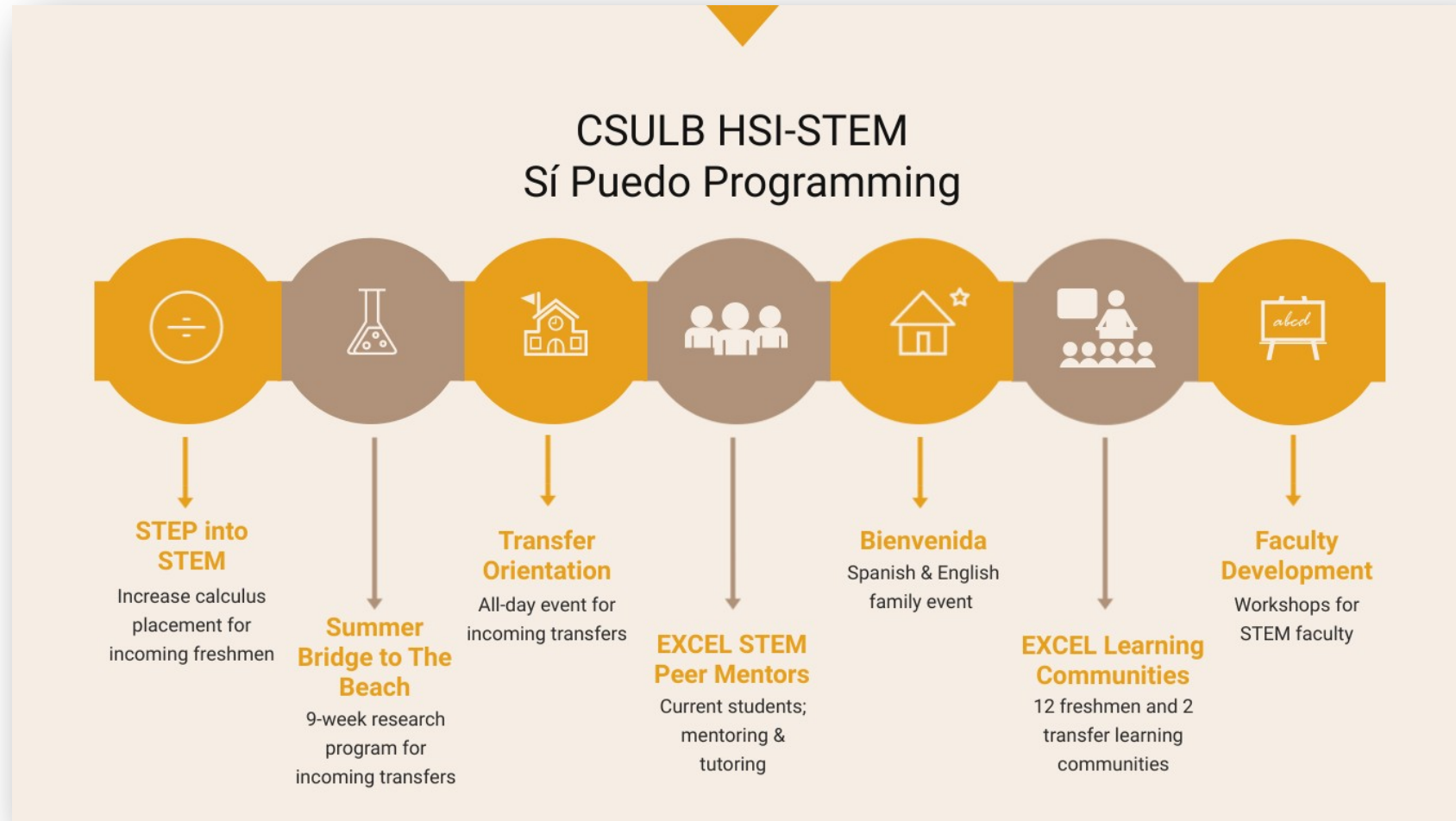
- To achieve program goals, to improve student academic success and timely degree completion and retention, Si Puedo offers:
 - tutoring, mentorship and culturally relevant workshops,
 - freshman summer program to address math preparation for successful completion of gateway courses,
 - transfer experience course that increases emphasis on career exploration and science identity within the transfer learning community,
 - STEM-specific family orientation,
 - faculty training to engage in culturally responsive pedagogy.



Project Overview

- To achieve program goals, to increase degree attainment and develop model transfer programming, Si Puedo offers:
 - first-year freshman and transfer learning communities that aim to increase retention and degree attainment for Hispanic and/or low-income students,
 - a STEM transfer-specific orientation,
 - summer bridge research experience program for first semester transfer students,
 - student-friendly articulation roadmap between each CSULB STEM major and the top 10 feeder community colleges.

Activities –Si Puedo Programming



Student Activities

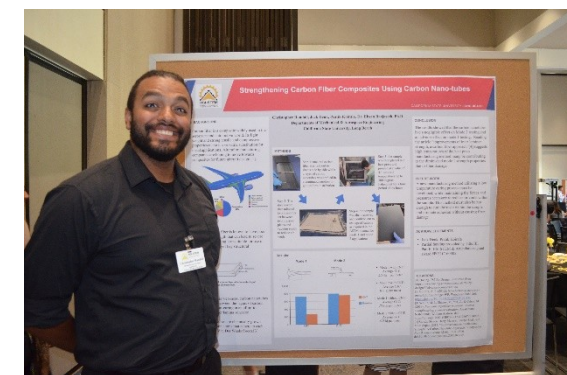
STEM Transfer

- Summer Bridge to the Beach (Summer)
- EXCEL Learning Community (Fall & Spring)*
- Transfer Orientation (Fall & Spring)*

STEM Freshmen

- STEP into STEM (Summer)*
- EXCEL Learning Community (Fall – Spring)*
- *Bienvenida* Family Event (Fall)*

*Activities supported by Near Peer STEM Mentors



Results

- Si Puedo's programming served 1850 students.
 - Freshmen and Transfer LCs served 1523 (49% Hispanic & 52% Pell eligible).
- Students who participated in two semesters of the Freshmen EXCEL LCs show higher persistence rates than those who did not participate at all.
 - First year persistence was 82% for participants versus 54% for non-participants in CNSM and 90% for participants versus 76% for non-participants in COE.
- For the transfer LC,
 - the fall 2017 cohort 3-year graduation rate of 71% is higher for Hispanic transfer students that participated in the EXCEL Transfer LC versus 64% for Hispanic non-participants.
 - 92% of the fall 2018 Hispanic cohort are in good academic standing (Fall overall GPA of 2.0 or better) compared to non-participants (78%) and have a higher average first term GPA of 3.00 versus non-participants average GPA of 2.57.

