NSF GRANT SMC

FOSTERING AN EQUITY-MINDED STUDENT SUCCESS CULTURE IN STEM THROUGH FACULTY DEVELOPMENT

GRANT INFORMATION

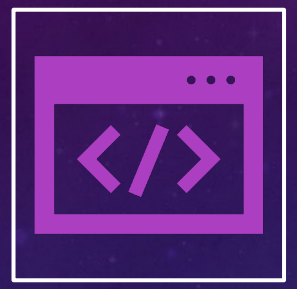
- NSF Award 1928737 is under improving Undergraduate STEM Education: Hispanic Serving Institutions (IUSE:HSI)
- ~ $2.5 million
- 5 Year Cycle – ends in Sept. 2024
- Focus is on STEM Faculty Development in Equity to create student success
- Our goal will be
  - To have various cohorts of equity coaches and STEM participants that complete professional development, develop equity practices the lead to equitable student success, and that these practices get presented institutionally, regionally, and nationally.

STEM SRI GRANT

2011 PIPELINE INITIATIVE IN COLLABORATION W/ UCLA

- Successes: Increases in STEM enrollment & persistence from a student support practice:
  - STEM Skills
  - Counseling
  - Peer Mentors
  - STEM Lab & SI
  - SRI-UCLA/SMC Summer Scholars Research Program
- Gaps: Lower than expected graduation and transfer, low GPAs, failure in Math

IMPORTANCE OF FACULTY PD



Interface most with students.

Meta-analysis of >50,000 research studies found "teacher" (factors: student, home, school, teacher, curricula, teaching) to be the number one determinant of student success (Hattie 2009).

Faculty ethos much larger predictor of student success than student's background (Wood & Harris III 2013).

PRACTICES AND MEASURES OF EFFICACY

- Culturally relevant (and responsive) pedagogy.
- Sense of mattering.
- Affirming and empowering policies.
- Intrusive interventions.
- Authentic care.

- Quantitative, e.g.
  - Grades
  - Retention
- Qualitative, e.g.
  - Focus groups
  - Surveys
  - Reflections

APPROACH

Recruit	Recruit tenure-track or recently-tenured STEM faculty work to create intentionally equity-focused practices in the classroom.
Identify, implement and investigate	Identify, implement and investigate equitable practices that lead to successful outcomes for our Black, Latinx and other underrepresented students in STEM courses.
Promote and Create	Promote and Create a Community of Equity Practitioner within STEM.

GOALS AND OUTCOMES

01

Work with IR & Evaluator using quantitative and qualitative methods to **measure success in professional development activities.**

02

Foster and strengthen an **equity-minded student success culture** across STEM disciplines.

03

Develop culturally responsive strategies to increase sense of **belonging and community** for Black and Latinx students.

04

Increase no. of students **completing** STEM degrees, **transferring** to a baccalaureate program, and/or entering the **workforce**.

05

Reduce equity gaps in student success for students of color, esp. Black and Latinx students.

PROCESS

Train

Faculty equity training.

Develop

Faculty develop equity-minded approaches and practices.

Implement

Establish equity practices to implement in fall semester.

PROFESSIONAL DEVELOPMENT

Coaches

Provide training to participants; serve as equity mentors.

Present on equity practices.

Consultants

CORA and Allied Path: Equity conversations with participants.

STEM Student Alumni Panel.

Conferences

AAC&U: Diversity, Equity, and Student Success Conference.

NCORE: National Conference on Race and Ethnicity.

Courses

CORA: Teaching Men of Color in the Community College.

Grading for Equity.

CORA: Antiracism Course Design.

Reflections

Written reflections on equity training and approaches; and one-on-one meeting with coaches.

