Empowering the Transfer Experience for STEM Students from Low-income Households

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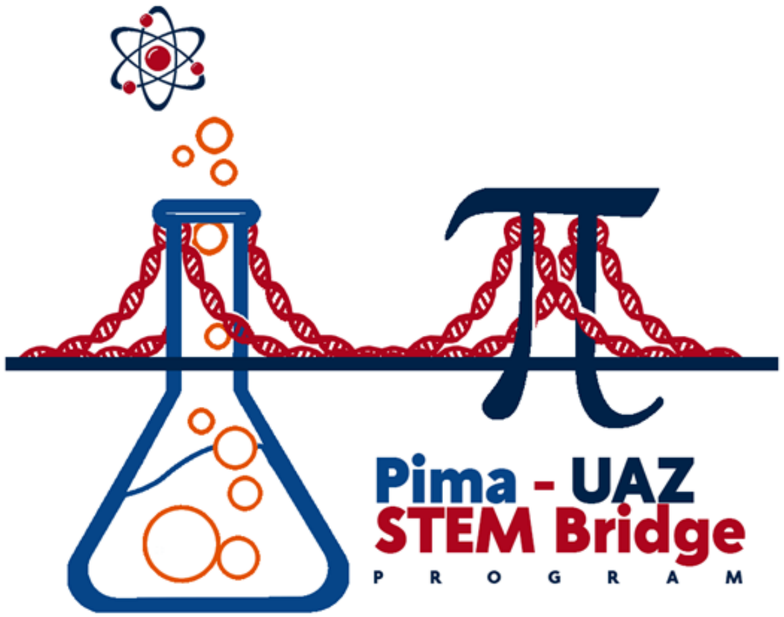

Pima Community College

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ASEMS
ARIZONA'S SCIENCE, ENGINEERING, AND MATH SCHOLARS PROGRAM

June 3, 2025
AZ HSI Consortium Webinar

We respectfully acknowledge the University of Arizona is on the land and territories of Indigenous peoples. Today, Arizona is home to 22 federally recognized tribes, with Tucson being home to the O’odham and the Yaqui. The university strives to build sustainable relationships with sovereign Native Nations and Indigenous communities through education offerings, partnerships, and community service.

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Please share in the chat:

What strengths do community college transfer students bring with them on their educational journey?

Overview

- Who are Community College STEM Transfer Students?
- Pima-UAZ STEM Bridge Program Overview
- Highlight of Transfer Challenges
- Scholar Recommendations

National Data on STEM Community College Students

- First-generation
  - 68% at community colleges
  - 38% at four-year universities
- Tend to be older
  - 28% at community colleges are 22 years and older
  - 4% at four-year universities are 22 years and older
- Working learners
  - 76% at community colleges
  - 55% at four-year universities
- Disproportionately racial and ethnic minoritized identities from low-income households

Schinske, J. (2022); Velasco et al., (2024); Jenkins & Fink (2016)

Understanding the Transfer Landscape

- Only 16% of community college transfer students **complete a bachelor's degree within six years** –rates are even lower for Black (9%), Hispanic (13%), low-income (11%), and adult learners (6%) (Velasco et al., 2024).
- Transfer pathways are **critical for social mobility,** but transfer rates remain low.
- STEM Fields have **historically excluded** underrepresented and minoritized students.
- **"Transfer shock"** can result in lower persistence rates for minoritized students.

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What?

- NSF-funded $4.8 million S-STEM grant for 5 years
- Pathway program designed to support academically talented and low income student

Who?

- Over 90 students transferring from Pima Community College into University of Arizona to pursue STEM (Science, Math, Engineering, Technology) degrees
  - 3 cohorts over 3 years

How?