Lessons Learned

- Critical to integrate with college mission and initiatives on student success
- Learning Communities continue to be successful
 - For both transfer & first-time freshmen
 - Observe increases in first semester academic standing, retention, math course grades, and first semester GPA
- STEP into STEM program
 - Aim is to increase mathematics placement & preparation
 - And to increase first semester academic performance and standing
 - Observe increases in first semester math course grades & academic standing vs non participants
- Peer Mentors
 - Continue to be crucial component for freshmen and transfer STEM student support & success
 - Have been effective at creating a sense of community and belonging
 - Participating PMs increase personal leadership and professional skills through training and experience as peer mentors
 - Reflections and input inform and improve programming



Next Steps/Long-Term Plans

- **Expand programming**
 - Increase transfer support capacity & programming/outreach
 - Move from Transfer Roadmaps to Digital Transfer Road Mapping
 - Create EXCEL LC for students in academic risk
- **Implement CSULB/HSI-STEM Alumni Group that will**
 - Support near peer mentors and program participants
 - Share insights into STEM industry and field that will inform HSI-STEM events and programs of workforce needs
 - Engage students on their pathway and connect students to experiential learning opportunities
- **Strengthen STEM outreach among LBUSD and LBCC to**
 - Increase access to first year STEM programs in first Summer and Fall following admissions
 - Improve student interest in STEM to attend CSULB

Summary

- The Department of Education HSI-STEM & Articulation program has been instrumental in changing the culture of STEM education at CSULB (2011-2021).
- The grant has enabled campus to
 - better serve Hispanic students, URM, first-generation, and Pell-eligible students
 - better serve freshmen and transfer students majoring in STEM at CSULB
 - evaluate and assess student programs as high impact practices
 - redesign and develop new student success courses for freshmen and transfer students
 - offer faculty development workshops and training promoting assets-based curriculum

AIMS²: Enhancing Student Success with a Multi-Institutional Collaborative Program

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S. K. Ramesh, Ph.D., Professor

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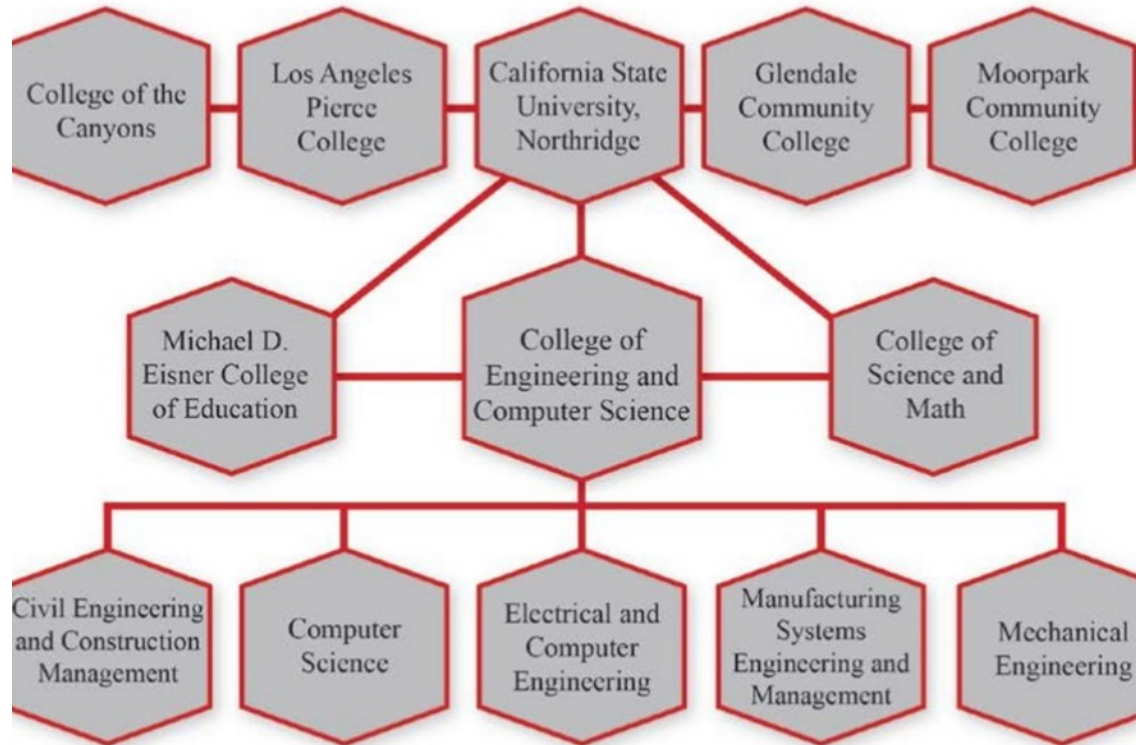
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DISCLAIMER

Supported by the [AIMS² Program](#) and funded by the United States Department of Education FY 2016 Title III, Part F, Hispanic-Serving Institutions (HSI) STEM and Articulation Program five-year grant, Award Number P031C160053, CFDA Number 84.031C.

However, the contents of this presentation do not necessarily represent the policy of the US Department of Education, and you should not assume endorsement by the Federal Government.

Project Overview



Organization – Bridging the Gap: Enhancing AIMS² for Student Success

- Cohort based model
- Collaboration between CSUN and CCC's
- High Transfer Achievement
- GPA, Persistence, and Graduation
- Served over 250 transfer students (approximately 67 % Latino/a) with 2011 grant
- Served over 500 freshmen and transfer students with 2016 grant

TEX!
RECOGNIZED
EXAMPLE of
EXCELENCIA



WHITE HOUSE INITIATIVE
on EDUCATIONAL EXCELLENCE for HISPANICS
25 Years of Fulfilling America's Future

Project Website www.ecs.csun.edu/aims2

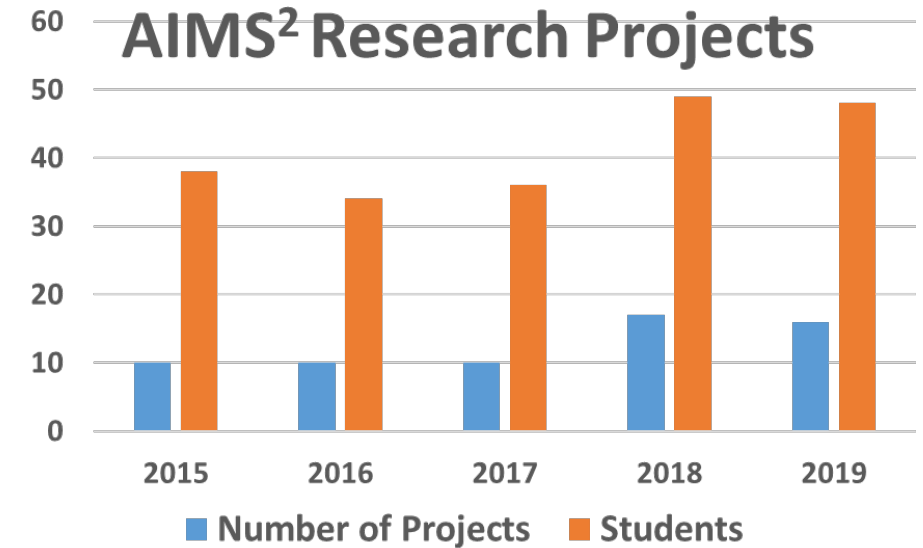


Activities: AIMS² is all about “community

- Workshops/Industry Panels
- Career preparation
- Research Presentations
- Support to attend conferences
- Annual AIMS² Research Symposium
- Faculty mentors
- Peer mentors
- Student tutors
- Weekly/biweekly meetings
- Advising
- Maintain minimum requirements for scholarship



