Welcome to AIMS²(HSI-STEM Grant) 2013 External Advisory Board Meeting

JD 1568
2 PM – 3:30 PM
May 2, 2013

•*AIMS² 12-13 Cohort: Photo Courtesy Armando*

AGENDA

•Welcome and Introductions – External Advisory Committee

•Overview of grant

   •Goals, Objectives and Timelines– Ramesh

•Project Evaluation and Progress to date – Nathan

•Academic Progress of Students in the Cohort

   •Glendale Community College – Richard, Jan, and Scott

   •College of the Canyons – Susan and David

   •CSUN – Nagwa and Tesha

•Project Activities Update

   •iPad initiative – Ramesh

•Feedback and Discussion - External Advisory Committee

Welcome External Advisory Committee

- Mr. Rich Alvidrez, JPL

- Dr. Vaughn Cable, JPL

- Mr. Luis Carbajo, IEEE LA Council Vice Chair

- Ms. Linda Friedman, Northrop Grumman, Woodland Hills

- Mr. Neal Gaborno, Raytheon

- Mr. Bill James, Avery James Inc.,

- Prof. Miguel Macias, Emeritus faculty CSUN

- Mr. Tony Magee, PWR

- Mr. Michael Medina, Hill International, San Diego

- Mr. David Naiditch, Aerospace Corporation

- Dr. Rick Ratcliffe, Dean emeritus CSUN

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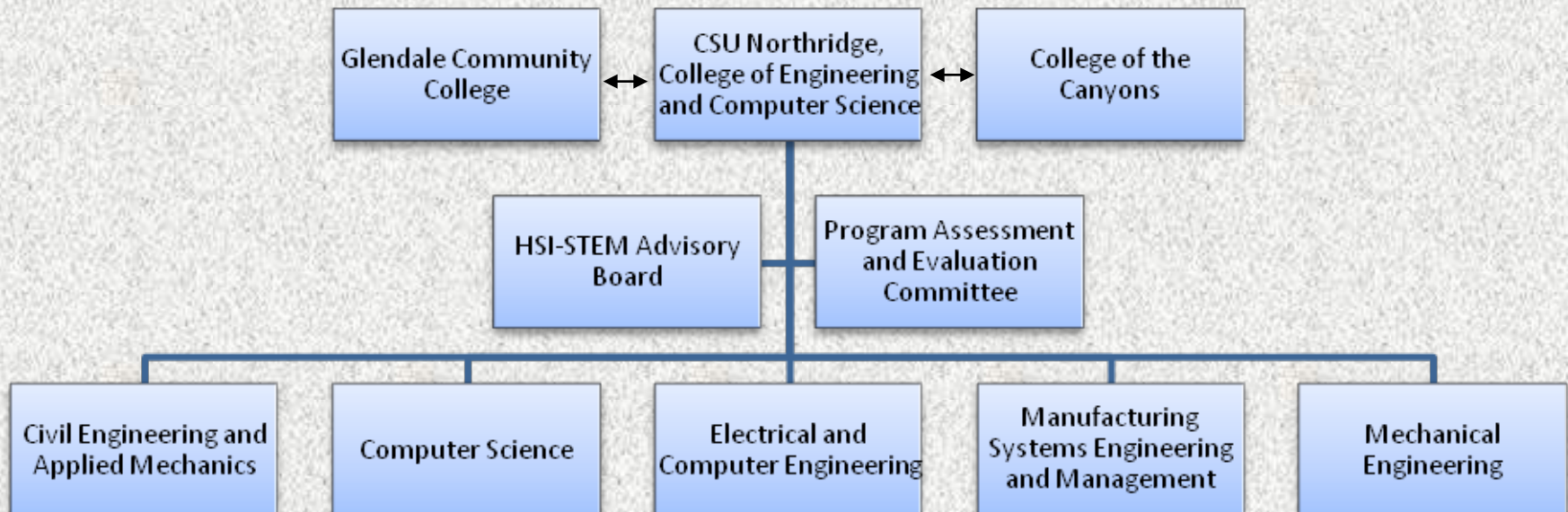
Goals and Objectives

- To increase the number of Hispanic and low-income students who successfully transfer from Glendale Community College (GCC), and College of the Canyons (COC) to California State University, Northridge, to pursue majors in Engineering and/or Computer Science.

