

NIH-Funded CSU Institutional Training Grants and Research Education Programs



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

Frank A. Gomez

fgomez@calstate.edu



NIH-Funded CSU Institutional Training Grants and Research Education Programs

Speakers

Laurie Stepanek, National Institutes of Health Overview of NIH/NIGMS Programs to Enhance Diversity of the Biomedical Research Workforce

Megumi Fuse, San Francisco State Student Enrichment Opportunities in STEM at San Francisco State University

Keith A. Trujillo, CSU San Marcos

U-RISE at CSU San Marcos

Judy Brusslan, Cal State Long Beach

The Bridges to the Doctorate Program at CSULB: Listen to the Reviewers and be Creative

Sonsoles de Lacalle, CSU Channel Islands

Initiative to Enhance Diversity in the Biomedical Research Workforce at CSUCI

Robert L. Vellanoweth, Cal State LA

Key features of the 25-year Bridges to the Doctorate Program at Cal State LA



Overview of NIH/NIGMS Programs to Enhance Diversity of the Biomedical Research Workforce

Overview of NIH/NIGMS Programs to Enhance Diversity of the Biomedical Research Workforce

Special Guest Laurie Stepanek– National Institutes of Health

Laurie Stepanek, Program Director

NIH, Division of Training, Workforce Development, and Diversity

laurie.stepanek@nih.gov



Overview of NIH/NIGMS Programs to Enhance Diversity of the Biomedical Research Workforce

Questions & Answers

Contact Information:

Name: Laurie Stepanek

Campus/Department: NIH, Division of Training, Workforce Development

Email: *laurie.stepanek@nih.gov*



Student Enrichment Opportunities in STEM at San Francisco State University

Megumi Fuse – San Francisco State University and Student Enrichment Opportunities

Collaborators: Drs. Ray Esquerra, Blake Riggs, Frank Bayliss, Linda Chen



Megumi Fuse, Professor & Director of Student Enrichment Opportunities

San Francisco State University, Department of Biology

fuse@sfsu.edu



Talk Overview

- Structure of our Bridge to Doctorate grant and plans for the future
- 2 Broader strategies for success
 - Holistic applications (GPA)
 - Working with student clubs





Talk Overview

- Structure of our Bridge to Doctorate grant and plans for the future
- 2 Broader strategies for success
 - Holistic applications (GPA)
 - Working with student clubs





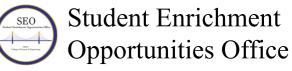
Student Enrichment Opportunities Office



History of the SEO Office

- Initiated by Dr. Frank Bayliss
- First grant: NIH Bridge to Doctorate from 1992-present
- NIH RISE 1999 (MS and UG)
- Since then,...
- NIH: MARC, PREP, IRACDA, Bridge to Baccalaureate
- NSF: CSU-LSAMP, REU (various), BAAM, STC (CCC),
- **OTHER:** Beckman, CIRM, Genentech Foundation, Bristol-Myers Squibb, Vir Biotech





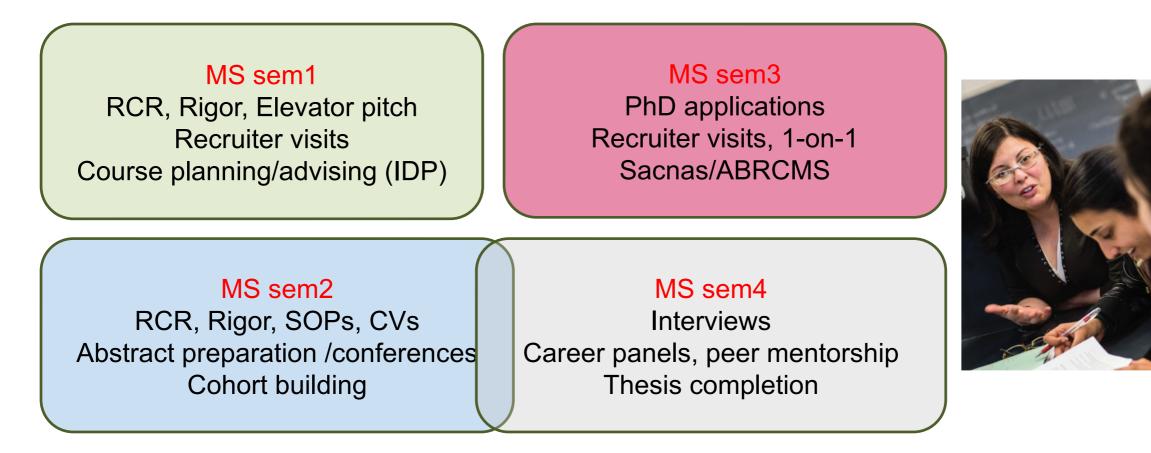


B2D Project Overview

- Old NIH Bridge to Doctorate from 1992-2021
- →new B2D started in Aug. 2021
- Overview of 4 semester MS program
- Outcomes
- Plans for the future