Research and Mentoring → Keys to student success



- Number of projects – **63**
- Number of students – **205**
- Number of faculty – **57**
- Approximate # of hours of paid research – **37,000**

Results



- **Increased persistence and completion** (3 Year Transfer Graduation rate of 70 % for transfers. Cohort Persistence rate of 86 %)
- **Increased completion of gateway courses** (67 % - 80% across partner institutions)
- **Increased Latino degree completion in CECS** (Tripled # of graduates from 57 to 171 in five years)
- **Fostered positive career outlook** (100 % of cohort students felt prepared compared to 63 % of other students)

Lessons Learned

- Adapting to online modalities
- Supporting students in a virtual environment
- Faculty/Peer Mentoring, Tutoring and Research

Monitoring student concerns

- Academic struggles
- Financial concerns
- Depression
- Anxiety
- Family conflict
- Roommate conflict
- COVID-19 struggles
- Other

Process

- Mentor reports concerns
- Automated email sent to AIMS² staff
- AIMS² staff reaches out to Mentor to determine action plan

Next Steps/Long-Term Plans

- “Servingness” model to enhance belonging and student success
- Enhance HIP’s including Faculty/Peer Mentoring, Tutoring, and Student Research participation
- Faculty and staff professional development under a servingness model
- Develop culturally sensitive pedagogies to strengthen student success in engineering and computer science
- Strengthen industry and community engagement with external advisory committee to prepare students for professional and career success

Summary

- Substantial improvement in student academic performance and gateway course completion across all partner institutions
- Enhanced faculty and peer environments to support and culturally validate students
- Improved transfer success and shortened time to graduation
- Improved career preparation through close interaction with industry professionals
- Quality research-related student-faculty, and peer-peer interaction—contact between faculty and project participants and among project participants
- Enhanced baccalaureate degree completion and closed equity gaps



Advising for Undergraduate Success (A4US)

A4US to PATHS

*Dean Sastry G. Pantula, Ph.D.,
HSI-STEM & Articulation Department of Education
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Outline

❖ Advising for Undergraduate Success (A4US)

- Last year of the grant
- No cost extension submitted



❖ Proactive Approaches for Training Hispanics in STEM (PATHS)

- Submitted, June 14th
- Overlap year



Advising for Undergraduate Success (A4US)

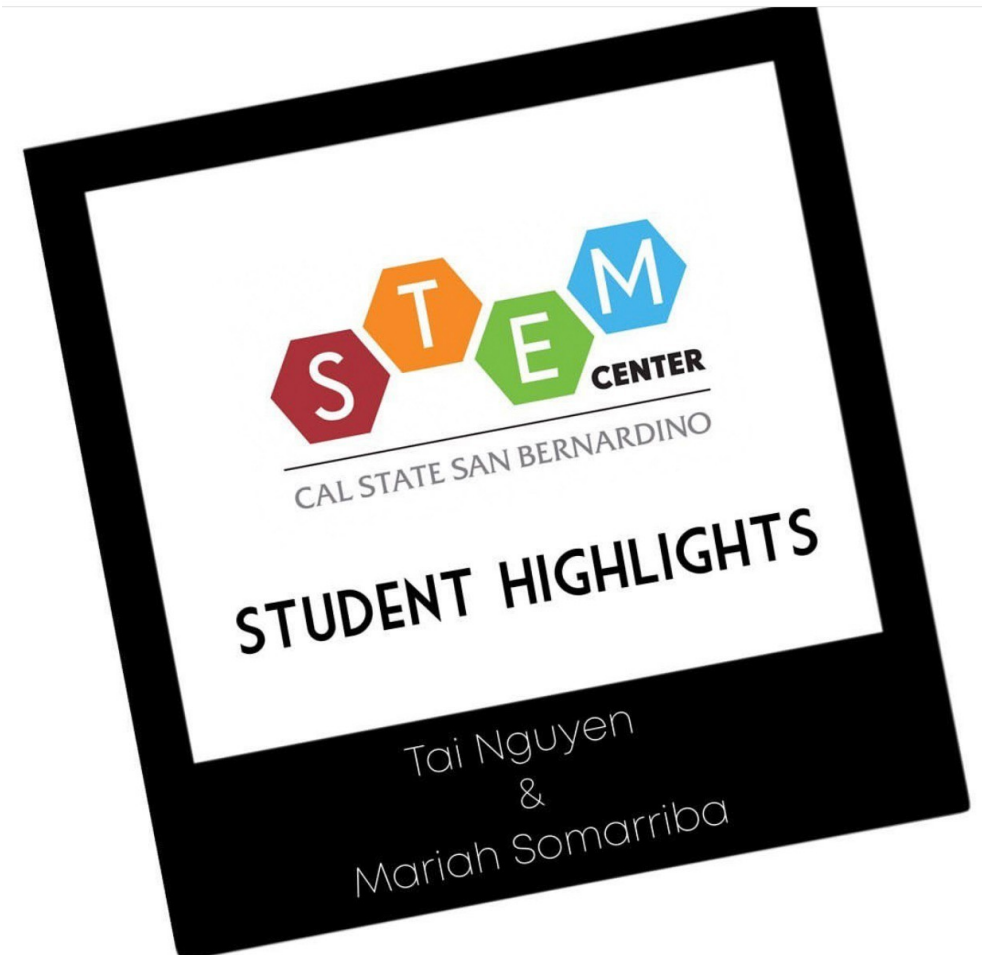
A4US



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- An excellent proposal
- Focused on:
 - Intrusive Advising
 - EAB
 - Community College Connections
- Started in 2016
- PI changed in 2018
- Senior Advisor left in 2018;
- New Director of Advising came in 2019
- PAC moved in 2020
- Dean's Fellow came in 2021



A4US- Highlights

- ❖ Besides additional academic advising to 'random' cohorts:
 - Career Panels
 - Major Mixers
 - Workshops on time management; financial aid
 - Transfer Tuesdays
 - STEM Club
 - Nudges
 - Paint nights
 - Learning Assistants
 - Celebration of Teaching
 - Flexible hours
 - Professional Development for STEM Counselors/Faculty





Advising for Undergraduate Success (A4US)

