2019 Focus Group Study Report

California State University, Northridge
College of Engineering and Computer Science
Attract, Inspire, Mentor and Support Students (**AIMS^2**)
HSI STEM GRANT PROJECT

RESEARCH QUESTIONS

1. How does student-faculty and peer-peer interaction influence research skill and career development of Latinx and low-income first-time community college and university student and community college transfer students in engineering and computer science fields?
2. How do family and peers shape the academic and social experiences of Latinx and low-income first-time community college and university student and community college transfer students in engineering and computer science fields?

Purpose of Focus Groups

- Explore AIMS^2 student participant experiences
- Examine the relationship between participation in peer and faculty mentoring and career/research skills development and social/academic transitions

Research Design & Methods

Research Design:

Qualitative Case Study

- To glean information about a larger phenomenon
- Used a sample from the population of students enlisted in the program

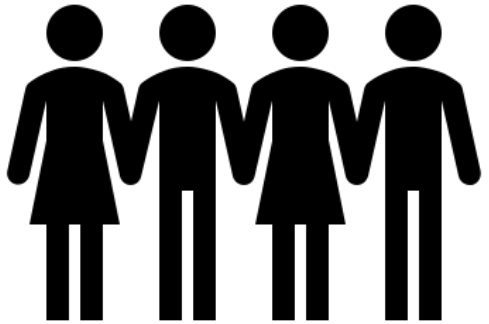
Research Design & Methods

Data Sources and Sample:

- Mixed Sampling Strategy
  - Criterion & Network Sampling
- Three Focus Groups
  - Moorpark College (6 participants)
  - CSUN (3 participants)
  - College of the Canyons (7 participants)

Participants

- Gender: 11 (69%) male and 5 (31%) female
- Ethnicity: 10 (63%) Hispanic, 2 (13%) Caucasian, 1 (6%) African American, 1 (6%) Armenian, 1 (6%) Egyptian, 1 (6%) Middle Eastern
- Major:
  - 5 (31%) mechanical engineering
  - 3 (19%) computer science
  - 3 (19%) electrical engineering
  - 2 (13%) civil engineering
  - 1 (6%) biomedical engineering
  - 1 (6%) in environmental engineering
  - 1 (6%) manufacturing systems engineering and management



Research Design & Methods

Data Collection:

Instruments

- Participant List
- Informed Consent Form
- Focus Group Protocol

Research Design & Methods

Data Analysis:

- Digitally recorded and transcribed interviews
- Imported transcripts into ATLAS.ti
- Performed a preliminary exploratory analysis
- Used an inter-rater analytical strategy by creating codes, links between the codes, and identified a set of preliminary themes in segmented data
- Concluded with six main thematic categories and multiple sub-thematic categories that led to the formation of conclusions from the data

Preview of Thematic Patterns

1) College transition as adapting to campus communities
2) Meaningful interaction–and outcomes–among faculty and peers
3) Preparing for careers and overcoming barriers
4) Feeling welcome in the program and the pressure for female students to succeed
5) Resiliency and achievement of academic goals
6) Navigating through college with the support from family

College transition as adapting to campus communities

For some students, adapting to a college campus environment seemed to be a challenge.

I "felt it was **kind of difficult to adapt** to college life."

"… I used to go to a community college before, and…here at the university… **you see that people are more focused and wanting to learn…. I feel like it just helps me stay more focused in wanting to finish school**… I think going to junior college first helped a lot with… education in general. And then… **coming to the university after really helped me like stay focused**."

"College students have this mentality that professor is the one who has to teach everything and if the professor is bad, and if they fail they blame it on the professor. But the **research has taught me** that it doesn't matter what or who the professor is. **If somebody wants to learn, they can go and learn**, regardless of, yeah, you get the, get the good grades."

College transition as adapting to campus communities

"…**here** I have people who are of similar intellectual level **while in my workspace**, I work with people who barely have any education."

"I'm **very conscious** of how I interact with people and um I also tend to stick to the people … that do share the same interests as me just cause it is easier…"

Meaningful interaction–and outcomes–among faculty

It appears that the faculty mentors play a meaningful role—a significant part—in the what participants framed as their success as students. From general support to academic advising and mentoring guidance, contact with faculty seemed to constructively shape experiences…

"If it wasn't for the faculty members we wouldn't be where we are. And they, **they show the most support for us.**"

What participants said about faculty mentors…

"He always wants to check up on us on what we are doing or how our classes are going. So that, **that pushes me to do better**."

"He'll give us advice on what to do, like going to tutors and talking to other students and stuff that, at that same course. **He's really helped a lot**."