Activities: Colloquium



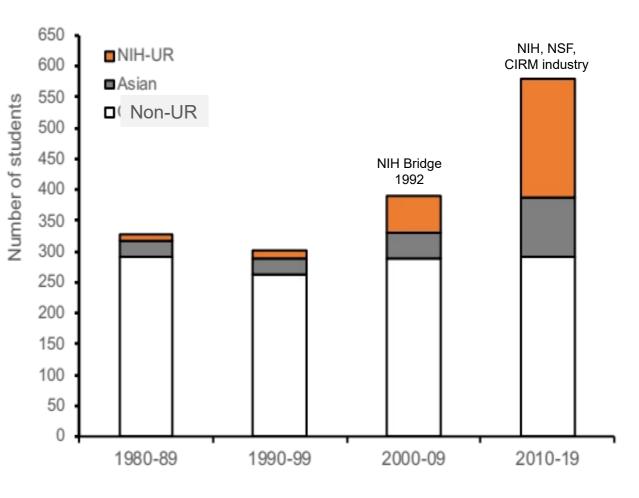


Results: MS programs

- From 2004-2020, ~235 MS students successfully entered PhD programs
- By 2020, ~110 completed Ph degrees
- Between 2020-2025, ~60 projected to complete their PhD (~75%)
- Since funding from programs such as B2D, diversity in MS programs has increased without displacing the non-UR population

Student Enrichment Opportunities at SFSU

SFSU Biology MA/MS Degrees from 1980-2019



fuse@sfsu.edu

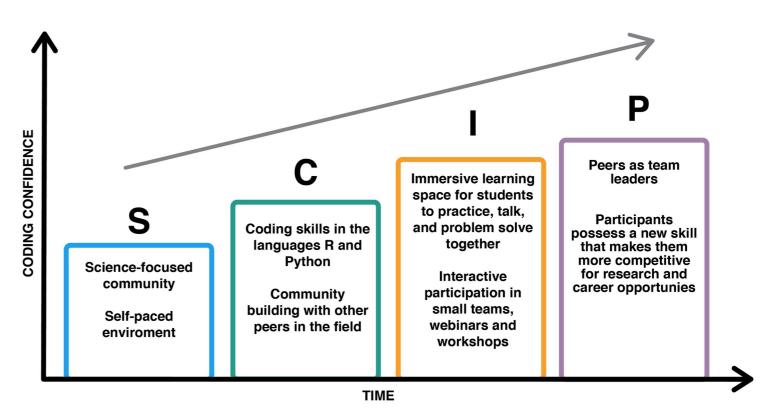


Activities: SCIP (Science Coding Immersion Program)

• Based on Pennings *et* al. (2020)



- Goals:
 - Maintain scientific community
 - Provide skills remotely

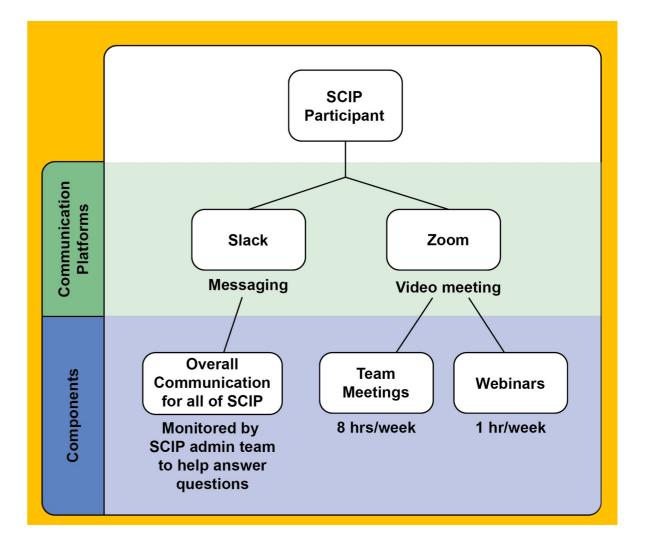


SF SU/Biology



Activities: SCIP

- Teams of 4-5 students or faculty
- 2hr/day, 4 days/week
- Online mechanisms:
 - Slack
 - Zoom
 - Udacity courses (free)
- Webinars hosted alumni



