Building on
STEM Success to ASPIRE

Developing HSI Grant Proposals at Stanislaus State

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California State University, Stanislaus

Overview

- About Stanislaus State
- Developing ASPIRE
- Important tips
- Your turn!

Special thanks!

- Elizabeth Monroe and Missy Lebray
- US Department of Education Title III Part F awards
  - P031C210159 (2021-2026)
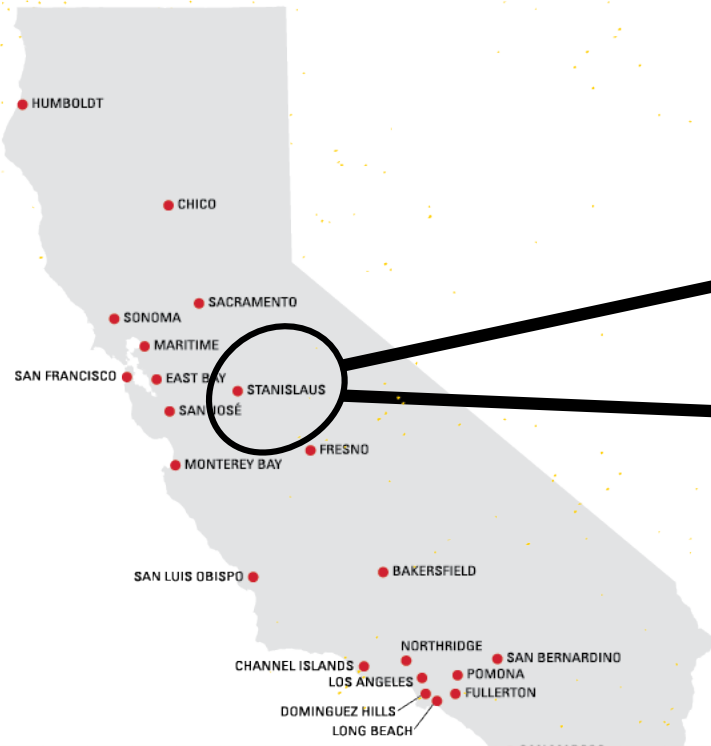 - P031C160070 (2016-2021)
  - P031C110082 (2011-2016)

HSI-STEM grants
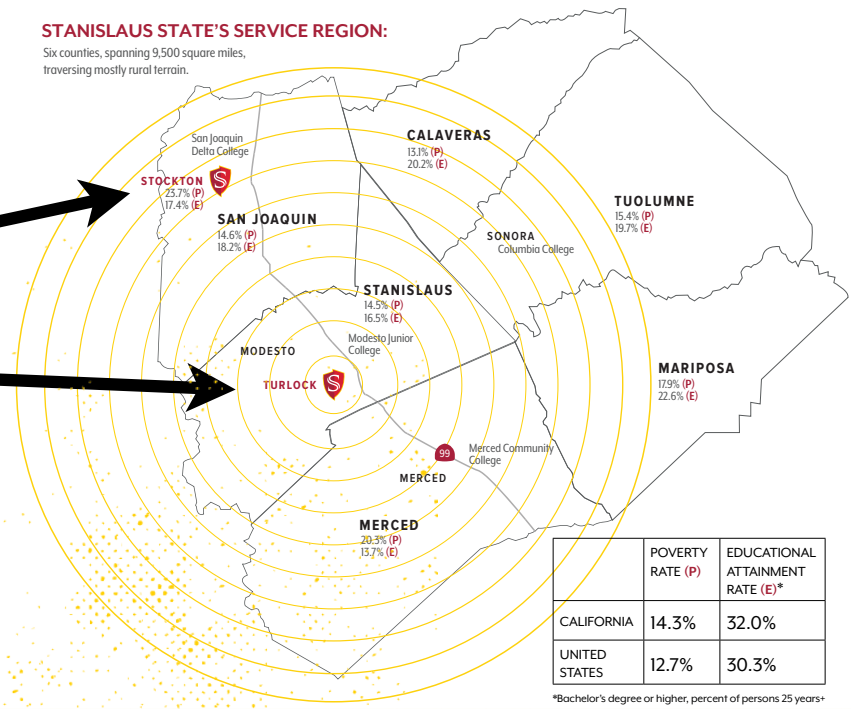
About Stanislaus State

Campuses

**Poverty rate higher, educational attainment lower than California and US averages**

California campuses map with labeled campuses: HUMBOLDT, CHICO, SACRAMENTO, SONOMA, MARITIME, SAN FRANCISCO, EAST BAY, STANISLAUS, SAN JOSÉ, MONTEREY BAY, FRESNO, SAN LUIS OBISPO, BAKERSFIELD, CHANNEL ISLANDS, NORTHRIDGE, LOS ANGELES, DOMINGUEZ HILLS, LONG BEACH, POMONA, FULLERTON, SAN BERNARDINO

STANISLAUS STATE'S SERVICE REGION:
Six counties, spanning 9,500 square miles, traversing mostly rural terrain.