- To increase the number of Hispanic and low-income students who join CSUN as upper division transfer students and graduate with degrees from one of the undergraduate programs in the College of Engineering and Computer Science.

- To develop a model, seamless and sustainable transfer program to assist Hispanic and low-income students to successfully transfer from GCC and COC to California State University, Northridge where they will complete their studies in Engineering and/or Computer Science.

AIMS²
Attract, Inspire, Mentor and Support Students

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Glendale Community        CSU Northridge,         College of the
College              ◄──►  College of Engineering  ◄──►  Canyons
                           and Computer Science
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HSI-STEM Advisory          Program Assessment
Board                      and Evaluation
                           Committee
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Civil Engineering and   Computer Science   Electrical and          Manufacturing          Mechanical
Applied Mechanics                          Computer Engineering    Systems Engineering    Engineering
                                                                   and Management
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Timelines

	GCC	COC	CSUN	Total
Year 1	15	15	30	60
Year 2	30	30	60	120
Year 3	15	15	60	90
Year 4			60	60
Year 5			30	30
Total	60	60	240	

The AIMS² Project Team

US Department of Education HSI-STEM grant just announced that we will receive Year 3 funding (2013-2014) in the amount of $ 1.12 M

California State University
Northridge

Congratulations Melissa Flores!

Greetings!

On behalf of the Alliance of HSI Educators Scholarship Committee, we are pleased to announce the recipients of the inaugural conference scholarship. We received over sixty applications from well-qualified students from HSIs across the country. Due to the high number of submissions, the committee elected to award two recipients per tier. As you can imagine, it was a very difficult decision!

Congratulations to each of the following outstanding students for a job very well done!

Tier # 1: conference travel, registration and iPad
Philip Joshua Mercado, Miami Dade College, Biotechnology
Melissa Flores, CSU Northridge, Mechanical Engineering & Math (double major)

Tier # 2: conference travel and registration
Julien Ekiaka-Oblazamengo, Texas A&M University, Bilingual Education
Angelica Luna, University of Texas at Brownsville, Business Administration

Tier # 3: iPad
Gabriela Solis, Loredo Community College, Biology
Edgar Munoz, College of the Sequoias, Biology

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Evaluation Framework

- Overall evaluation goal was to assess project performance measures with baseline and actual performance data at each campus

- Project objectives frame evaluation as an embedded mixed methods case study design
  - Within overall framework, evaluation designs varied by campus to meet unique project needs

- Data sources
  - Cohort 1 participants, faculty mentors, staff
  - Institutional data, project data
    - *COC*: records of student participation in activities
    - *GCC*: recordkeeping and tracking
    - *CSUN*: institutional data on enrollment, project records from admissions interviews and faculty mentors
  - Document data
    - *COC/GCC/CSUN*: course articulation documents

Data Collection and Analysis

- Data collection
  - *COC*: meetings, faculty/counseling appointments, field trips, academic success workshops, skills workshops
  - *GCC*: online student survey, student focus groups, informal conversations with counselor
  - *CSUN*: web-based structured journals for cohort participants (monthly) and faculty mentors (spring-summer-fall), personal interviews for cohort participants
- Data analysis
  - Frequency analysis and thematic data analysis

The Big Picture: Achievement Indicators

- Cohort participants achieved greater success compared to students in a comparable group

  – On average, cohort participants:

    • Completed 5.9 more ***units*** than students in the comparison group between Fall 2011 and Spring 2012

    • Earned a ***cumulative GPA*** of 3.03 vs. 2.38 for students in the comparison group at the end of Spring 2012 (includes Fall 2011 and Spring 2012)

    • Experienced a 96.7% ***persistence rate*** vs. 78.7% rate for the comparison group (Spring 2012-Fall 2012)

The Big Picture: Overall Findings

- Of the 33 performance *measures* for 12 project **objectives**, 28 are quantitative

