



HSI STEM Grant Program

CSUN

COLLEGE OF
ENGINEERING AND
COMPUTER SCIENCE

Welcome to the 8th annual AIMS²(HSI-STEM Grant) External Advisory Committee Meeting



*1 2 PM - 4 PM
JD 1568
Jun 10, 2019*



Disclaimer

- Supported by the AIMS² Program and funded by the United States Department of Education FY 2016 Title III, Part F, Hispanic-Serving Institutions (HSI) STEM and Articulation Program five-year grant, Award Number P031C160053, CFDA Number 84.031C.
- However, the contents of this presentation do not necessarily represent the policy of the US Department of Education, and you should not assume endorsement by the Federal Government.



AGENDA

- Luncheon
- Welcome and Introductions – External Advisory Committee
- Overview of grant
- Program News and Year 3 Activities (CSUN) – Ramesh
- Glendale Community College – Chris Herwerth and Scott Rubke
- College of the Canyons – Amy Foote
- Moorpark College – Scarlet Relle
- LA Pierce College – Elizabeth Cheung



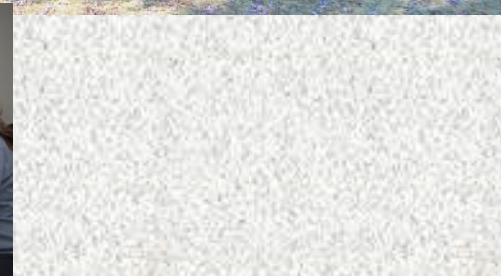
AGENDA

- Luncheon
- Welcome and Introductions – External Advisory Committee
- Overview of grant
- Program News and Year 3 Activities (CSUN) – Ramesh
- Glendale Community College – Chris Herwerth and Scott Rubke
- College of the Canyons – Amy Foote
- Moorpark College – Scarlet Relle
- LA Pierce College – Elizabeth Cheung



AGENDA

- Luncheon
- Welcome and Introductions – External Advisory Committee
- Overview of grant
- Program News and Year 3 Activities (CSUN) – Ramesh
- Glendale Community College – Chris Herwerth and Scott Rubke
- College of the Canyons – Amy Foote
- Moorpark College – Scarlet Relle
- LA Pierce College – Elizabeth Cheung



Project Website
www.ecs.csun.edu/aims2



AGENDA

- Luncheon
- Welcome and Introductions – External Advisory Committee
- Overview of grant
- Program News and Year 3 Activities (CSUN) – Ramesh
- Glendale Community College – Chris Herwerth and Scott Rubke
- College of the Canyons – Amy Foote
- Moorpark College – Scarlet Relle
- LA Pierce College – Elizabeth Cheung



Cohort Requirements

- **Attend all scheduled meetings with your faculty mentor**
- **Participate in peer mentoring program (Mandatory for Cohort 3)**
- **Enroll and complete a minimum of 24 units/year and pass all courses with grades of C or better**
- **All students eligible to receive bi-annual textbook awards of \$ 500 (at the end of fall/spring semesters) upon meeting requirements**
- **Full awards/Partial Awards**



Major activities in AIMS² grant

- Undergraduate Research
- Tutoring
- Mentoring (Faculty and Peer Mentoring)