- Scholarships, Academic guidance, Transfer Support, Research Opportunities, Culturally Responsive Mentorship
- 2 STEM Faculty Mentors (1 from Pima; 1 from U of A) were assigned to each student

Pima UAZ STEM Bridge Student Demographics

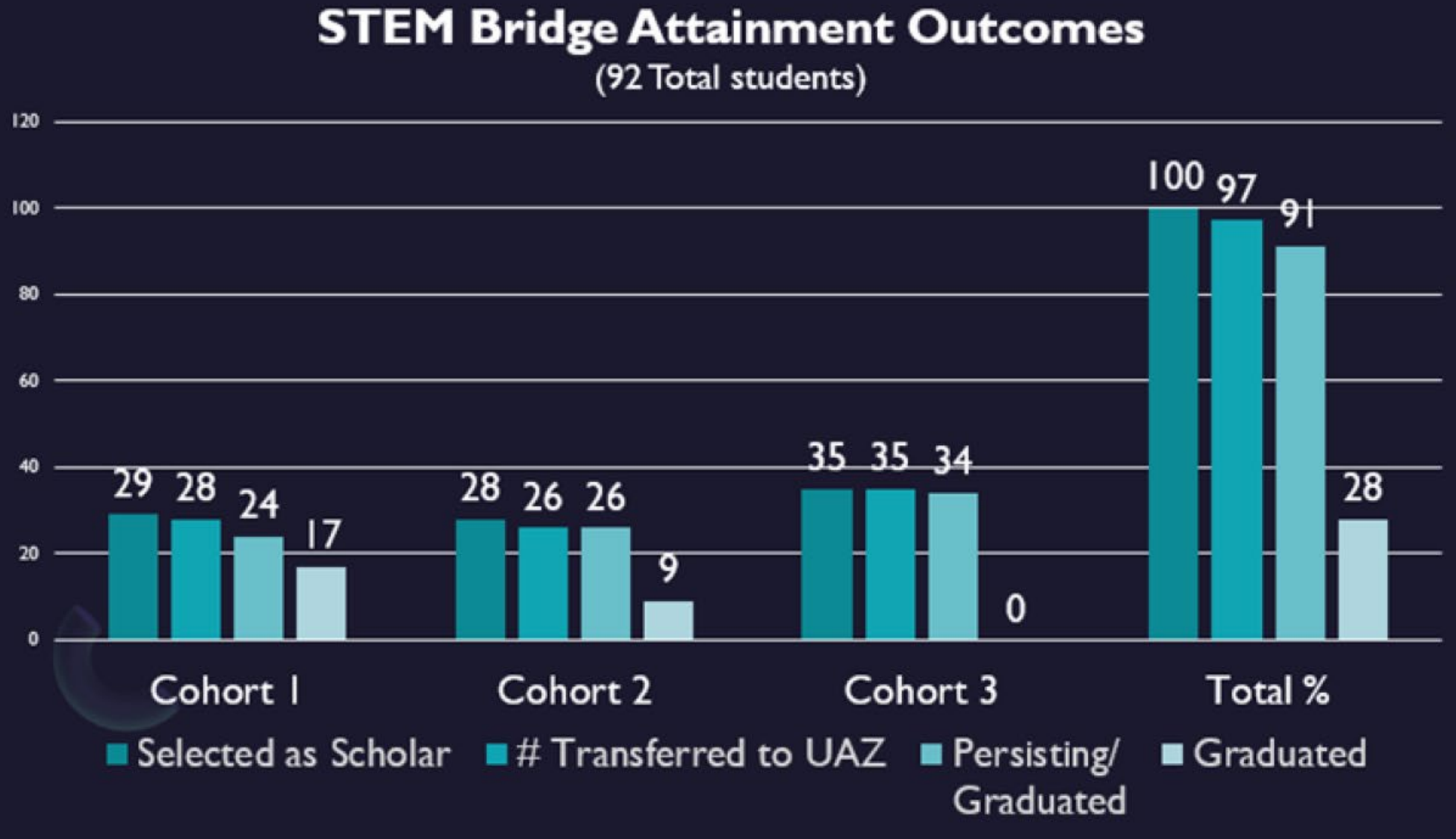
- 100% From low-income households (93)
- 63% First-generation college students (58)
- 52% Underrepresented in STEM (48)
- 46% Hispanic Identifying (42)
- 46% Women Identifying (41) /Non-Binary (1)