  - 14 of the quantitative *measures* have been achieved, while the other 14 *measures* show progress

    - 1 project **objective** has been achieved (1a--transfer)

- The 5 <u>qualitative</u> performance measures reveal important information about student-faculty, peer-peer, and research interaction

Transfer and Completion

- Transfer achievement (1a)
  - 65 new CSUN transfer students entered in 2011-12 from COC/GCC in a field housed in the CECS
    - 181% increase over the project target (n=36) and a 310% increase over the baseline figure (n=21) from 2010-11

- Program completion approaches target (7a)
  - 29.3% (22/75) completed a degree program for the most recent period vs. 30.9% (21/68) project target
    - An increase over the project baseline (26.5% or 18/68)

Academic Counselors and STEM Advising

- The number of counselors at *COC* (n=2) and *GCC* (n=3) who participated in STEM professional development met or exceeded the project target (n=2) during the period (3a)

- The addition of one academic advisor at *CSUN* met the project target increase (n=1) for the performance measure (8a)

STEM Tutoring, Workshops, and Labs

- *COC* and *GCC* facilitated cohort participation in STEM tutoring and workshops (4a) at a rate that exceeded the project target, including 90% and 69% cohort participation at *COC* and *GCC*

- *CSUN* supported cohort participation in STEM workshops (9b) and supplemental labs (9c) at a rate (50% and 30%) that exceeded project targets during the period

Faculty and Peer Mentoring/Interaction

- *COC* and *GCC* encouraged interaction among cohort participants and faculty mentors (5a) at a rate (91% and 100%) that exceeded the project target during the period

- *CSUN* fostered faculty research (10a) and peer mentoring (12c) relationships for 53% and 87% of cohort participants, which exceeded project targets during the period

Overall Findings: Larger Patterns

- Addition of academic counselors and increase of participation in professional development at CSUN, GCC, and COC mark a milestone

- STEM tutoring at GCC/COC, STEM workshops at all three campuses are clear strengths

- Supplemental labs, faculty research at CSUN support GCC/COC/CSUN student development

- Peer mentoring at CSUN and frequent peer interaction at all three campuses reach students

Student-Faculty Interaction at GCC (5b)

- Internships gave students hands-on experience and an opportunity to work with peers
  - "The experience opened my eyes to what there is still to learn…and what I need to do to master what I want to do."

- Faculty mentorships provided direction and enhanced students' awareness of their interests
  - "I feel I can trust him [faculty mentor]. He gives me specifics about what I really need to do to gain a career."
  - "My faculty advisor was most helpful when it came to motivation."

Student-Faculty Interaction at COC (5b)

- Interactions with COC engineering faculty and professional engineers
  - Students meet one-on-one with engineering faculty mentors
    - Discussions of their academic goals and career aspirations
- Appointments with COC counseling faculty
  - Two counselors meet with and advise student scholars
    - Scholars meet with counseling faculty to develop Student Educational Plans (SEP) and participate in transfer planning

Faculty Mentor Research at CSUN (10b)

- Faculty research prepared students academically
  - Research presented students with typical problems and solutions in their fields and concepts in class

- Research projects connected students to careers
  - "Doing research with [redacted] helped me to think critically about my future career."

- Challenges to participating in faculty research
  - Generally, students reported "no time" to participate
    - *Steps taken to address issue*: students meet in faculty mentor groups to plan for research opportunities (e.g., summer research)

Student-Faculty Interaction at CSUN (11b)

- Overall, positive interactions with faculty, particularly with academic needs, course selection, academic advisement, and research
  - "My faculty mentor is very helpful…willing to listen" and "is friendly…we just talk"
  - "My faculty mentor knows about internships and research projects I can get involved in."
  - "[Redacted] helped to select my courses from my senior year into the Masters' program."

Effects of Student-Faculty at CSUN (11b)

- Student-faculty interaction seemed to impact students beyond the classroom and lab
  - "[Redacted] gives me advice and shows me how to manage my time."
  - "My faculty mentor changed my attitude about homework, changing my bad habits, and volunteering with…people involved in my major."
  - "My faculty mentor is like a parent-tough love. [Redacted] guides me on the right path. [Redacted] tells me exactly what I have to do."