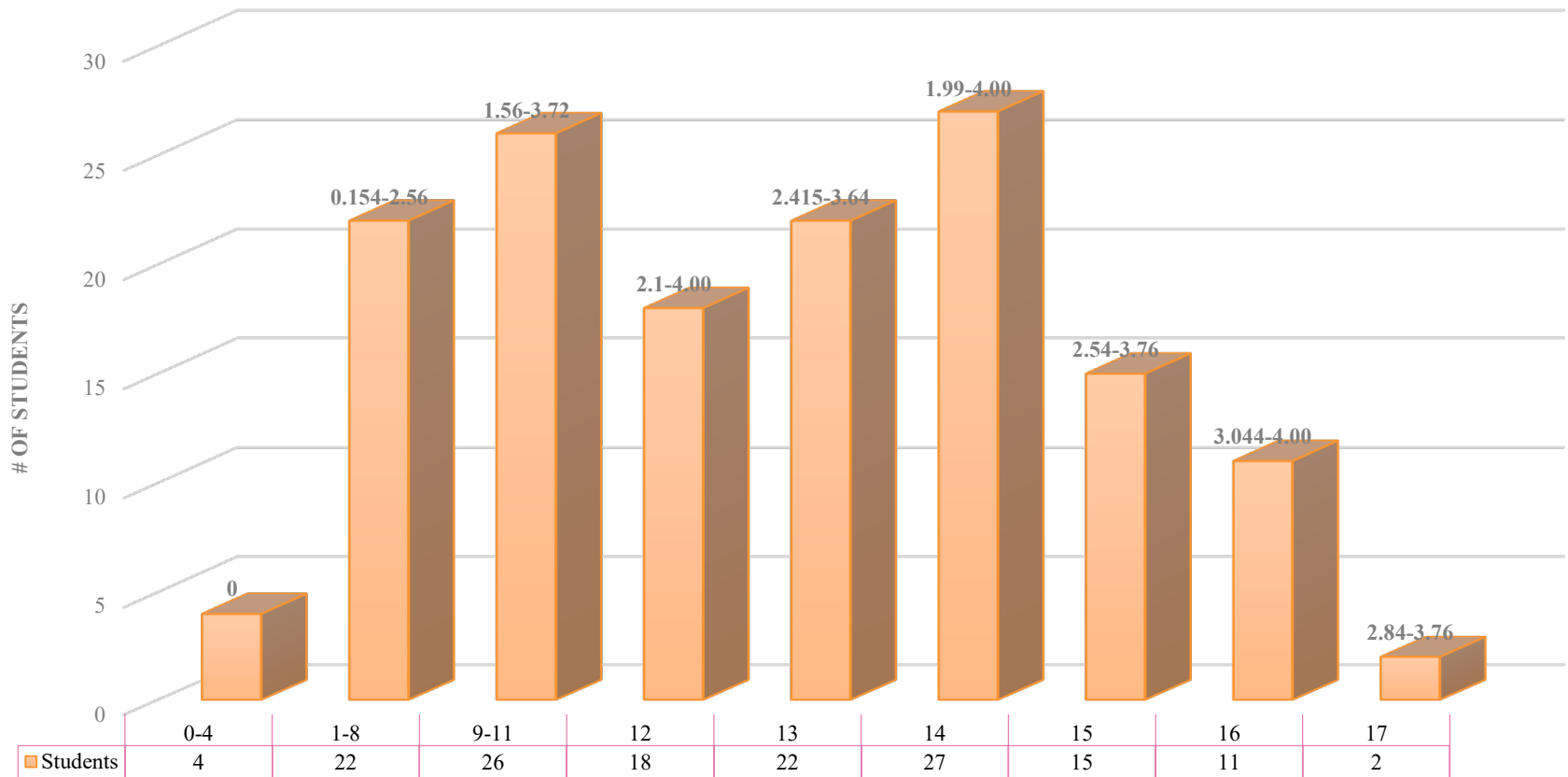
Highlights from Year 3

- Served a total of ~150 students at CSUN in 3 cohorts
- Summer workshops for incoming students (2 Weeks)
- Formal large group meetings for entire cohort (Orientation, Peer/Faculty Mentor Panels)
- Peer Mentor program completing first year with over 22 mentors including 7 alumni mentors
- 2018 Research Symposium – 49 students



Fall 2018 Cohort Performance

Units Completed/GPA Range





Graduated Table of Unit Completion and GPA					
Students with 12 or more units completed and passing all classes					
GPA	Number of students	% of cohort			
>3.0	60	41.38%			
>2.8	75	51.72%			
>2.7	82	56.55%			
>2.6	87	60.00%			
>2.5	90	62.07%			
>2.4	92	63.45%			
>2.3	93	64.14%			
>2.2	94	64.83%			
>2.1	96	66.21%			
Students passing all classes with GPA >2.0 = 120					82.76%



AIMS²
STUDENT RESEARCH SYMPOSIUM

**ATTRACT
PEOPLE
MENTOR
SUPPORT
STUDENTS**

TEXT
RESEARCH
EXAMPLE of
EXCELLENCE

**SEP
11TH
2018** | 3:00
TO
7:00
P.M.
USU GRAND SALON

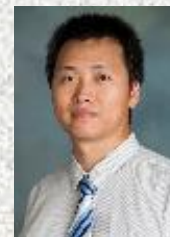
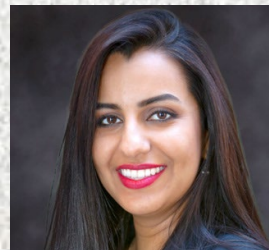
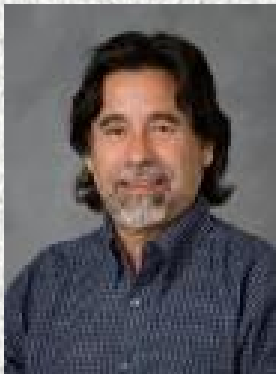
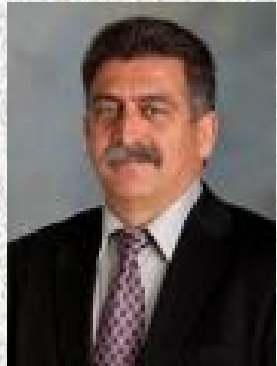
CSUN. | COLLEGE OF
ENGINEERING AND
COMPUTER SCIENCE