A4US- Career Panels

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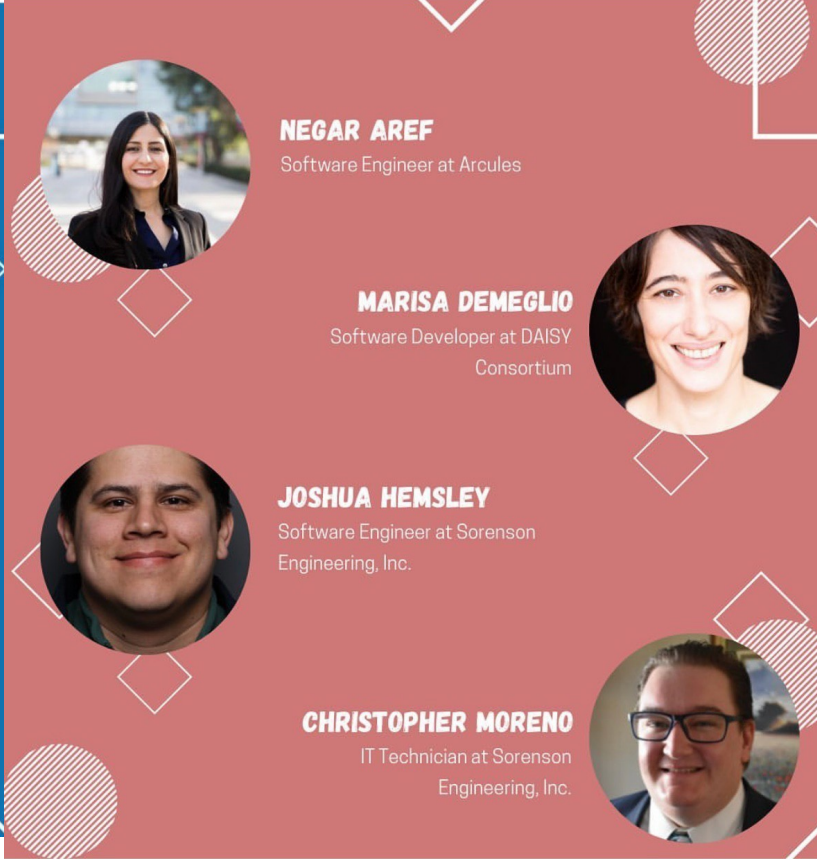


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Advising for Undergraduate Success (A4US)

A4US- Major Mixers

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ENJOY THIS TIME TO RECONNECT!

Biology Major Mixer Spring 2021

Come hang out and reconnect with your fellow classmates, meet other students and share your goals and experiences!

Feb. 12, 2021 @ 1-2 PM

Zoom Link

<https://csusb.zoom.us/j/86103545326>

ENJOY THIS TIME TO RECONNECT!

Chemistry & Biochemistry Major Mixer Spring 2021

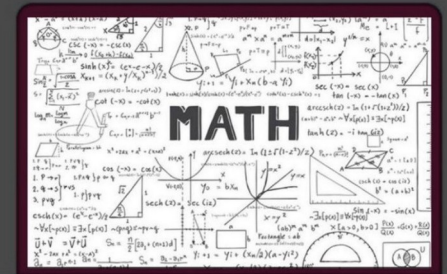
Come hang out and reconnect with your fellow classmates, meet other students and share your goals and experiences!

Feb. 26, 2021 @ 1-2 PM

 Zoom Link

<https://csusb.zoom.us/j/86103545326>

You're Invited



COME AND HANG OUT AND RECONNECT WITH YOUR FELLOW CLASSMATES, MEET NEW MATH STUDENTS AND SHARE YOUR GOALS AND EXPERIENCES!

MATH MAJOR MIXER



OCT. 28, 2020

12:00-1:00PM

[HTTPS://CSUSB.ZOOM.US/MY/CNSADVISING](https://csusb.zoom.us/my/cnsadvising)



Advising for Undergraduate Success (A4US)

A4US-Workshops



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CALIFORNIA STATE UNIVERSITY
SAN BERNARDINO
Natural Sciences Advising

Tuesday, September 22, 2020
at 12:00pm

CREATING A SUCCESSFUL VIRTUAL LEARNING ENVIRONMENT

We will go over some tips on organization, prioritization, and self-monitoring skills to take ownership of your learning!

MEETING ID: 909-537-5300
ZOOM LINK:
[HTTPS://CSUSB.ZOOM.US/MY/CNSADVISING](https://csusb.zoom.us/my/cnsadvising)

CALIFORNIA STATE UNIVERSITY
SAN BERNARDINO
Natural Sciences Advising

JOIN US TUESDAYS AT 12:00PM
FOR OUR FALL 2020 WORKSHOPS!

- INTRODUCTION TO VIRTUAL CAMPUS RESOURCES (September 8th)
- EARLY ACCEPTANCE PROGRAMS FOR PROFESSIONAL SCHOOL HEALTH DEGREES (September 15th)
- CREATING A SUCCESSFUL VIRTUAL LEARNING ENVIRONMENT (September 22nd)
- TIME MANAGEMENT 101 FOR A VIRTUAL ENVIRONMENT (September 29th)
- MOTIVATION & GOAL SETTING FOR VIRTUAL LEARNERS (October 6th)
- ACADEMIC PLANNING TOOLS: LEARN TO READ YOUR PAWS REPORT & CREATE A MYCAP (October 13th)
- BENEFITS OF CAMPUS INVOLVEMENT FOR PRE-HEALTH STUDENTS (October 20th)
- CREATING HEALTHY HABITS & COPING THROUGH COVID (November 3rd)
- KEEPING FOCUSED & MANAGING DISTRACTIONS IN A VIRTUAL LEARNING ENVIRONMENT (November 10th)
- FINANCIAL LITERACY: HOW TO MANAGE YOUR FINANCES (November 17th)
- PROMOTING DIVERSITY IN STEM: A DISCUSSION OF CULTURAL WEALTH & COMMUNITY RESOURCES (November 24th)
- MANAGING STRESS BY CULTIVATING WELL-BEING & PRACTICING SELF-CARE (December 1st)

ZOOM LINK:
[HTTPS://CSUSB.ZOOM.US/MY/CNSADVISING](https://csusb.zoom.us/my/cnsadvising)
MEETING ID: 909 537 5300

CALIFORNIA STATE UNIVERSITY
SAN BERNARDINO
Natural Sciences Advising

Tuesday, September 29, 2020
at 12:00pm

TIME MANAGEMENT 101 FOR A VIRTUAL ENVIRONMENT

Come learn skills to manage your time effectively. You will have the opportunity to gain the tools to balance your education and personal life. We will also be discussing tips to help you succeed during the virtual learning era.

MEETING ID: 909-537-5300
ZOOM LINK:
[HTTPS://CSUSB.ZOOM.US/MY/CNSADVISING](https://csusb.zoom.us/my/cnsadvising)

CALIFORNIA STATE UNIVERSITY
SAN BERNARDINO



Advising for Undergraduate Success (A4US) A4US- Events



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STEM CENTER
CAL STATE SAN BERNARDINO

STEM CENTER PRESENTS

Paint Night

MARCH 26TH | 4 PM - 6 PM

REGISTER HERE:
<http://bit.ly/STEMPAINTNIGHT>

Materials are available via drive-thru pickup for the first 20 people that register!

More details below.

STEM CENTER

TRANSFER TUESDAY SERIES

Please join us for our Transfer Tuesday series that will be held every first Tuesday of the month! Transfer students are encouraged to attend to learn more about the STEM Center and campus resources!