Of the Hispanic Students (42)

- 74% First-generation (31)
- 49% Women Identifying (20)

The vast majority are post traditional, many are returning adults with family responsibilities, 8.6% were veterans

Persistence and Graduation



- **97% Transferred** from PCC to UAZ
- **91% Persisted** in STEM

Evidence of Success

1 in 10 students nationally who begin at a community college complete a bachelor's degree in STEM

9 in 10 STEM Bridge students are persisting or have already completed a bachelor's degree in STEM

STUDENT TESTIMONIALS

"I wouldn't be here without this scholarship…because I am older, I am a nontraditional student, I have two kids, and we rely on one income."

- Student Graduate, B.S. Engineering

"I think I am seriously considering Graduate school where I wasn't considering it before."

- Student Graduate, B.S. Biochemistry

"I honestly, from like the deepest part of me, I think I would have dropped out and not finished the program if it wasn't for STEM Bridge."

- Student Graduate, B.S. Geosciences

In your opinion, what is the biggest challenge for community college students transferring into STEM majors and completing university STEM degrees?

https://www.menti.com

Use code 3501 5951

Join at menti.com | use code 1985 4333

Mentimeter

In your opinion, what is the **biggest challenge** for community college students *transferring* into STEM majors and *completing* university STEM degrees?

All responses to your question will be shown here

Each response can be up to 200 characters long

Turn on voting to let participants vote for their favorites

KS

Menti

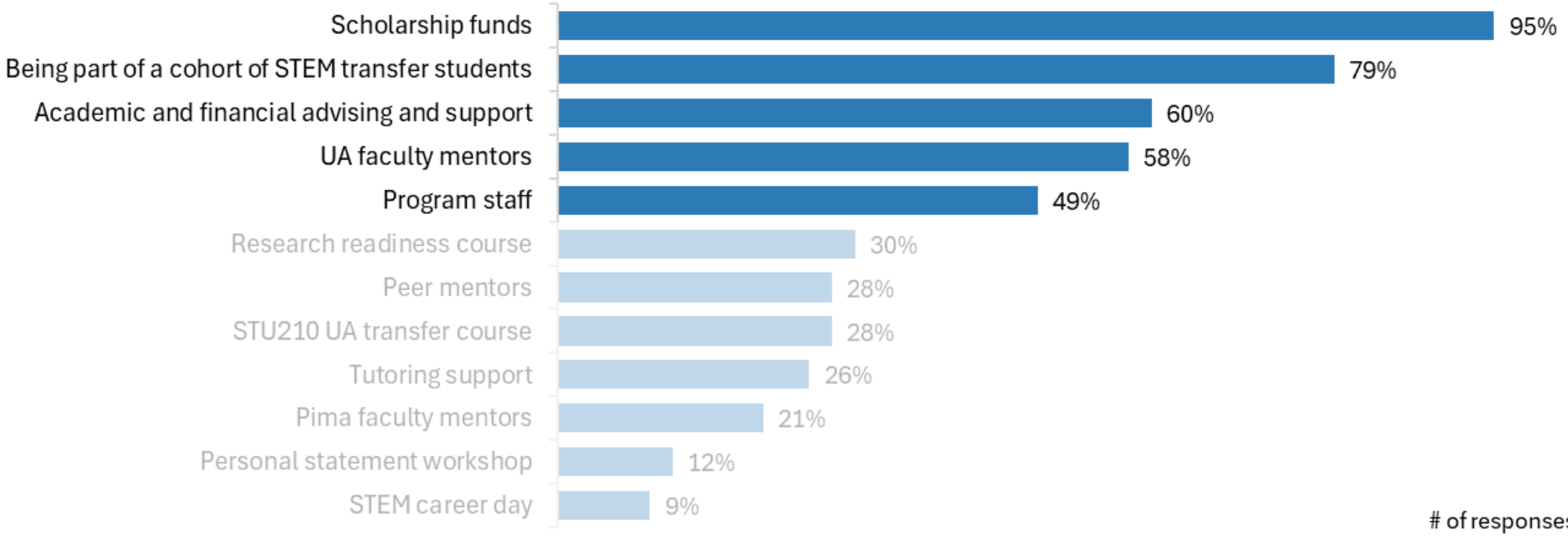
AZ HSI Webinar - Empo...