The AIMS² Project - Attract, Inspire, Mentor, and Support Students

Summer 2019 Research Program- Faculty/Staff Team



Project Title	Professor	Total Selected
A Mobile Construction Management Risk Assessment Model	Dr. Anwar Alroomi	
Virtual Labs – Learning Engineering Mechanics and Dynamics with Virtual Hands-on Experiments	Dr. Anwar Alroomi	6
Improving the durability of packaging materials using vapor phase corrosion inhibitors	Dr. Behzad Bavarian	
Sustainable materials for steam generating system and power plants	Dr. Behzad Bavarian	
Corrosion protection of steel pipes/reinforced concrete structures using corrosion inhibitors	Dr. Behzad Bavarian	
Application of high strength aluminum alloys for aircraft applications	Dr. Behzad Bavarian	9
Metal additive manufacturing of cam support plate for Harley Davidson Milwaukee 8 Engine	Dr. BingBing Li	4
Electrical Speed Drives and Environment	Dr. Bruno Osorno	4
New Product Development and Technical Entrepreneurship	Dr. S. Jimmy Gandhi	8
Evaluating Test Suite Generation Techniques for Introductory Computer Science Assignments	Dr. Kyle Dewey	5
Solving real world problems by using Intelligent Control Systems	Dr. Ruting Jia	7
Parametric study of seismic active earth pressures on retaining walls	Dr. Tzong-Ying Hao	
Parametric study of soil structure interaction on building structures	Dr. Tzong-Ying Hao	
Sloshing Water Damper – Modeling and Simulation	Dr. Tzong-Ying Hao	8
Total		51
Community College Students		25



4th Annual Research Symposium

- **When : Wednesday, September 11, 2019**
- **Where: Grand Salon**
- **3 PM – Set up Posters**
- **3:30 – 4:30 PM Posters open for viewing**
- **4:30 PM – 8 PM Presentations**
- **Audience: All cohort students from CSUN and partner campuses, their families, faculty, staff, students from CSUN and CCC partners**



2018 Airbus GEDC Diversity Award for Engineering Education AIMS² Short Listed

The Airbus GEDC Diversity Award aims to shine a light on successful projects that inspire students from all profiles and backgrounds to study and succeed in engineering. The award was developed and funded by Airbus in partnership with the GEDC, the leading international organization for leaders of schools and colleges of engineering education. Launched in 2012, the award is now in its 6th year. For the 2018 edition, UNESCO, the United Nations Educational, Scientific and Cultural Organization have partnered with Airbus for the award.

2018 Shortlisted Projects Video



2018 Examples of Excelencia





AGENDA

- Luncheon
- Welcome and Introductions – External Advisory Committee
- Overview of grant
- Program News and Year 3 Activities (CSUN) – Ramesh
- Glendale Community College – Chris Herwerth and Scott Rubke
- College of the Canyons – Amy Foote
- Moorpark College – Scarlet Relle
- LA Pierce College – Elizabeth Cheung

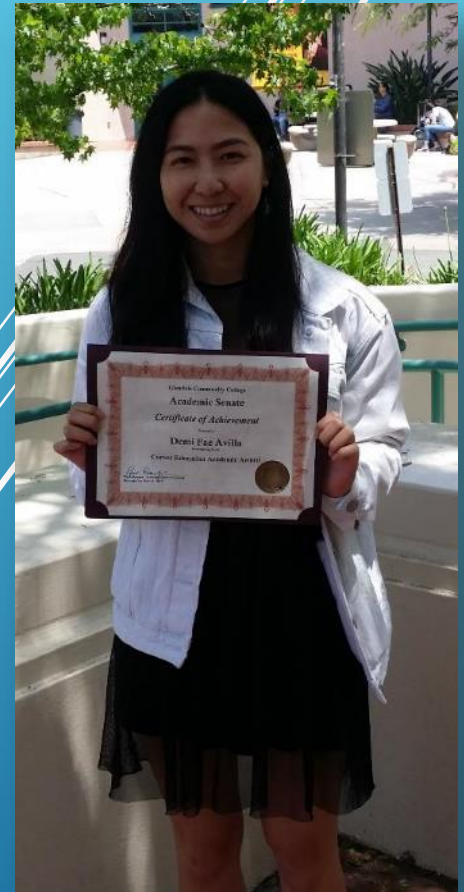
GLENDALE COMMUNITY COLLEGE AIMS² 2018 - 2019