San Joaquin Delta College

STOCKTON
23.7% (P)
17.4% (E)

CALAVERAS
13.1% (P)
20.2% (E)

TUOLUMNE
15.4% (P)
19.7% (E)

SAN JOAQUIN
14.6% (P)
18.2% (E)

SONORA
Columbia College

STANISLAUS
14.5% (P)
16.5% (E)

Modesto Junior College

MODESTO

MARIPOSA
17.9% (P)
22.6% (E)

TURLOCK

Merced Community College

99

MERCED

MERCED
20.3% (P)
13.7% (E)

	POVERTY RATE (P)	EDUCATIONAL ATTAINMENT RATE (E)*
CALIFORNIA	14.3%	32.0%
UNITED STATES	12.7%	30.3%

*Bachelor's degree or higher, percent of persons 25 years+

Students

- 9,199 undergrads (Fall 2021)
  - 58% Hispanic
  - 60% Pell-eligible
  - 73% first generation
  - 68% female
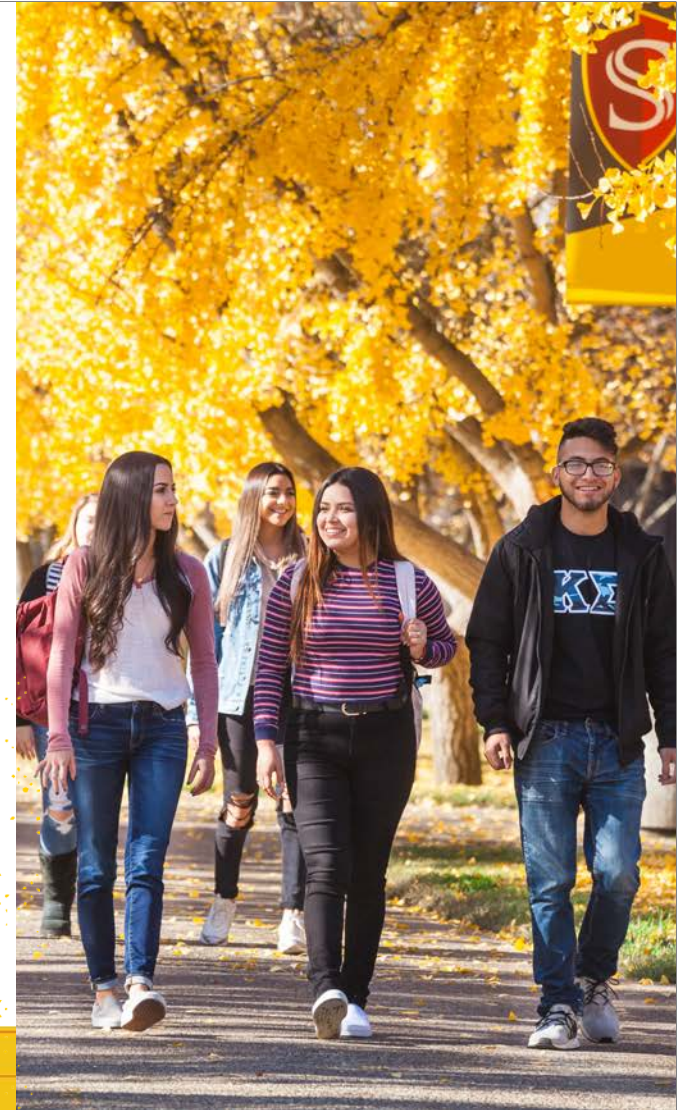
Developing ASPIRE

Proposals

- ✔ 2011: Title III Part F ("CVMSA")
- ✔ 2016: Title III Part F ("STEM Success")
- ✘ 2019: Title V Part B (PPOHA)
- ✘ 2020: Title V Part A (DHSI)
- ✔ 2021: Title III Part F ("ASPIRE")

Proposals

✔ 2011: Title III Part F ("CVMSA")
✔ 2016: Title III Part F ("STEM Success")

✔ 2021: Title III Part F ("ASPIRE")