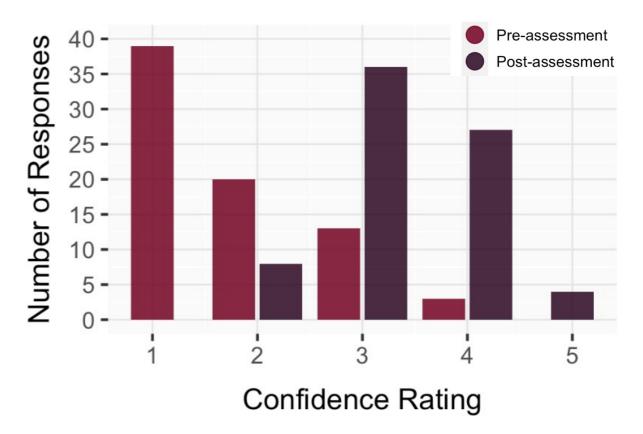


Results: SCIP

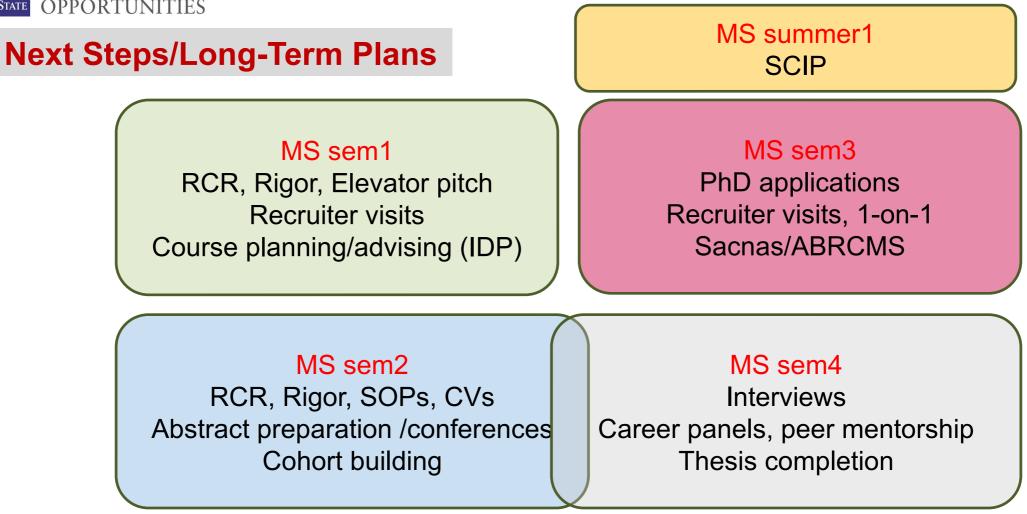
- Over 150 participants (50% with no coding experience)
- Most UG and MS
- Heightened confidence in coding

skills











Talk Overview

- Structure of our Bridge to Doctorate grant and plans for the future
- 2 Broader strategies for success
 - Holistic applications (GPA)
 - Working with student clubs





Broader Strategies: Holistic Applications

- We have an agreement with Grad Division (Waivers <3.0)
- Data from 1990s-2000s



Broader Strategies: Holistic Applications

- No difference for UG GPA <3.0 and > 3.0 in terms of:
 - 1. Final MS GPA (>3.7)
 - 2. Acceptance rate into PhD programs
 - 3. Completion rate of the PhD
 - 4. Time to completion of the PhD
- → Letters of rec and research statements are better indicators of success than GPA
 - We also post a list of schools not requiring GRE



Talk Overview

- Structure of our Bridge to Doctorate grant and plans for the future
- 2 Broader strategies for success
 - Holistic applications (GPA)
 - Working with student clubs





Broader Strategies: Working with Student Clubs

Advertising

TUDENT

ENRICHMENT OPPORTUNITIES

- Clubs host lab tours, information days...
- Alumni from clubs are on our admissions committee
- Clubs host alumni panels, application workshops
- Bay Area clubs meet



SACNAS



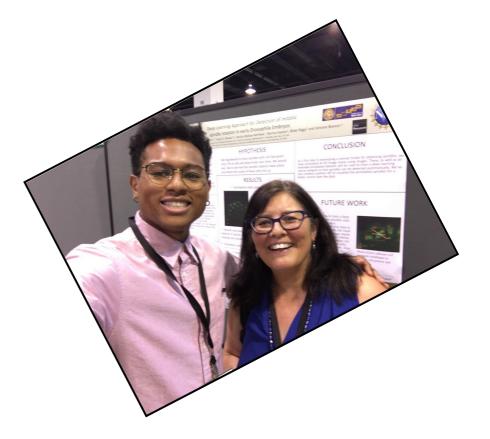
BE-STEM

fuse@sfsu.edu



Summary

- A holistic approach to the student is imperative
- Create a strong enough community that alumni remain, and that situations such as the pandemic do not fully derail activities
- The SEO office is the glue: SEO Scholar





Questions & Answers

Contact Information:

Name: Megumi Fuse

Campus/Department: SFSU/Biology (SEO)

Website: https://seo.sfsu.edu/

Phone #: 415-405-0728

Email: fuse@sfsu.edu



Follow us at @seo_sfsu





U-RISE @ CSUSM

U-RISE @ CSUSM

Keith A. Trujillo, PhD, California State University San Marcos Associate Director, Office for Training, Research and Education in the Sciences (OTRES)