Peer Interaction at GCC (6c)

- Students attended field trips, including Burbank Water and Power, Jet Propulsion Lab, Great Minds in STEM Conference, that supported a positive peer environment
  - "The Conference gave me insight into…engineering career, and what the job market for Hispanic engineers looks like."

- Peer mentors provided course support and guidance in preparing for college transfer and their career
  - "My peer mentor gives me some direction. I know which organizations I'll join when I get to college."

Peer Interaction at COC (6c)

- AIMS^2 scholars group meetings
  - Students attend meetings with faculty, staff on academic planning, career exploration, soft-skill development
    - Academic planning, resume-building, 1st impressions, scholarships, internships, careers in engineering

- Attendance at professional conferences
  - SHPE Conference attendance with COC engineering faculty chair facilitated interactions between AIMS^2 scholars and faculty, other students and professional engineers

Peer Interaction at CSUN (12d)

- Cohort participants encountered a peer environment where they enjoyed meeting new students, forming study groups, and working in research groups with other students
  - "I met friends and we took the same classes."
  - "I now have friends I can meet…and study with."
  - "I like working with the same students in my [redacted] group and research group."

Peer Mentoring and Tutoring at CSUN (12d)

- Cohort participants found a support system in their mentors that served to guide them through their transition to CSUN, through programs
  - "My peer mentor helped me to navigate things," connecting him or her to services beyond the reach of the peer mentor

- Peer tutors supported cohort participants
  - "I was glad when we knew who the peer tutors were. I was able to get in touch with them right away and they helped me to study for this one class I was having problems with."

Challenges of Peer Interaction at CSUN (12d)

- Two challenges that interviewees cited as the most persistent in their interactions with peers
  - Communication with peer tutors/mentors
    - "no face to face, only emails," "didn't have any interactions"
      - *Steps taken to address issue*: peer mentors attend faculty mentor group meetings with cohort participants plus meet outside of groups
  - Access to peer tutors
    - "saw a peer tutor once," had a "hard time finding a tutor," "peer tutors came too late to get help, and "too many students for each mentor or tutor"
      - *Steps taken to address issue*: students are given a table with peer tutors/contact information and asked to connect/set meeting with tutors

Effects of Peer Interaction at CSUN (12d)

- Mitigate student transfer experiences
  - "I still see my friends from GCC and we have some classes together."

- Facilitate academic self-confidence
  - "My mentor helped me to turn into a self-starter and to ask for help." "[Tutors] are my security blanket."

- Connections between faculty mentors and peers
  - "I was glad to be working on the same team as seniors, I could see progress."

Focus Areas for COC and GCC

- Efforts to increase academic counselors have been successful, but need exists to continue to translate this success into advising sessions with students (3b)

- Steps to enhance/increase peer mentoring of COC/GCC students by CSUN students may be worth focusing on (6a/b)

Focus Areas for CSUN

- While academic advising has increased during the period, an area to focus efforts may lie in how to nudge up academic advising sessions with cohort participants (8b)

- Like academic advising, tutoring sessions may need to reach just a few more students in the cohort (9a/12b)

Overall Project Focus Areas

- Enhance communication/contact, including possible monthly newsletters, weekly project announcements, or more frequent use of cohort participant list serve

- Develop project policy/cohort participant contract clause about progressive steps to remove students for non-participation in project activities/faculty mentor meetings, etc.
  - Codify/modify current practices for removal

Next Steps

- Data collection/analysis with Cohorts 1/2 at all three campuses for baseline data (2), actual data

- Update program monitoring tools to assess progress on performance measures

- Compile/present findings from a literature review of undergraduate student experiences and student-faculty interaction in STEM fields

Questions/Comments

- We express our gratitude to the project co-PIs, faculty mentors, and staff for their support of the evaluation

- We thank the advisory board members for their interest in our efforts

- We invite you to share comments/questions about the APR/performance summary

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