HSI-STEM grants

HSI-STEM grants

- Main goal is to increase students graduating in STEM

- Primarily serve historically underrepresented groups
  - Ethnic/racial minorities (e.g., Hispanic students)
  - Economically disadvantaged
  - First in family to attend college
  - Female (some STEM majors)
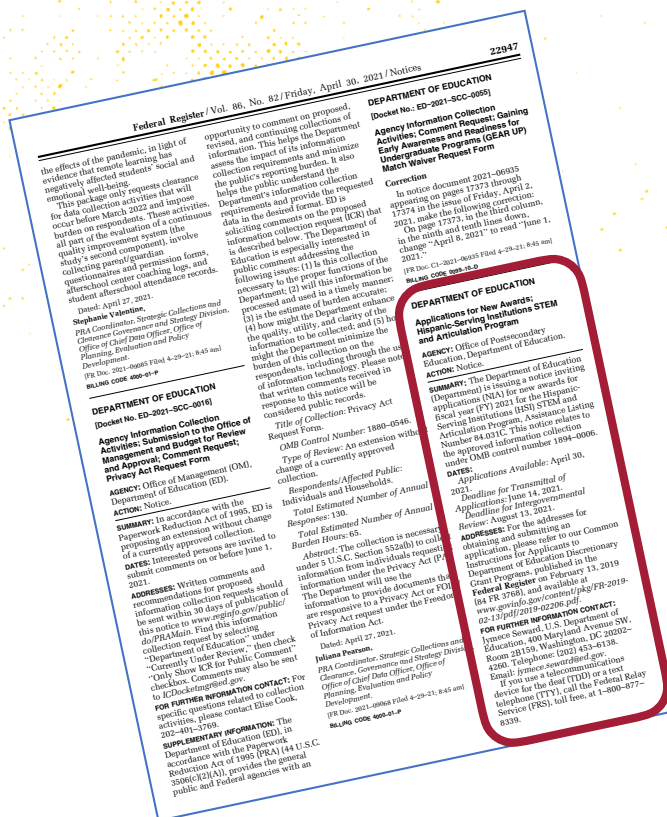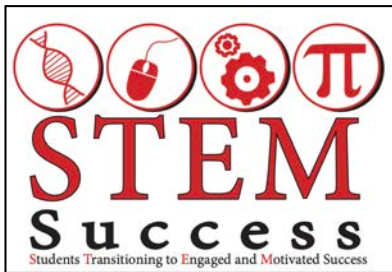
CVMSA ➡ STEM Success ➡ ASPIRE

2011

- Articulation for transfer students

- Faculty mentors

- Campus resource center for STEM

2016

- Articulation for transfer students

- Faculty research

- Summer academy for incoming STEM majors

2021

- Articulation and outreach for transfers

- Peer mentors

- Career preparation resources

- Mental health services

Central Valley Math & Science Alliance

California State University, Stanislaus

STEM Success
Students Transitioning to Engaged and Motivated Success

ASPIRE
Accelerated STEM Pathways Through Internships, Research, and Engagement

Articulation

- 2011: Developed roadmaps for STEM majors with 3 community colleges

- 2016: Expanded roadmaps to 10 community colleges; added professional development for articulation personnel

- 2021: Began outreach to students entering STEM at 3 community colleges

Mentoring

- 2011: Faculty mentor students (e.g., take to lunch)

- 2016: Students collaborate on faculty research; small number of peers assist in STEM academy

- 2021: Pair every incoming STEM major with a peer mentor
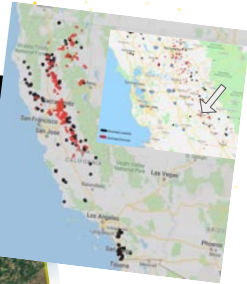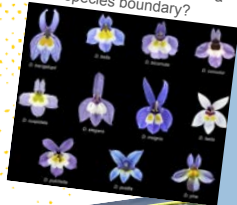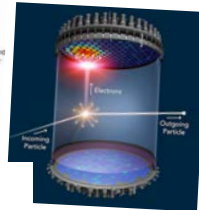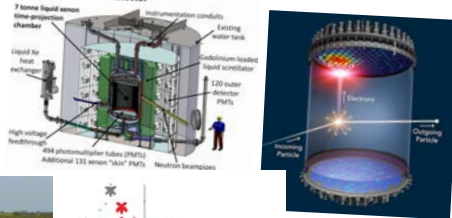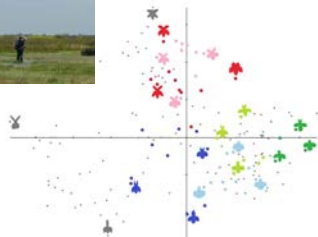
Resources