Denise Garcia, PhD, Director of OTRES Richard Armenta, PhD, Associate Director of OTRES



Keith A. Trujillo, Professor Emeritus

CSU San Marcos, OTRES and Department of Psychology

keith@csusm.edu



U-RISE @ CSUSM Overview

- National Institute of General Medical Sciences (NIGMS)
 - Division of Training, Workforce Development, and Diversity (TWD)
 - Undergraduate and Predoctoral Cross-Disciplinary Training Branch
 - Bridges to the Baccalaureate (T34)
 - Undergraduate Research Training Initiative for Student Enhancement (U-RISE) (T34)
 - Maximizing Access to Research Careers (T34)
 - Postbaccalaureate Research Education Program (PREP) (R25)
 - Bridges to the Doctorate (T32)
 - Graduate Research Training Initiative for Student Enhancement (G-RISE) (T32)
 - Initiative for Maximizing Student Development (IMSD) (T32)

Keith A. Trujillo CSUSM OTRES keith@csusm.edu



U-RISE National Goals

- "...to develop a diverse pool of undergraduates who complete their baccalaureate degree, and transition into and complete biomedical, research-focused higher degree programs..."
- "...limited to applications from training programs at baccalaureate degree-granting **research-active institutions**..."
 - Less than \$7.5 million total costs in NIH research grants over the last 3 years
 - Nearly all CSU campuses eligible
- Focus on students from groups "...underrepresented in biomedical research: Blacks or African Americans, Hispanics or Latinos, American Indians or Alaska Natives, Native Hawaiians and other Pacific Islanders."

Keith A. Trujillo CSUSM OTRES keith@csusm.edu

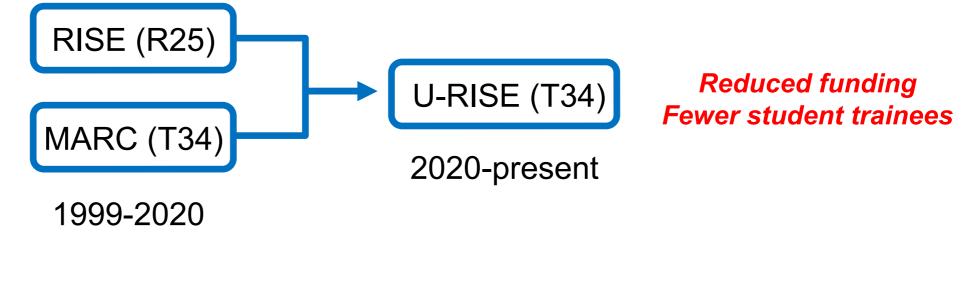


U-RISE @ CSUSM

U-RISE @ CSUSM Context

- U-RISE housed in Office for Training, Research and Education in the Sciences (OTRES)
 - Grant-funded center at CSUSM (not state-supported)







U-RISE @ CSUSM

Activities

Two-year program – juniors and seniors

Summer Research Training Bootcamp at CSUSM (introduce research skills)	Present Supervised Research in CSUSM Student Research Symposium	Pro	ner Research ogram at T32 University h skills, network)	Present Supervised Research in CSUSM Student Research Symposium
 Fall 1 Research Method and Stats I for supervised research and NSF GRFP proposal Draft Symposium Paper #1 from supervised research 	 Spring 1 Research Methods and Stats II Present journal club articles relevant for NSF GRFP draft Draft NSF with peer mentor 	Summer 2	 Fall 2 Grad School Applications Methods and stats boosters Finalize and submit NSF GRFP Draft Symposium paper #2 	 Spring 2 Mentor peers in NSF draft Grad School interviews Methods and stats booster Formal Journal Club critique
	Supervised Res	search		
Annual National Conference Presentations				
Ongoing Academic Support Supplemental Instruction STEM Center/PARL Support Academic Advising	Cultural Validatio UR Science Role Mod Community Building Culturally-relevant co	dels	ersity discussions	Critical Thinking U-RISE Workshops U-RISE seminar course