Choose a slide to present

Challenges & Recommendations

Participants were asked about the most valuable components of Pima-UAZ STEM Bridge and ASEMS.

Select the **top 5 most valuable Pima-UAZ STEM Bridge** program components



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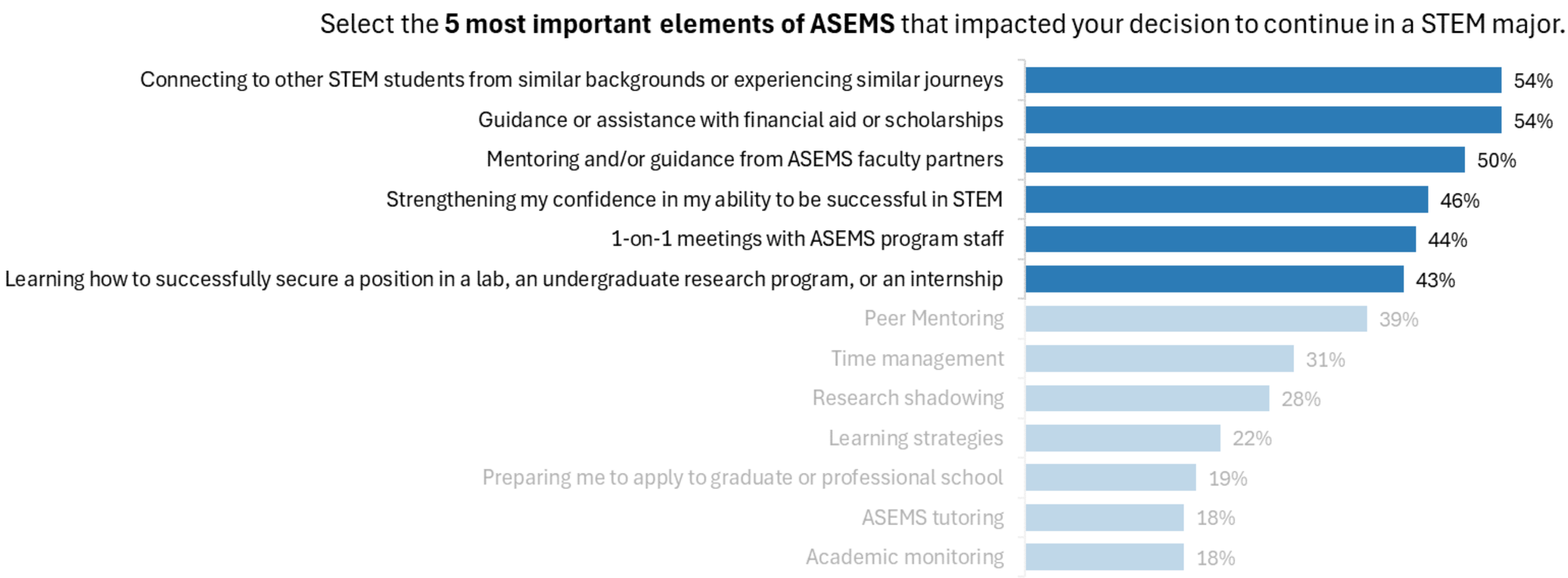
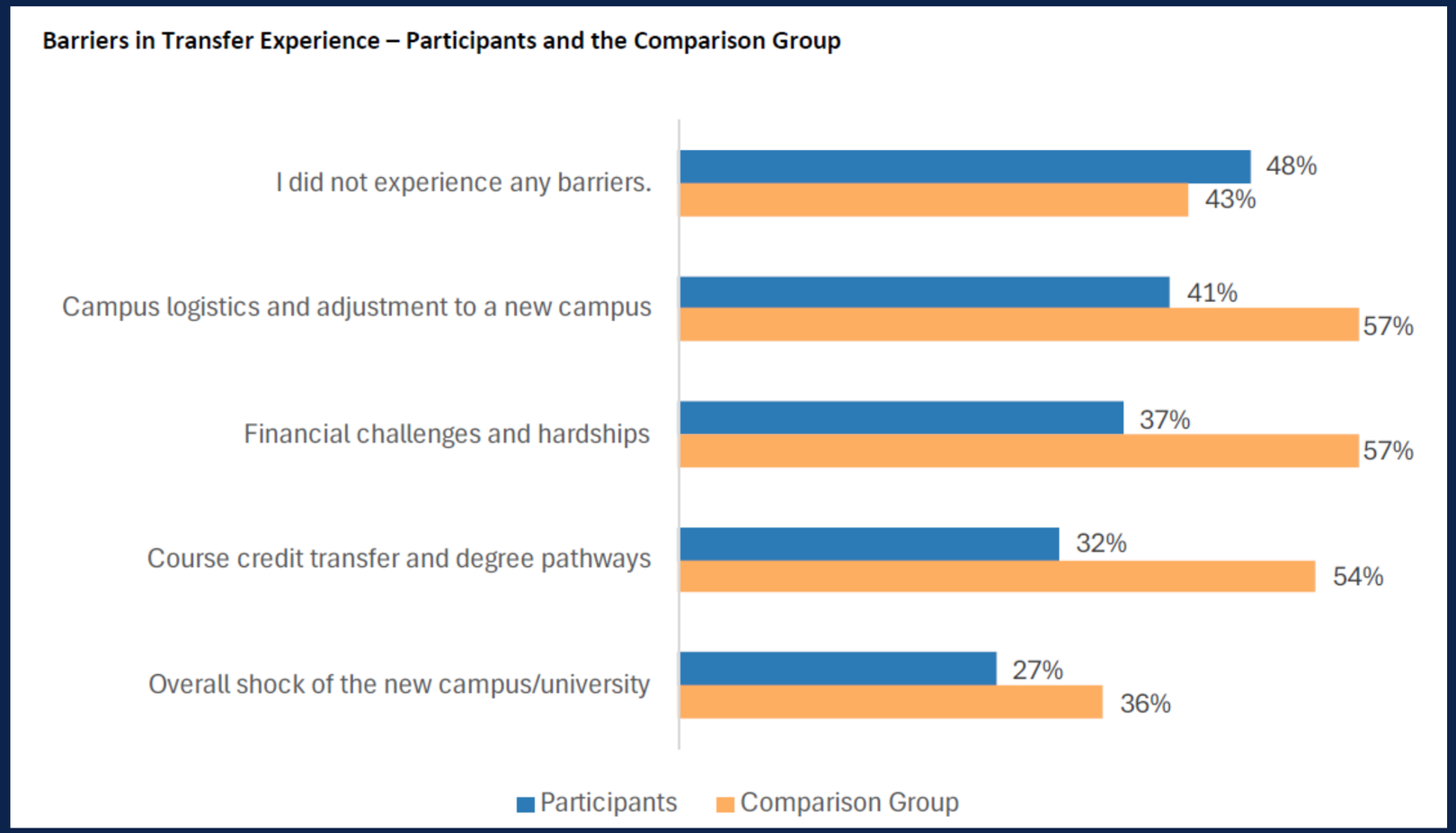
Participants were asked about the most important elements of Pima-UAZ STEM Bridge and ASEMS.