- 2011: Campus space for STEM majors, including peers
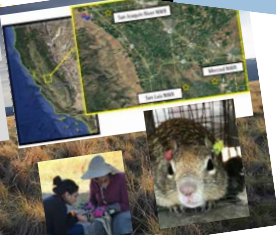
- 2016: Summer STEM academy for incoming students

- 2021: Paid internship opportunities and professional preparation experiences

Process

- Chem lowered my self-esteem
- The biology classes were too hard
- I left biology because being a doctor was my parents dream
- I felt stupid in every science class
- I just felt out of place. Like it wasn't meant for me
- Biology was … taking a toll on my mental health

- Continuously gathered data to learn what worked and identify gaps
- Studied why students leave STEM
- Learned from others (e.g., AHSIE)
- Targeted belonging and other psychosocial skills critical to academic success
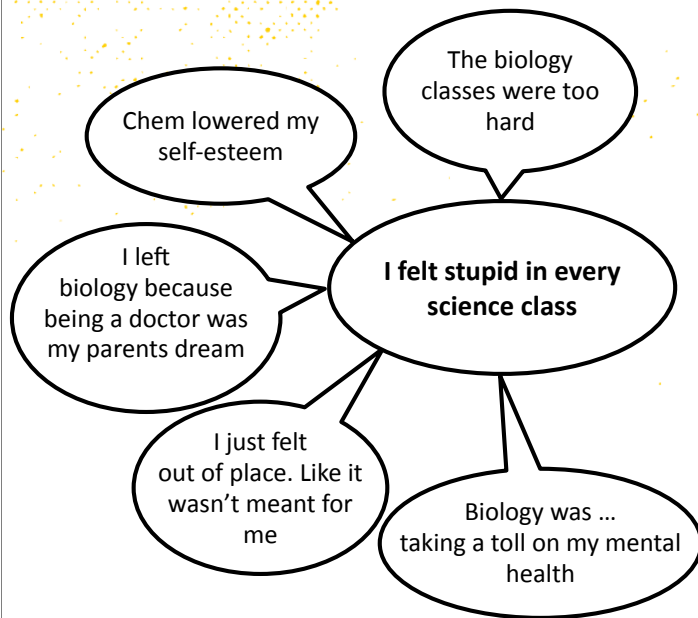
Model of change

Problem	Inter-vention	Inputs (resources)	Outputs (activities)	Outcomes	
				Short term	**Long term**
Sense of belonging is low in many Hispanic STEM majors	Provide a peer mentor for NSCI 1000 students	Hire and train a peer mentor	Peer mentor attends all classes and holds office hours	Improve sense of belonging	Increase number of Hispanics who remain in STEM majors

- 2011: Build a campus STEM community

- 2016: Focus on belonging and other psychosocial skills

- 2021: Continue focus on belonging; link education to career aspirations

Fit with other programs

- NSF HSI grant focusing on culturally-sensitive pedagogy
- NSF HSI collaborative grant (with Fresno State and CSU Bakersfield) focusing on innovative curriculum
- ASPIRE focuses primarily on co-curricular student needs

Important tips

Start now!

- Maintain a list of program ideas
- Launch low-cost pilot studies
- Identify data needs and build new capacity as needed
- Register studies with the What Works Clearinghouse

Be data-driven

- Learn from your students
  - Study who succeeds, who doesn't, and why
  - Use existing resources (e.g., IPEDS, NSSE)
  - Build your own data sources
- Highlight data analysis in your proposal
  - Include a data analyst in your budget
  - Describe process for learning from your data