Keith A. Trujillo

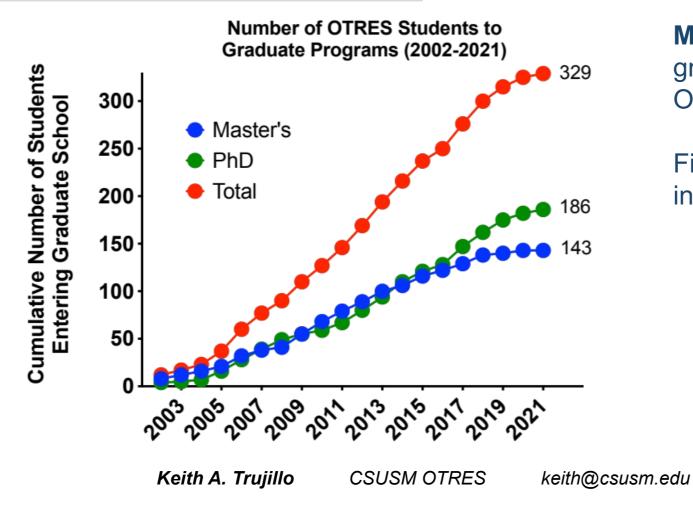
CSUSM OTRES

keith@csusm.edu



U-RISE @ CSUSM

OTRES Scholar Success



More than 325 students to graduate programs from CSUSM OTRES programs

First U-RISE cohort will graduate in spring 2022





U-RISE @ CSUSM

Lessons Learned

- Be nimble
 - Regular changes at NIH demand flexibility
- Institutional support essential (required by NIH)
 - Work with campus administrators
 - Leverage resources
- Program announcement prescriptive and specific
 - Checklist of required components necessary to successful proposal
- Lots of data required
 - Start early



Next Steps/Long-Term Plans

- Continuous adjustments to improve preparation for grad school
 - Develop the next generation of scientific leaders
- Apply for any and all relevant funding opportunities
 - Bridges to the Doctorate (NIGMS R25)
 - ESTEEMED (NIBIB R25)
- Round out offerings in Training, Research and Education (OTRES)

Keith A. Trujillo CSUSM OTRES keith@csusm.edu

U-RISE @ CSUSM



The next generation of scientific leaders





U-RISE @ CSUSM

Summary

- NIH supports preparation of students for graduate studies in the biomedical and behavioral sciences
 - Multiple programs, multiple targets
 - Focus on prep of undergrads from underrepresented groups aligns well with CSU mission
- U-RISE offers support for juniors and seniors
 - Transition from little knowledge/understanding to grad-school ready
 - Exciting and gratifying to participate in preparing future leaders









U-RISE @ CSUSM

Questions & Answers

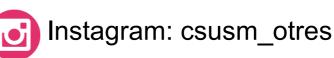
Contact Information:

Name: Keith Trujillo Campus/Department: OTRES Website: www.csusm.edu/otres Email: keith@csusm.edu





Twitter: OTRES_CSUSM





Bridges to the Doctorate

The Bridges to the Doctorate Program at CSULB: Listen to the Reviewers and be Creative

The Bridges to the Doctorate Program at CSULB: Listen to the Reviewers and be Creative

Judy Brusslan, Professor

Luis Mota-Bravo, UC Irvine

Judy Brusslan, Professor

CSULB, Department of Biological Sciences

Judy.Brusslan@csulb.edu



Bridges to the Doctorate

The Bridges to the Doctorate Program at CSULB: Listen to the Reviewers and be Creative

Judy.Brusslan@csulb.edu

Project Overview

- "The goal of the Bridges to the Doctorate Research Training Program is to develop a diverse pool of scientists earning a Ph.D. who have the skills to successfully transition into careers in the biomedical research workforce."
- Two Partner Institutions: M.S. terminal degree with biomedical research training (CSULB) and research-intensive Ph.D. granting institution > \$7.5 million (UC Irvine)
- Provide a bridge for M.S. students to enter research-intensive Ph.D. programs.
- T32, PAR 21-198 EXTENSIVE! Start in early June for September 25 deadline.
- Research Training Program Plan (25 pages)
- Data Tables
- Other Attachments: Recruitment Plan to Enhance Diversity, Trainee Retention Plan, Outcomes Data Collection and Storage Plan, Dissemination Plan, Institutional Course Credit Agreements

CSULB/Biological Sciences

Judy Brusslan



The Bridges to the Doctorate Program at CSULB: Listen to the Reviewers and be Creative

Bridges to the Doctorate

Activities_ Initial Grant Writing

- First submission in September 2019. RISE M.S. to Ph.D. Program 2015-2021: strong track-record with 75% of students in Ph.D. programs.
- Not enough time, priority score: not fundable
- Comments that I could address for September 2020 resubmission.
 - CSULB-UCI current interactions not described.
 - Incomplete Data Tables
 - Primary literature on best practices on diversity training not cited.
 - Near-peer mentoring program not defined.



The Bridges to the Doctorate Program at CSULB: Listen to the Reviewers and be Creative

Bridges to the Doctorate

Activities: Responses to Reviewers

- CSULB-UCI current interactions not described.
 - Count CSULB students in UCI Ph.D. Programs, ~3 per year
 - Two RISE M.S. to Ph.D. students matriculated to UCI
 - BUILD: Field Trips, Summer Research Opportunities, PREPP (Pre-Professor Program), UCI Recruitment
 - Emphasize proposed interactions: BTD attending UCI seminars, UCI faculty/post-docs speaking at CSULB, MSP Research Symposium, Campus Tours including research labs, Mock interviews, inhouse rates for UCI research facilities.
- Incomplete Data Tables
 - Get your Dean involved
 - Get someone to help you!