FEB 2ND, 12 PM TO 1 PM

ZOOM REGISTRATION: [HTTP://BIT.LY/3A4YAB1](http://bit.ly/3A4YAB1)



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1/9

THE STEM CENTER WOULD LIKE TO INVITE YOU TO CELEBRATE THE

Class of 2021

Come join us as we celebrate our Fall 2020 and Spring 2021 graduates during our virtual STEM Graduate Recognition Ceremony! RSVP below!

08
MAY

RSVP Link:
<http://bit.ly/STEMCeremony>

10
AM



A4US- Challenges/Lessons (Last Year)

- Engagement from students has been a challenge
- Advising wasn't as intrusive, since it only expected one meeting a year
- EAB was used more by advisors, and faculty are warming up to it
- Morale issues- PAC vs STEM
- UGS changes
- Counselor changes
- We did see an impact in some of the sense of belonging
- Faculty Learning Community on Advising
- Community College Event!
- Celebration of Teaching

PATHS

- **Priority 1: increase Hispanic and low-income students** attaining degrees **STEM**
- **Priority 2:** transfer and articulation agreements between HSI CC and CSUSB.
- **Competitive Preference Priority 1** – Fostering *Flexible and Affordable Paths* to Obtaining Knowledge and Skills - **providing work-based learning experiences.**
- **Competitive Preference Priority 2 – Academic Achievement and Retention Strategies** - enhance tutoring, counseling, and student service programs; customized instruction courses.
- **Invitational Priority** – Providing Student Supports for Addressing the Impact of COVID-19 on Students' Mental Health and Academic Outcomes.



PATHS

- ❖ **Minority Serving Institutions: America's Underutilized Resource for Strengthening the STEM Workforce**
 1. dynamic, multilevel, mission-driven leadership,
 2. institutional responsiveness to student needs,
 3. campus climate that supports a sense of belonging,
 4. student-centered academic and social supports,
 5. effective mentorship,
 6. undergraduate research experiences, and
 7. mutually beneficial public- and private-sector partnerships



1. Dynamic, Multilevel, Mission-Driven Leadership

- Leadership Team in the College
- **President Morales**
- Chancellor Castro
- **STEM-NET: Frank A. Gomez**





2. Institutional Responsiveness to Student Needs

- Articulation Agreements
- **Recruitment at CCs**
- Summer early start
- **Alternative Degree tracks**
- Post-Covid-19 support





3. Campus Climate that Supports a Sense of Belonging

- **Science Success Center**
- serve as a one-stop shop
- improve collaboration between CSUSB, CCs, and employers
- help students find work-based learning experiences
- steer students to valuable resources such as Counseling and Psychological Services, supplemental instruction, learning assistantships, undergraduate research opportunities, and other programs that improve academic and career success,
- host self-help workshops, career panels, and social events where students can cultivate friendships, and
- host peer tutoring and small-group learning communities.
- **Science buddies**





4. Student-Centered Academic and Social Supports

- Learning Assistant Program
- LA-Faculty Learning Community
- Faculty Advising Learning Community
- Supplemental Instruction and Advising
- *Individual Development Plans*





5. Effective Mentorship

- SACNAS membership- networking, mentoring, annual conference
- Individual Development Plans
 - 2-unit course
 - Faculty Learning Community
 - Science counselors





6. Undergraduate Research Experiences

- 20 Summer Research experiences +
- **Faculty support**
- Part of IDP
- **Professional/graduate schools**





Advising for Undergraduate Success (A4US)

7. Mutually Beneficial Public- & Private-Sector Partnerships- Khalil Dajani

- Aerospace and Defense industry
- New internships





Advising for Undergraduate Success (A4US)

PATHS Priorities

Absolute Priority 1	Absolute Priority 2	Competitive Priority 1	Competitive Priority 2	Invitational Priority
Science Success Center	Articulation Agreements	Science Success Center	Science Success Center	Connect to CAPS
Science Buddies	Summer Early Start Bridge Program	Science Buddies	Proactive Advising	Mental health panels
Alternative Degrees	Community College Workshops	SACNAS/HACU/ Professional Societies	SACNAS/HACU/ Professional Societies	Food and health insecurities
Learning Assistants	Invite to CSUSB Labs	Career and other panels	On Campus- SI, Tutoring, Centers	ED COVID-19 HANDBOOK-
IDPs	SSC Counselors at Community Colleges	IDPs	IDPs	Strategies for safe operations- impact of COVID-19
REUs	CC Faculty Learning Communities	REUs	REUs	Next Generation Smart Classrooms
Internships	Leadership	Internships	Internships	Leadership





Advising for Undergraduate Success (A4US)

Leadership Team

- Sastry Pantula
- Guillermo Escalante
- Dave Maynard
- Khalil Dajani
- Carol Hood
- Cobblestone
- Budget- supports the Science Success Center; Undergrad Research; FLCs; LAs; PI/Co-PI





Advising for Undergraduate Success (A4US)



Thank You!

Questions???





STEM Success at Stanislaus State

STEM Success at Stanislaus State



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California State University, Stanislaus*