"This one last semester I was struggling in a class, and we have tutors that provide tutoring for us, and they didn't have a tutor for that specific class, and **he went out and searched for a tutor just for that class for me. So that's something**."

"Uh, usually computer science people graduate within three years when they transfer here. But, because of my mentor, which is part of this program, uh, and I was able to cut down a whole year. So, I'm graduating in two years instead of three years… Uh, as I said, **he's the reason I'm graduating one year earlier**. So, I, I think one of the major reasons I'm succeeding is because of him."

Meaningful interaction–and outcomes–among faculty

Meaningful interaction–and outcomes–among peers

It appears that students in the program benefit from interacting with other students and it promotes them to make connections with others—which seemed to translate into social and academic support…

"I don't talk to people that much. **This gets you more talking to people.**"

Meaningful interaction–and outcomes–among peers

"I always try … to study [on] my own … but **since I joined um this group, it actually has helped me more because when I was trying to do it myself, it would take me longer** … Now that I'm here, I can actually do it much faster."

"…seeing them do their research projects and stuff **really influences…everyone else to do research**."

"[The AIMS^2 program] put **hard working**, **motivated**, **driven**, **and like-minded people in one room**… [and] ideas would fly across the room and we learned a lot from one another."

Meaningful interaction–and outcomes–among peers

"We are definitely not competing. Uh, we are working together. And if, if we don't work together then we're not gonna be able to finish what we're supposed to finish."

"You always have to try to uh prove not the professor per se but your classmates wrong."

A mixed bag: A collaborative and competitive peer environment

Overcoming barriers

"Money is a big barrier."

"…you have a gap year, so **you've lost all the knowledge** that you've cultivated in that previous year, previous semesters. And then **because you were forced to work…**but I had to because I needed money, I needed wages…

Preparing for careers and overcoming barriers

The focus group participants all shared various barriers, or challenges, in pursuing and achieving their career goals.

"**My nationality might be a trouble** because I'm not American and I'm Mexican."

"There's always the barrier of **not knowing the right people**, or, not you know, not getting an opportunity because there's you know, a group of people that already know each other."

"Honestly, I feel like **all the obstacles are happening at the university**. And if you accomplish this than I don't think anything can stop us."

How AIMS^2 prepares students for careers

"[The program] teaches you how what you're gonna do afterwards, so it just tells you how the path is going to be in the future so **you can make your best decision**."

"…everything has been good, yeah, we, we've been to conferences, uh, they brought people from the industry to talk to us, we've been to resume workshops. So, there's a lot of benefits. And there's, **I don't see any downsides**."

A counter narrative

"I would have loved to have seen alumni panel come from AIMS^2 being women… at least validate to me that yeah, they're doing it, and I can do it as well because we do have downs, we are very emotional, and we need that support system. **And we need to see more women in the panel**."

The pressure for female students to succeed: gendered expectations

The professor "came up to me before the final and was like, you better pass this class because **you're the only woman in here. You gotta, you gotta do this, for all of us**."

The pressure for female students to succeed: gendered systems of values

"…As a woman in engineering, we have to almost represent ourselves constantly. We have to stand our ground in terms of the physics, the math, the chemistry, what we know, because **otherwise we won't be valued**."

The pressure for female students to succeed: gender micro-aggressions

"I think most of the time it, it's, sometimes it's ourselves just being pushed, putting ourselves down saying oh, I just can't do it, this is not for me, or like, oh it's for men, you know. **We've been told so much that, that we end up doing it to ourselves**, that oh it's I shouldn't even be in this field, what am I doing, or all that, I don't know."

Feeling welcome in the program

"I think from the get go the way that **AIMS was even set up**, when the roster said represented backgrounds and multicultural… like they welcomed that diversity uh so **it kind of gave us a platform … to just come in and be comfortable**."

An African American participant explained how he feels comfortable in the program: "…being a black male I get… black racial tension from like outside…I don't feel that here. And…**to have uh, uh, an environment where it's not, its, it's a relief**…"

Resiliency and achievement of academic goals

Participants discussed feeling underestimated more generally and overcoming these feelings, how they stay motivated, and what resources they use to help them succeed in their courses.

"When you're **underestimated** you have the opportunity to you know people you don't have the spotlight on you, people don't think [you]… would amount to much so you can actually get into a position where you're in a position to um compete with the other people that you're competing with I guess and I use that **I always use that as an advantage…and it ends up paying off if you play your cards right**…"

"For me it was…**strapping in and investing in every class**" and "also **taking advantage of all of the resources**, that's what brought me closer like the library, and tutoring center, and this program."

"**I attend all my classes** as the main thing cuz that's the first thing that will get you out of the game."