The Bridges to the Doctorate Program at CSULB: Listen to the Reviewers and be Creative

Bridges to the Doctorate

Activities: Responses to Reviewers

- Primary literature on best practices on diversity training not cited.
 - Joy!
- Hoftra, B, *et al.* (2020) The diversity-innovation paradox in science. PNAS 117:9284. <u>https://doi.org/10.1073/pnas.1915378117</u>
- Robnett, RD *et al.* (2018) Research mentoring and scientist identity: insights from undergraduates and their mentors. Intl J STEM Education 5:41. <u>https://doi.org/10.1186/s40594-018-0139-y</u>
- Vincent-Ruz, P and Schunn, CD (2018) The nature or science identity and its role as the driver of student choices. International J of STEM Education 5:48. <u>https://doi.org/10.1186/s40594-018-0140-5</u>
- Diversity Literature Journal Club for the last year of the RISE M.S. to Ph.D. Program



The Bridges to the Doctorate Program at CSULB: Listen to the Reviewers and be Creative

Bridges to the Doctorate

Activities: Responses to Reviewers

• Near-peer mentoring program not defined.

Judy Brusslan

- Zaniewski, AM and Reinholz, D (2016) Increasing STEM success: a near-peer mentoring program in the physical sciences. Intl J STEM Education 3:14 <u>https://doi.org/10.1186/s40594-016-0043-2</u>
 - Summer mentor training between first and second year of BTD program (active listening)
 - Monthly meetings between second-year mentor and first-year student (food/coffee)
 - Mentoring topics covered must be reported using Qualtrics form (accountability)
 - First year BTD students serve as mentors in their second year.
- Eskreis-Winkler, L *et al.* (2019) A large-scale field experiment shows giving advice improves academic outcomes for the advisor. PNAS 115: 14808-14810
 https://doi.org/10.1073/pnas.1908779116



Bridges to the Doctorate

The Bridges to the Doctorate Program at CSULB: Listen to the Reviewers and be Creative

Lessons Learned

- Priority Score Better: 37...
- Two-page response to reviewers' comments: emphasized success of RISE M.S. to Ph.D. and CSULB's ongoing interactions with UCI, despite pandemic. (April 26, 2021)
- "Hi Judy, Your pending application 1T32GM138075-01A1 has been approved for funding at a level of 5, 10, 10, 10, 10 for years 1 to 5 respectively." (June 22, 2021)
- Persistence, persistence, persistence.



Bridges to the Doctorate

The Bridges to the Doctorate Program at CSULB: Listen to the Reviewers and be Creative

Next Steps/Long-Term Plans

- It is really happening!
- Interview students accepted into M.S. programs (Biology, Microbiology, Biochemistry, Chemistry)
- Write MOUs for students and mentors
- Set up web site
- Set up Career Panel for October 22
- Wait for NoA (August 1)
- Training Related Expenses (\$8400), Stipends, xTrain
- BTD-Career Development Community: IDP's, <u>iBiology</u> Research Design online training, RCR
- Read and re-read proposal to bring everything to fruition!



Bridges to the Doctorate

The Bridges to the Doctorate Program at CSULB: Listen to the Reviewers and be Creative

Summary

• Dreams can come true



Judy Brusslan

CSULB/Biological Sciences

Judy.Brusslan@csulb.edu



Bridges to the Doctorate

The Bridges to the Doctorate Program at CSULB: Listen to the Reviewers and be Creative

Questions & Answers

Contact Information:

Name: Judy Brusslan

Campus/Department: CSULB/Biological Sciences

Website:

<u>https://www.csulb.edu/college-of-natural-sciences-and-mathemati</u> <u>cs/bridges-to-the-doctorate</u>

Email: <u>Judy.Brusslan@csulb.edu</u>

The Biological Sciences Department is hiring a tenure-track **Bacteriologist** spread the word. Position will be posted soon!



Initiative to Enhance Diversity in the Biomedical Research Workforce

Sonsoles de Lacalle – CSUCI

Sonsoles de Lacalle, Professor & Chair

CSUCI, Health Science Program

sonsoles.delacalle@csuci.edu





The Team

44

Leadership team Externa Sonsoles de Lacalle, Health Science Biology AcademicConsulting) Melissa Soenke, Psychology

External evaluator

Anthony DePass (DePass Hugo Tapia, HyeSun Lee, Psychology

Our Questions

• Is it possible to motivate students to choose a career in biomedical research through specific curricular components within the constraints of a teaching-intensive institution (PUI)?

• To what extent a focused investment in training faculty from biomedically-relevant disciplines at PUIs can inspire and support students in the decision to pursue careers in biomedical research?







Cultural norms on a college campus

According to the **cultural mismatch theory of inequality***, U.S. institutions tend to promote mainstream, independent cultural norms, and exclude interdependent norms more characteristic of underrepresented groups like first generation college students, individuals from working class backgrounds, and racial and ethnic minorities.