NSF TEAM

COHORT 1

- Earth Science
  - Jing Liu
- Life Science
  - Andria Denmon
  - Chris Grant
  - Sandra Hutchinson
- Math
  - Hafedh Herichi
  - Novita Phua
- Physical Science
  - Forouzan Faridian
  - Kyle Strohmaier
  - Travis Pecorelli*

COHORT 2

- Earth Science
  - Christyanne Melendez
- Life Science
  - Sue Lee
  - Duc Pham
  - Poliana Raymer
- Math
  - Matt Musselman
- Physical Science
  - Tim Dong
  - Jennifer Hsieh

COACHES

- Earth Science
  - Ciarán Brewster (PI)
  - Lisa Collins
- Math
  - Kristin Lui-Martinez (Co-PI)
  - Jamar London
  - John Quevedo
- Physical Science
  - Tram Dang (Co-PI)

NSF DATA

NSF PARTICIPANT GRANT FEEDBACK:

- “I think we all already came in thinking that equity was important, but I don't know how many of us couldn't really talk about it in any sort of meaningful way, other than “We've got these gaps in student success that we need to close--that's equity.” [The Project has] given me more ways to think about it, and it's given me a chance to learn how to better articulate my thoughts on equity.”
- “I think among faculty that are resistant to it. There are some weird, preconceived notions about what equity work is. This project has helped me to get to a place where I can talk more effectively about what it is, and what it is not. The other thing that I like is that I've learned that some of the things that I actually already do are equity practices.”

FEEDBACK ON EQUITY PRACTICES PRESENTATION:

Colleagues:

"I like how intentional you are about supporting students of color in your classes and connecting them to resources on campus. It's also great how you are planning to continue your equity journey and work outside of the classroom. We all benefit from your perspective!"

Students:

"I am in love with the level and beauty of organization Professor [Y] demonstrated. Her attention to detail as she expressed the thought processes that she undertook for different equity-based practices is amazing."

" I've always appreciated professors that made an effort to understand my unique situation and communicate to figure out how we can best meet each other's needs. Also, I appreciate the idea of using a diverse group of pictures on the Canvas homepage. It will be a reminder to the students every time they login that they belong."

STUDENT ENGAGEMENT SURVEY

	Whole Sample	Whole Sample	Black	Black	Latinx	Latinx	Asian	Asian	White	White
Student Engagement Factor	**#**	**Mean**	**#**	**Mean**	**#**	**Mean**	**#**	**Mean**	**#**	**Mean**
Caring, Mattering, Affirming	279	4.58	20	4.44	96	4.59	74	4.63	96	4.56
Sense of Classroom Community	278	4.38	20	4.13	95	4.46	74	4.34	95	4.42
Culturally Relevant Curriculum	275	3.88	20	3.69	93	3.98	75	3.75	94	3.91

WHAT DO YOU FEEL HAS HELPED YOU LEARN IN THIS COURSE AND/OR MADE YOUR CLASS EXPERIENCE ENJOYABLE?

Honestly, the instructor. Professor [X] is kind and patient and easy to talk with. [They] makes time for everyone and makes the best use of our online tools by making conversation and classroom discourse easily accessible." – Latinx student

"I love that professor [X] has always been flexible and I am always able to reach out to [them]. – Latinx student

"The teacher for sure has made this experience very enjoyable." --Black student

STUDENTS MENTION SENSE OF CLASSROOM COMMUNITY WHEN ASKED WHAT HAS BEEN HELPFUL/ENJOYABLE CLASS EXPERIENCE

"What has made this class experience enjoyable is how everyone has a safe space to communicate and not feel judged. Also, that we can joke around while also learning." – African American Student

"The lab breakout groups our professor puts us in have been very enjoyable as well as the labs, itself, have helped me learn material in much more depth." – Latinx Student

IMPROVEMENTS BASED ON FEEDBACK

LATINX STUDENTS WHO WANTED MORE COMMUNITY BUILDING/PEER LEARNING DURING CLASS….

"Probably interacting more with classmates on a weekly since it is an online class, maybe get into groups that way it feels more interactive."

"More group work would be great, and reviewing the worksheets together as a class so that way we are all on the same page."

THANK YOU

- Edna Chavarry, Melanie Bocanegra, Laurie McQuay-Peninger.
- President Dr. Kathryn Jeffery, Vice-President Bradley Lane, Dean Maria Muñoz, and Dean of Academic Affairs Jason Beardsley.
- SMC Board of Trustees.
- Human Resources and STEM Chairs.
- Tim Nguyen and SMC Institutional Research.
- National Science Foundation-Division of Improving Undergraduate STEM Education for HSI's
- STEM Faculty participants.
- **SMC Students!**

QUESTIONS?