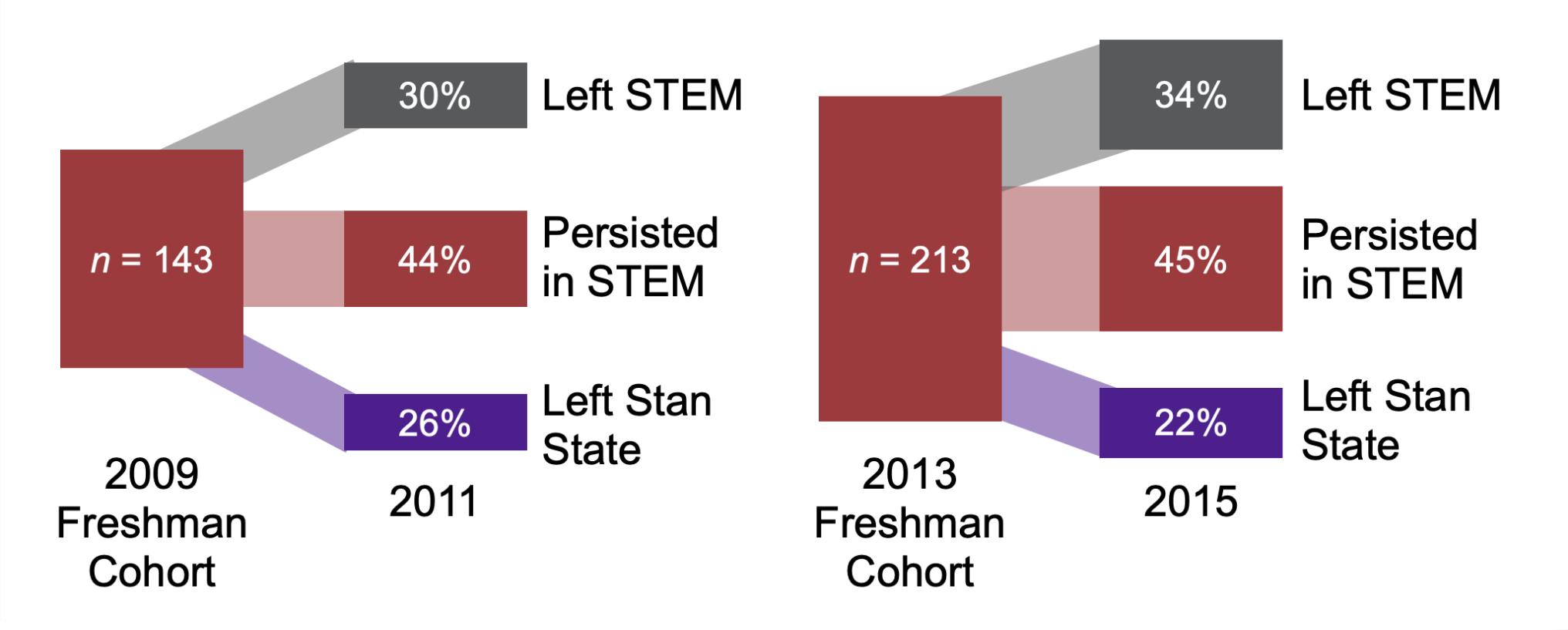


US Dept of Education
Title III Part F grant
P031C160070

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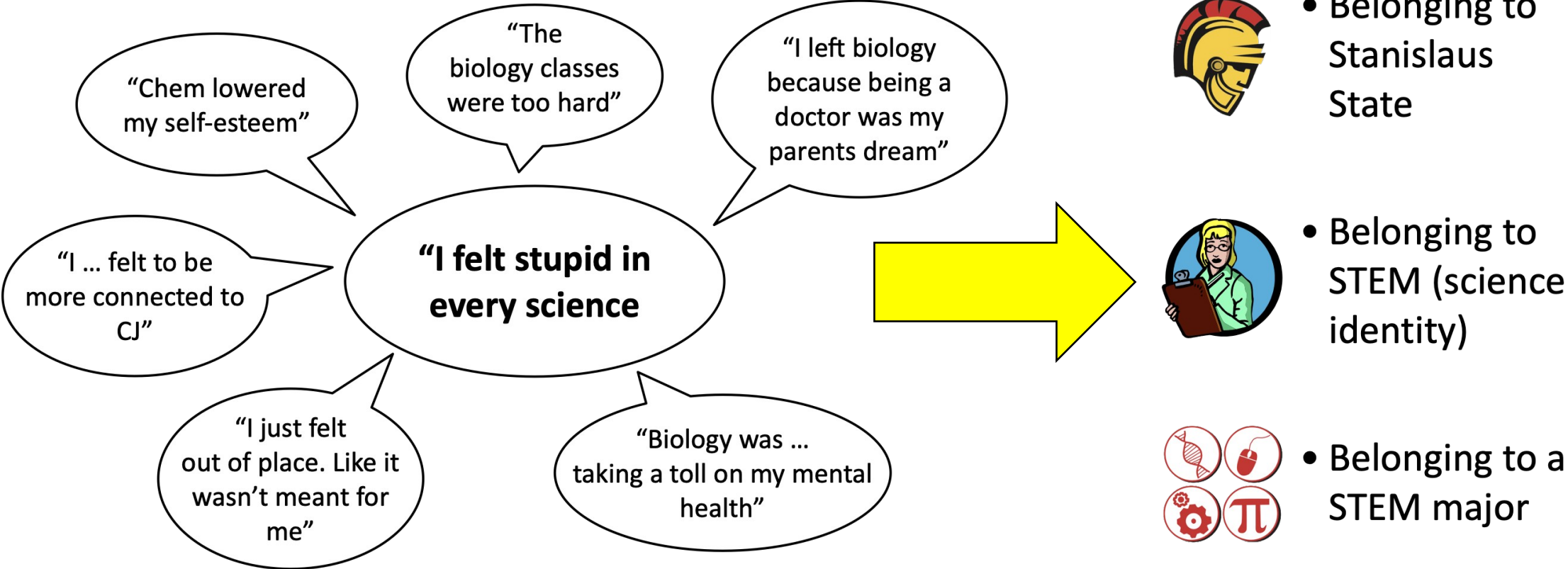
The Challenge: Improve Retention in STEM



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Approach: Improve Senses of Belonging



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STEM Success at Stanislaus State

Activities

Warriors on the Way to STEM (WOW2STEM)

Outreach and major-specific roadmaps for students at 10 community college partners

Biology B.S. Roadmap		
Prerequisites to Lower-Division Courses	Lower-Division Courses at Merced College	Major Course Requirements at Stanislaus State
CHEM-004 & MATH-C	BIOL-044* (The Cell & Evolution)	BIOL 3320—Cellular and Molecular Biology (3 units)
BIOL-044	BIOL-048* (Microbiology & Physiology)	BIOL 3350—Introductory Genetics (3 units)
CHEM-024 & MATH-C	CHEM-044** (General Chem I)	BIOL 3640—Ecology (3 units)
CHEM-044	CHEM-048** (General Chem II)	BIOL 4400—Evolution (3 units)
CHEM-048	CHEM-224*** (Organic Chem I)	Genetics and Biotechnology course (2 units)
MATH-C	MATH-044 (Calculus I)	Structure and Function course (4 units)
MATH-02 @ MATH-2H	MATH-10 (Statistics I)	Diversity and Systematics courses (8 units)
MATH-02 @ MATH-2I & MATH-2H	MATH-044 (Calculus I)	Elective courses (8 units)
MATH-044	PHYS-024 (Gen Physics I) & PHYS-028 (Gen Physics II)	Or may choose one of the following concentrations: • Organismal, Ecological, and Environmental Biology • Molecular, Cellular, and Microbial Biology

* Approved course articulation with Biology 1050/1150 (BIOL-044) at Merced College. The lecture and lab must be completed at Stanislaus State.
** CHEM-044/048 must be completed at Stanislaus State.
*** High school CHEM 224 satisfies the Organic Chemistry requirement. If your high school course is approved, you may transfer credit for the course. Your high school course must be completed at Stanislaus State before your first semester at Stanislaus State.
**** High school CHEM 224 satisfies the Organic Chemistry requirement. If your high school course is approved, you may transfer credit for the course. Your high school course must be completed at Stanislaus State before your first semester at Stanislaus State.