"[It's] **finding who's the strongest in the class and leaning on them** and getting enough information and continuously just studying day in and day out…and getting help with people who understand the concept so you don't end up spending day and night trying to read it yourself and [understanding] it."

What participants said about succeeding in their classes

Navigating through college with the support from family

From the focus groups, we discovered most participants have the support from their parents to obtain a college education.

"They provide me with everything…**that's why I kept on going, cause of them**. If not, then I wouldn't be here."

"Um, **at first my parents didn't support me going to college**... So then after a while they just pushed me. They were like oh, then if you're doing fine then keep on going with it."

"I think the niche of it all is that she knows I love math a lot, so **she continues to push me towards that.**"

Navigating through college with the support from family

Parental knowledge of their education

"Uh, **they don't really know the details because they wouldn't really understand** the details, like the research that I'm doing…they know that I'm involved in the research and they're happy. That's all. No details."

"**I talk to them about school all the time**…and um yeah they know I'm in the AIMS program and they were pretty proud of me for getting accepted into it."

Discussion of Results: Research Question #1

How does student-faculty and peer-peer interaction influence research skill and career development of Latinx and low-income first-time community college and university student and community college transfer students in engineering and computer science fields?

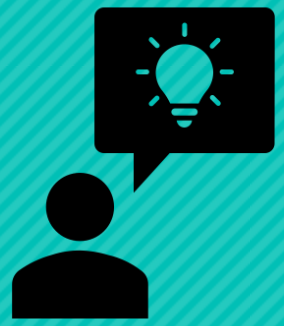
- Student-faculty interaction played a significant role in the success of participants
- Faculty mentors appear to have a consequential impact on participant research skill and career development
- Participants generally reported that with the way the program is designed, they connect with other students
- Participants mentioned a welcoming environment among faculty and peers
- However, some participants felt a more competitive atmosphere
- Female participants shared stories about gendered expectations to achieve.

Discussion of Results: Research Question #2

How do family and peers shape the academic and social experiences of Latinx and low-income first-time community college and university student and community college transfer students in engineering and computer science fields?

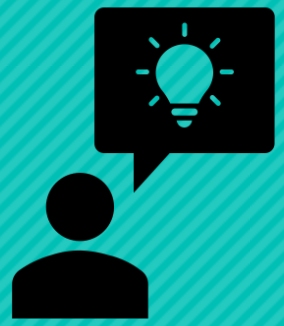
- Many participants feel supported by their families
- However, several participants are the first in their family to attend college and often their parents are not familiar with the college-going process
- Few participants commented that their parents do not know the "details" of their major and involvement with AIMS^2 AIMS^2 because "they wouldn't really understand"
- There is a strong sense of community among the participants
- Participants seem to get work done faster by collaborating in groups
- Participants see the benefits of working with each other

Recommendations: Faculty Mentors



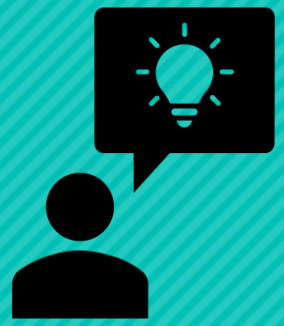
1. Continue to connect CSUN faculty mentors to students at community college partner campuses to facilitate frequent and quality faculty contact with pre-transfer students before transitioning to a university;
2. Consider offering summer-bridge-type workshops and activities for first-year and transfer students to assist with the transition to college;
3. Consider pre-transfer academic advising to form close relationships with first-time transfer students during the transition process.

Recommendations: Peer-Peer Interaction and Environment



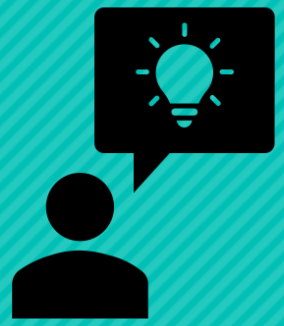
1. Consider offering more team-building and social activities to encourage peer-to-peer interaction outside of academic and/or research contexts;
2. Consider expanding peer mentoring– to scale Mentor Collective to pre-transfer community college students.

Recommendations: Program Diversity and Gender Dynamics



1. Sponsor/host talks/symposia on gender and race;
2. For panel discussions, work to include/increase representation of women and women of color;
3. Explore assigning/pairing women students with women faculty mentors.

Recommendations: Overcoming Barriers to College Success



1. Extend/expand summer skills workshop session on campus resources for all first-term participants;
2. Consider structuring academic advising to monitor students to ensure they have the resources to address challenges that arise in the first-year/post-transfer;
3. Consider more opportunities to invite family members/parents to social activities or offering a new parent/family orientation.

Thank you!

Any questions?