*Stephens, Fryberg, Markus, Johnson, & Covarrubias, 2012; Stephens & Townsend, 2015.



45





Continuing Generation college students often tend toward Independence

College viewed as a way to distinguish oneself and gain independence; Interest in expressing preferences, being unique, and standing out in a crowd; Expectations that one will voice opinions, challenge professors, and stand out in the classroom;

More likely to seek out help when experiencing difficulties in classes.

Initiative to Enhance Diversity in the Biomedical Research Workforce at CSUCI



First generation college students often tend toward Interdependence

Values reflect adjusting and responding to the needs of others, working closely with others, and being part of a community;

Priorities include maintaining relationships and fitting in;

Expectations include being cooperative, rather than competitive, and that professors should be deferred to;

Less likely to seek help when experiencing difficulties in classes.





Activities

Intervention For Students

- A techniques-intense summer course (the "Biomedical Research Bootcamp") that will introduce students to biomedical research, using neuroscience concepts as a common thread.
- Incorporates activities aimed at increasing sense of cultural match (difference education student panel, affirmation and goal reframing exercises, group work)







Intervention For Faculty

Two-part faculty training program:

- 1. Redesigning courses to incorporate course-based undergraduate research experiences (CURES).
- 2. Training in mentoring undergraduates from diverse backgrounds.





Lessons Learned

The good, the bad and the ugly.....

- Building the team: what is each getting out of this?
- Anticipating as many pitfalls as possible (IRB, release time, etc.)
- A comment on funding, IDC distribution and other matters
- The difference between a grant and a cooperative agreement with NIH
- Timelines

49

• Deliverables: individual and collective





Questions & Answers

Contact Information:

Name: Sonsoles de Lacalle Campus/Department: Health Science Program at CSUCI

Website: https://www.csuci.edu/academics/healthsciences.htm Email: sonsoles.delacalle@csuci.edu (preferred method)



Key features of the 25-year Bridges to the Doctorate Program at Cal State LA

Key features of the 25-year Bridges to the Doctorate Program at Cal State LA

Robert Luis Vellanoweth– Cal State LA

Robert Luis Vellanoweth, Professor

Cal State LA, Department of Chemistry & Biochemistry

vllnwth@calstatela.edu



52

Key features of the 25-year Bridges to the Doctorate Program at Cal State LA

The LABB → PhD Program

Key Features of a 26-year Effort

increasing diversity in biomedical science one student at a time

LABB→PhD

53

Key features of the 25-year Bridges to the Doctorate Program at Cal State LA

- MS students in Biological Sciences and Chemistry & Biochemistry
- Target students with an interest in a research career, especially firm plans for PhD
- Insufficient preparation during their undergraduate careers
- Usually have research experience but lower GPAs (2.8 3.2)

Partner Institutions

- Biological and Chemical Sciences programs at UC Irvine, UCLA, and USC
- Doctoral Institution Coordinators
- Luis Mota-Bravo, PhD UC Irvine
- Tama Hasson, PhD UCLA
- Meredith Drake-Reitan USC

CAL STATE LA

Key features of the 25-year Bridges to the Doctorate Program at Cal State LA

Academics: Correcting the Undergraduate Record

- Entrants usually have research experience but lower GPAs (2.8 3.2)
- Special attention to lower grades as undergraduates when choosing options
- Well-developed, literature-based graduate coursework
- Training in ethics and responsible conduct of research

Goal: Students show they can perform academically at the graduate level and finish the MS with GPA > 3.5



Key features of the 25-year Bridges to the Doctorate Program at Cal State LA

Literature: Critical Analysis of Original Research Studies

- Fellows attend monthly Journal Club meetings in their discipline
- Journal Club coordinator chooses students randomly to present methods and describe data
- Data is discussed by group members to draw conclusions *from data only*
- Compare their findings to authors' conclusions

Goal: Students learn to read papers as expected for functioning scientist



Key features of the 25-year Bridges to the Doctorate Program at Cal State LA

Seminars: Interacting with Local Scientists

- Weekly seminar series in Biomedical Sciences
- Always off-campus speaker, usually from partner institution
- Coordinate with Journal Club advisors to host speaker immediately after paper analyzed
- Meal and meeting opportunities with speaker

Goal: Students make contacts with local scientists to begin networking for PhD admission

CAL STATE LA

Key features of the 25-year Bridges to the Doctorate Program at Cal State LA

Research: Training in Well-Equipped Labs by Committed Advisors

- At least 35 advisors ready to incorporate students into their research endeavors
- Focus is on acquiring results during the first year
- Manuscripts prepared for publication by fall of second year
- Work with co-mentor at PhD partner institution when it makes sense for the research