For all degree requirements, visit www.csustan.edu/roadmaps

Last Updated 11/24/2018

STEM Discovery Academy (SDA)

Two-week summer immersion program for entering freshmen and transfer STEM students



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STEM Success at Stanislaus State

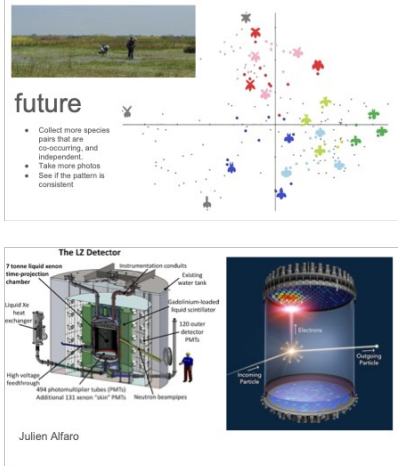
Activities

NSCI 1000 (Information Investigation)

First-year, 3-unit General Education course for STEM majors

Research and Immersion for STEM Excellence (RISE)

Paid research with faculty during first 2 years on campus



STAN STATE		NATURAL SCIENCES		Schedule of Classes						
				2019 Fall						
				Biological Sciences						
Census Date is September 19, 2019										
<i>Do you want to plan your ideal schedule? Click here for STAN Scheduler!</i>										
CLS NBR	CAT SUBJ	SEC	COURSE TITLE	UNITS	DAYS	TIME	ROOM	INSTRUCTOR	OPEN SEATS	GRD OPT
41773	NSCI 1000	001	Information Investigation	3	TR	8:00A - 9:15A	N 124	An J	8	OPT
41774	NSCI 4961	001	Teaching Secondary Science	3	W	6:00P - 8:30P	N 229	Fleming M	11	L

Methods

- Traditional cloning to create new plasmids
- Introduce new plasmid into E. Coli
- Selecting the colonies with antibiotic resistance

Challenge

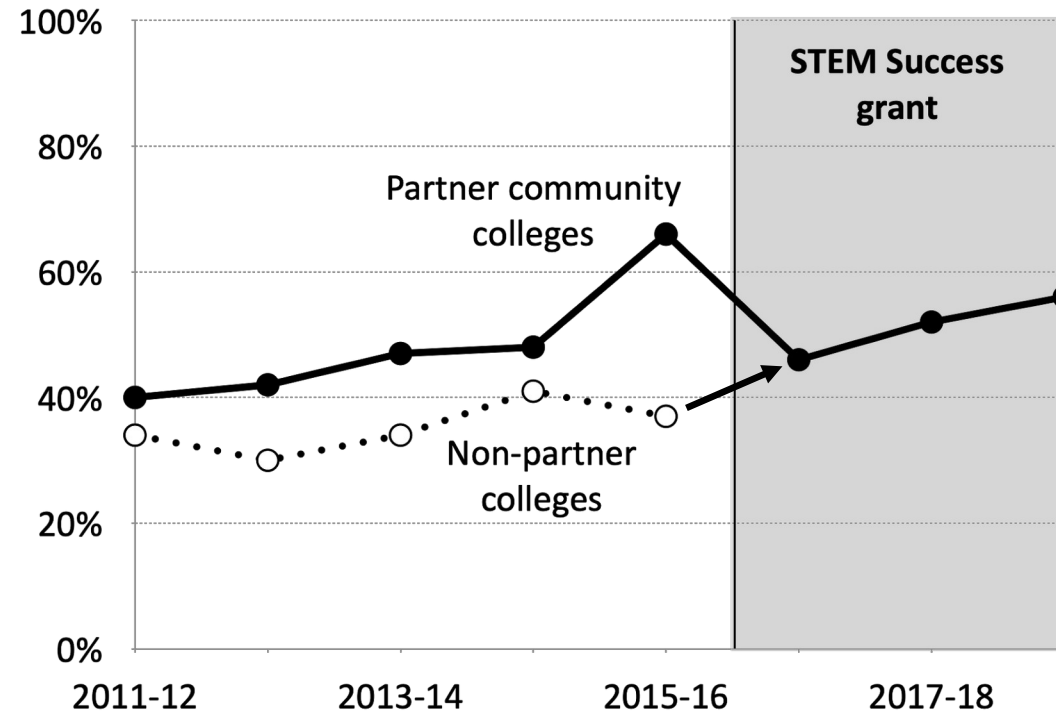
- How do they maintain a species boundary?