Why did you pick your new major?
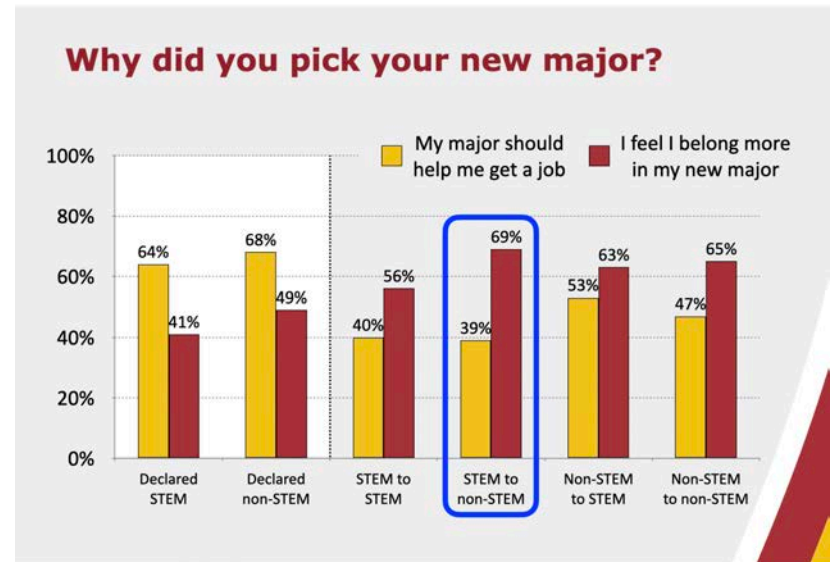
2009 First-Time Freshmen Who Entered as STEM Majors
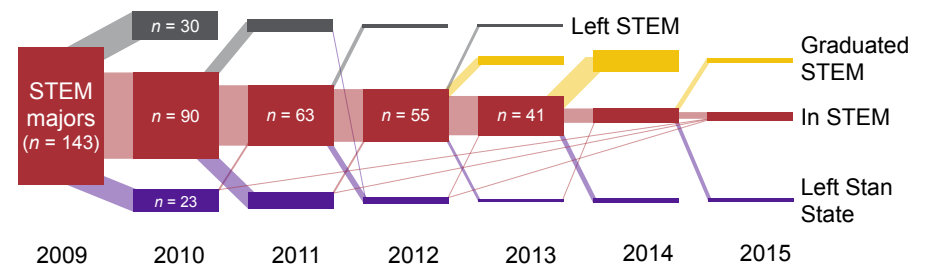
Bring your A-team

- You need a **team**
- Break out of traditional silos
- Give voice to key stakeholders
- Include allies needed for sustainability after the grant ends
- Solicit student feedback

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Honor priorities

- You **must** respond to priorities
  - 2020 DHSI cutoff = 106.33 (out of 100)
- Apply only if RFP priorities = institutional priorities
  - Don't divert resources from programs you love to programs you don't
  - After the grant ends, programs will end if they don't align with institutional priorities

University Strategic Plan 2017-2025
California State University, Stanislaus:
A Sense of Place, Inclusion, Transformation and Future

Learn from rejection

- What can your **unfunded** proposals teach you?
  - Were your ideas vague? Did they lack focus?
  - Can your logic model be strengthened?
  - Were there issues with your budget?

- What can your **unsubmitted** proposals teach you?
  - Whose support did you lack?
  - What resources did you need?
  - Can your proposal workflow be improved?

125 5 STAGES OF REJECTION

1 DENIAL "There is no way this paper could have been rejected. Clearly the editor made a mistake and sent me the wrong decision email."

2 ANGER "I am going to fight this. The reviewers do not know what they are talking about. The editor should know better. I am going to write a strongly worded email to the editor giving them a piece of my mind!"

3 BARGAINING "I am going to offer the editor something so they will overturn their decision—that is, agree to write a review, referee more papers, and so on."

4 DEPRESSION "The paper will make or break my career. Since it was rejected, clearly my ideas are all wrong."

5 ACCEPTANCE "I'm sure they had good reasons for rejecting my paper."

"Editors at *Inorganic Chemistry* not only handle hundreds of papers per year, but also are active research scientists who submit manuscripts themselves. **Each one of us has experienced these five stages when our own papers have been rejected. We understand.**"
— P. Shiv Halasyamani, Associate Editor / William B. Tolman, Editor-in-Chief

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Learn from others

- Build your knowledge base
  - Search the literature; attend conferences
  - What works at other institutions with similar students and needs?
  - What **doesn't** work? Can you fix it?

- Study the Clearinghouse
  - Be creative when searching

- Study previous awards
  - Abstracts are posted for all awardees

Get real

- Don't promise too much
  - Can you describe your proposal in an elevator pitch?
  - Can your institution fully implement the proposed activities?
  - Are your outcome targets attainable?

Your turn!

- Who's your A-team?
  - Whose participation is critical?
- What are your priorities?
  - Does your proposal align with your strategic plan?
  - What are your students' most urgent needs?
- What data do you need?
  - What are your existing data sources?
  - Are new sources needed?
- What will you propose?
  - What programs and services would you like to see?
  - How will you engage students?
  - How will you know if the program works?

Thank you!

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