Goal: Students demonstrate research accomplishments in time for PhD applications

CAL STATE LA Results

Key features of the 25-year Bridges to the Doctorate Program at Cal State LA

- 85% transfer rate from MS program to a PhD program
- Very little attrition, >40 PhDs earned so far
- Students well sought after—especially by non-Bridge partner institutions
- Likely major contributing factor to Cal State LA's #1 ranking in upward mobility

Future Goal: Expand program to 25 students and include all biomedically relevant MS programs

Key features of the 25-year Bridges to the Doctorate Program at Cal State LA

Questions & Answers



Robert Vellanoweth Michael Hayes

Phone 323.343-2148

Email vllnwth@calstatela.edu

Web calstatela.edu

LABB->PhD Program

California State University, Los Angeles 5151 State University Drive, Los Angeles, CA 90032



NIH-Funded CSU Institutional Training Grants and Research Education Programs

Speaker Contacts

Laurie Stepanek, NIH *laurie.stepanek@nih.gov*

Megumi Fuse, San Francisco State fuse@sfsu.edu

Keith A. Trujillo, CSU San Marcos keith@csusm.edu

Judy Brusslan, Cal State Long Beach Judy.Brusslan@csulb.edu

Sonsoles de Lacalle, CSU Channel Islands sonsoles.delacalle@csuci.edu

Robert L. Vellanoweth, Cal State LA vllnwth@calstatela.edu

Frank A. Gomez



NIH-Funded CSU Institutional Training Grants and Research Education Programs



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

Frank A. Gomez

fgomez@calstate.edu



Webcast Feedback Survey

Please take a few moments to tell us about your webcast experience.

Use the QR Scan Code to download it

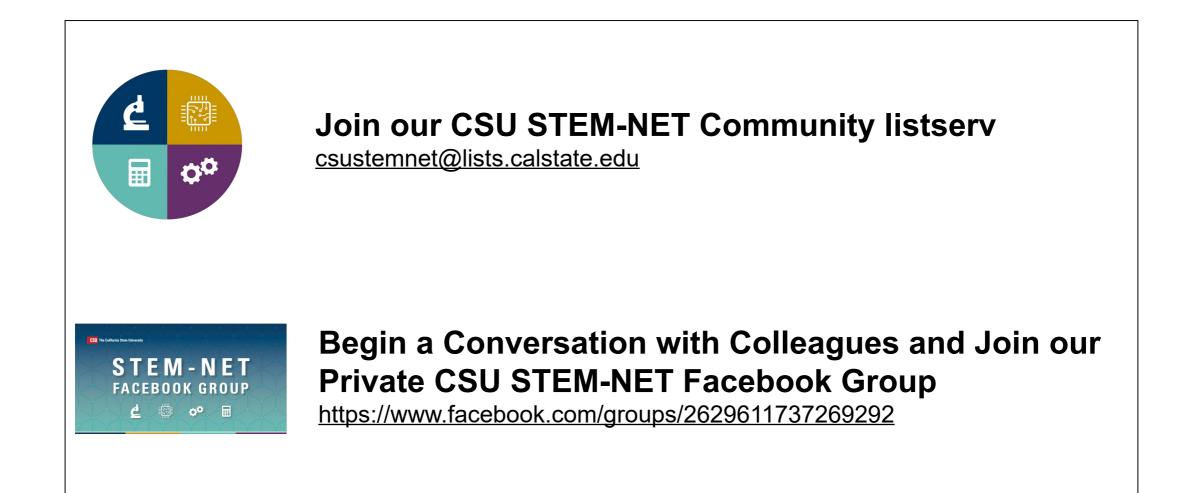








STEM-NET COMMUNITY



fgomez@calstate.edu



STEM-NET Upcoming Events

STEM-NET Virtual Research Café 10.0

October 15 11AM-12PM



Dr. Jorjeta Jetcheva Assistant Professor Department of Computer Engineering San Jose State **Presentation Topic:** Personal Knowledge Assistants



Dr. Tianjun Lu Assistant Professor Department of Earth Science & Geography Cal State Dominguez Hills

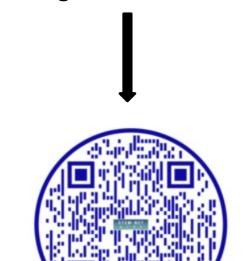
Presentation Topic: Promoting Healthy Communities through Transportation and Environment



Dr. Breanna Putman Assistant Professor Department of Biology Cal State San Bernardino

Presentation Topic:

The New Normal: What makes animals prepared to survive wildfires?



Registration Here



STEM-NET Upcoming Events

Save the Date

STEM-NET November Webcast

• NSF RAPID and EAGER Awardees Webcast, November 4th 10AM- 12PM

Registration Here:





NIH-Funded CSU Institutional Training Grants and Research Education Programs

THANK YOU FOR JOINING US TODAY! For more information about STEM-NET visit our website:

Frank A. Gomez

fgomez@calstate.edu