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Results

Transfer students are entering with more prereqs completed

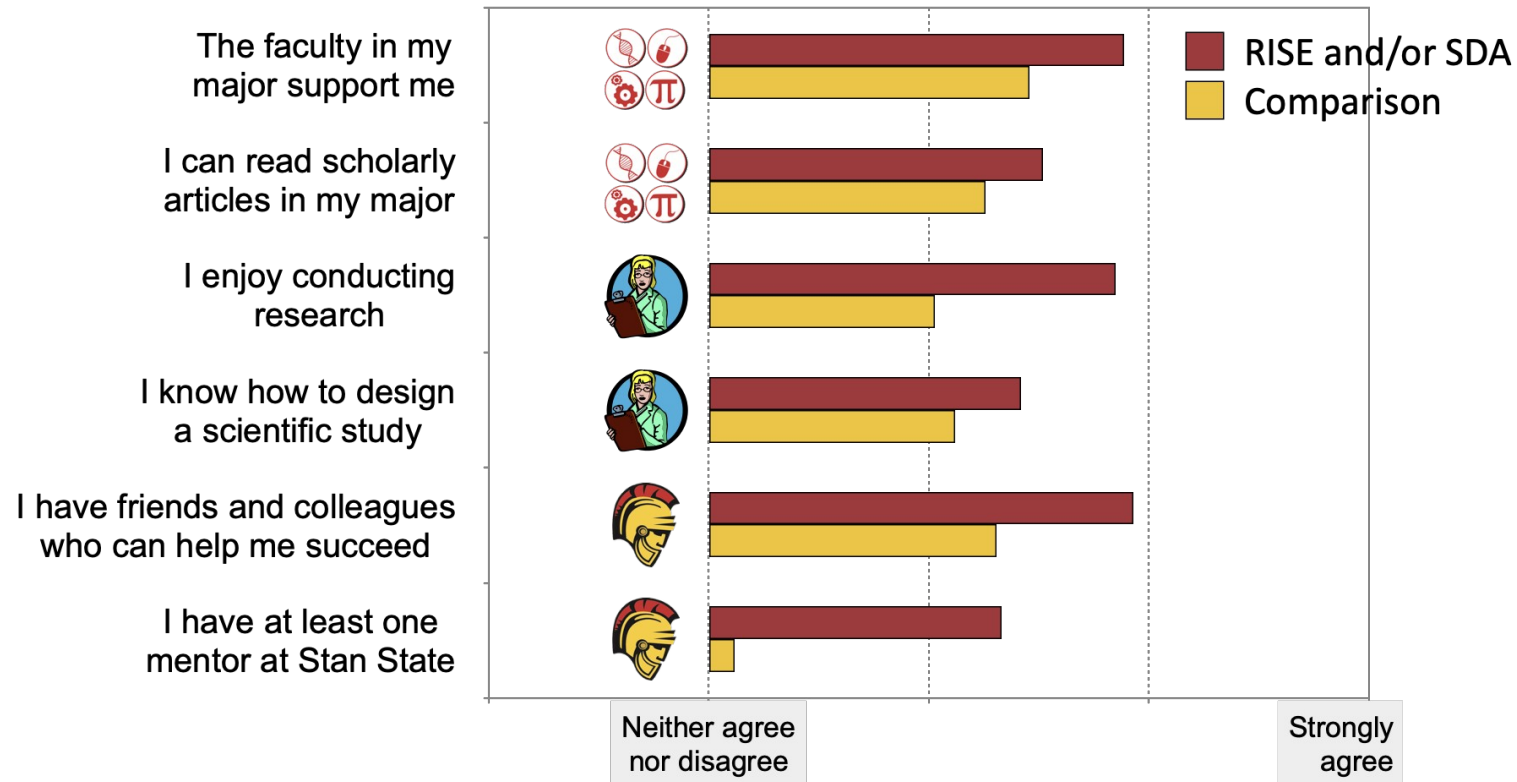


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Results

RISE and SDA improve psychosocial factors



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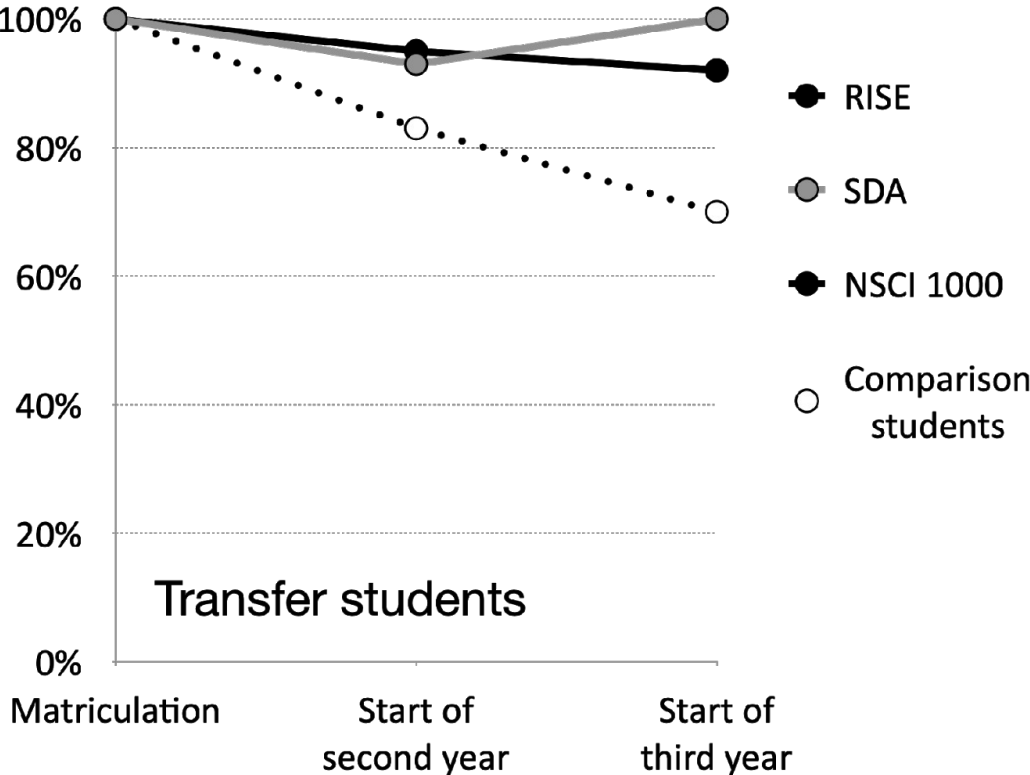
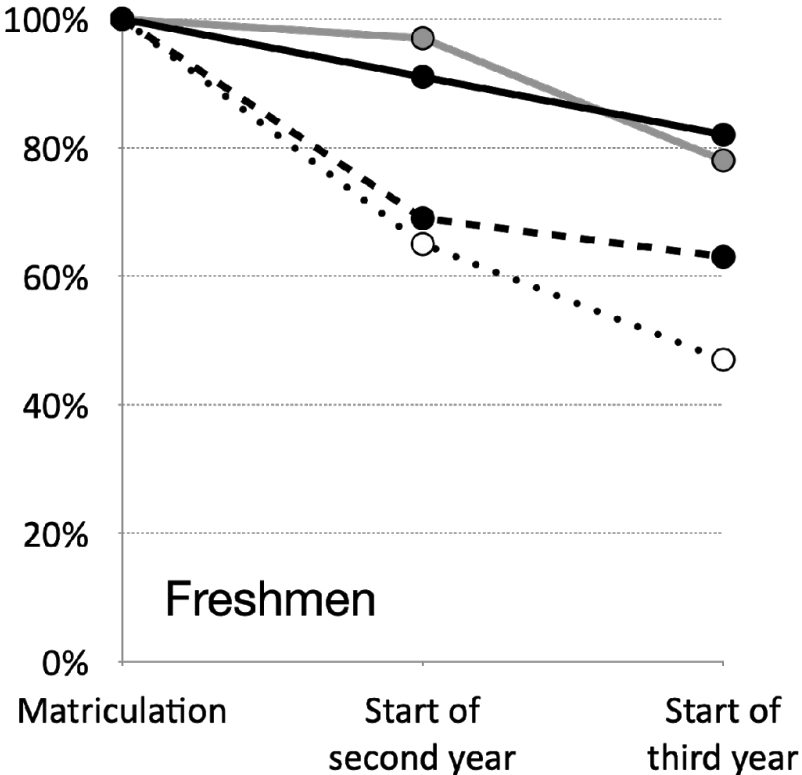
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STEM Success at Stanislaus State

Results

STEM Success students have higher STEM retention rates



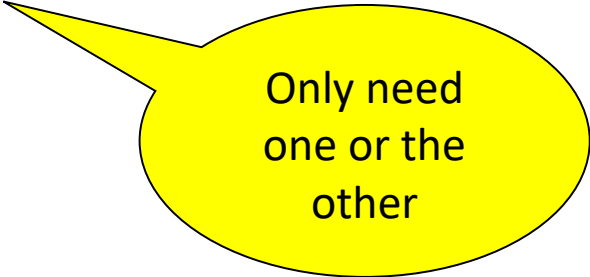
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Lessons Learned

- Tailor roadmaps at each community college for every Stan State STEM major
- Virtual SDA works well
- Virtual RISE is challenging
- Summer STEM academy = Research with faculty
- Connect students with peers whenever possible



Only need one or the other



Next Steps

- Continue to maintain roadmaps with community college partners
- NSCI 1000 has been institutionalized; may add a financial literacy component
- Explore alternate supports to continue involving students in faculty research
- Connect students to STEM employers and improve career readiness

Questions & Answers

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Next Steps/Closing Remarks

Dr. Frank A. Gomez
Executive Director, STEM-NET
Office of the Chancellor



<https://www2.calstate.edu/impact-of-the-csu/research/stem-net>

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csustemnet@lists.calstate.edu



Begin a Conversation with Colleagues and Join our Private CSU STEM-NET Facebook Group
<https://www.facebook.com/groups/2629611737269292>

STEM-NET Virtual Research Café 10.0

- July 28th 11AM-12PM
Registration Here:



Save the Date

STEM-NET September Webcast

- CSU NSF REU and IRES Awardees Webcast,
September 2nd 10AM- 12PM
Registration Link: **Coming Soon**