Transfer Challenges reported in student focus groups conducted upon transfer to the University of Arizona

Survey Data



Focus Group Data

- Credit transfer
- Financial hurdles
- Time management
- Course scheduling
- Course expectations

Transfer Challenges reported in student focus groups conducted upon transfer to the University of Arizona

Credit transfer

- Getting Pima credits to count for pre-requisite UA courses and towards Advanced Standing
- Limit of hours that can transfer – addressed

Financial hurdles

- Parking
- Unexpected UA fees
- Getting Expected Family Contribution changed
- Cost of Attendance limiting financial awards

Transfer Challenges reported in student focus groups conducted upon transfer to the University of Arizona

Time management

- Heavy course load
- Heavy study load
- Balancing home responsibilities, work, school, internship

Course scheduling

- Inability to stack classes
- Limited availability of and slots for requisite courses

Course expectations

- Expected to learn material on own
- Feeling rushed on 50-minute exams.

Student Recommendations Reported in Post-Transfer and Graduating Student Focus Groups

Support community building

- In-person social events in advance of transfer and for non-traditional age undergraduate students.

Offer flexible options for optimizing course schedules

- More class times/sections across and within semesters, and virtual options.

Offer more extracurricular learning support

- Recitation classes, resource books by major, 24/7 library, and tutoring for upper division courses.

Financial support

- Cheaper healthy on-campus food options, lower tuition, design affordable housing options, create affordable parking options, maintain food pantry.

Student Recommendations Reported in Post-Transfer and Graduating Student Focus Groups

Improve advising support for transfer needs

- Actively **update community college advisors** on changes to colleges' program of study and what students should take in advance of transfer
  - **Broadcast** information on changes to students' program of study
- Have **transfer specific advisors** in colleges
- Prep students for how **academic expectations** will change upon transfer
- Broadcast and support students in **finding scholarship** opportunities
- Provide a **practical campus tour** that contains information about where classes are and where to eat/park

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Student Recommendations Reported in Post-Transfer and Graduating Student Focus Groups

Improve faculty and teaching support

- Encourage faculty to **care for and support students**
- Offer **institutional training** for teaching assistants
- **Assess faculty** for teaching competency
- Implement **accountability measures** to improve teaching
- Improve **clarity and consistency of syllabi**
- Offer **pre-recorded lectures** and/or recorded lectures post-lecture
- Implement **student feedback**

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Discussion

T H A N K Y O U

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Program Website:
https://stembridge.arizona.edu/

Donate to Pima CC STEM Bridge Transfer

Donate to UofA STEM Bridge Transfer

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Program Objectives

Objective 1: Increase student sense of belonging by creating a welcoming environment through a bridged PCC–UA learning community and culturally responsive mentoring.

Objective 2: Improve academic achievement at UA by providing individualized support and academic and financial guidance.

Objective 3: Increase interest in STEM careers through early career planning and engagement in relevant experiential learning opportunities.

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Evidence Based Practices

Asset-Based Mentoring & Support

Student Support Specialist

UA & PCC Faculty Peer Mentor

UA Peer Mentor Pre & Post- Transfer

Pre & Post Transfer Learning Communities

STU210 UAZ Transition Course

(last semester PCC)

Integration into ASEMS program

ASEMS courses with students from similar backgrounds

SCI297B Research Readiness Course (1st semester UAZ)

Advisory Board with Vested Interest

Financial Aid

Student Affairs

Enrollment (transfer)

HIS Offices

Leadership from STEM Colleges

Culturally Responsive Community of Practice

15-hour initial training

Monthly mentor meetings

Continuous reflection and professional development on culturally responsive mentor training