**GCC Engineering Research Lab
“AT-229”**

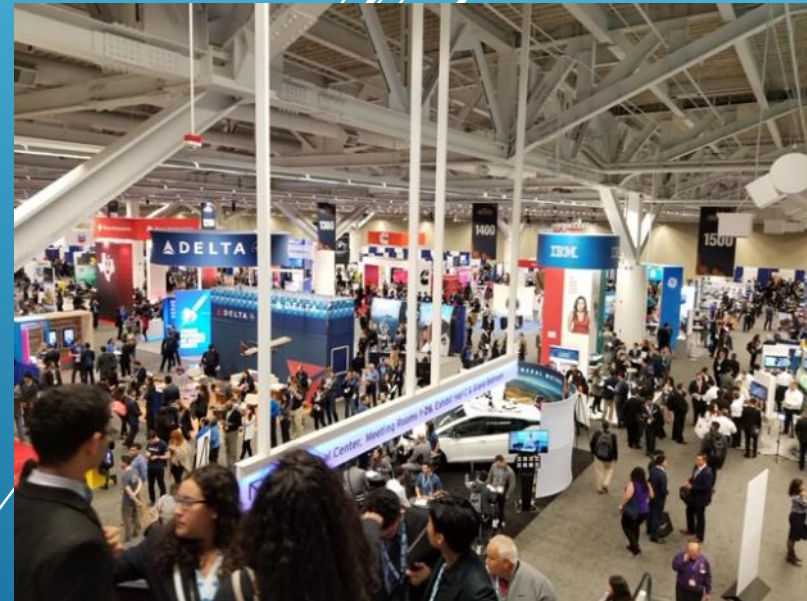
**Typical Student Support, Activity Based
Classroom and Project Space**



- Created a AIMS/Research Lab Cohort Canvas Site
- AIMS students accepted for transfer to Cal State Long Beach, Northridge, Pomona, SLO, and UCLA
- Two Chemistry majors supported by AIMS
- Three GCC faculty attended Engineering Liaison Council (ELC) meetings
- Expanded STEM and CTE Counselor training and engagement
- Three AIMS students engaged for support of a summer bridge course on 3D Printing and Local high school students recruited



- Leveraged existing Research Lab space “AT-229” for student academic support, student projects and research, and student worker support
- Hired 11 student workers from AIMS cohort as Research Assistants and leveraged peer-to-peer learning and other grant funding sources.
- Monthly meetings with training on undergraduate student research
- Five AIMS students attended AeroDef conference and presented poster on 3D printing



- **8 AIMS students attended SHPE National conference in Ohio Fall 2018**
- **10 AIMS students volunteered for SHPE sponsored Maker Faire event April 27, 2019 with 800 registered attendees.**
- **AIMS students designed, conducted and supervised numerous STEM workshops, panel discussions, and speakers.**
- **5 AIMS students applied for CSUN Summer Research program with 1 or 2 selections**
- **NASA Aerospace Scholars program**
- **JPL SIRI Internships**
- **Internships in private industry**
- **Support to Underprepared students prioritized**





AGENDA

- Luncheon
- Welcome and Introductions – External Advisory Committee
- Overview of grant
- Program News and Year 3 Activities (CSUN) – Ramesh
- Glendale Community College – Chris Herwerth and Scott Rubke
- College of the Canyons – Amy Foote
- Moorpark College – Scarlet Relle
- LA Pierce College – Elizabeth Cheung



Bridging the Gap with AIMS² – Enhancing Student Success with a Multi-Institutional Collaborative Program

College of the Canyons Partnership with CSUN

June 10th, 2019

Amy Foote

MESA Program Director

College of the Canyons

COC and CSUN Partnership

- AIMS² Students
- Services for Students
- Student Opportunities



AIMS² Students

- 8 years partnered with CSUN's AIMS² Program
- 60 COC Students participated in 7 cohorts
- 26 Students transferred to CSUN from those cohorts
- AIMS²/COC students had a 3.50 average GPA at transfer 2019
- Currently have over 44 students involved in the AIMS² Program at COC this year



Services for Students

1. **Tutorial support** from both faculty and peer tutors ~96hrs/week
2. **Peer Mentor Program** – 1st yr. students paired with 2nd yr. students
3. **Academic excellence workshops** – increases GPA by .5-1.0 for those that participate in the workshops
4. **Professional development workshops**, guest speakers and other activities such as financial aid workshops, UC application workshops, resume workshops, Industry presentations, etc.



Student Opportunities

- **Conferences**

- Great Minds in STEM – HENAAC
- SHPE – Society of Hispanic Professional Engineers
- Women in Engineering
- SACNAS

- **Symposiums and EXPOs**

- CSUN Research Symposium
- Aerospace Engineering Symposium and Expo



Student Opportunities

- **Research**

- CSUN Summer Research (12 students last summer from COC and 2 this summer)
Present their work at Symposium



- **Internships**

- JPL/NASA (~10 students per year)



- **Facility Tours**

- NASA Armstrong in Antelope Valley
- NASA/JPL
- CSUN Engineering and Computer Science Department
- Local industry





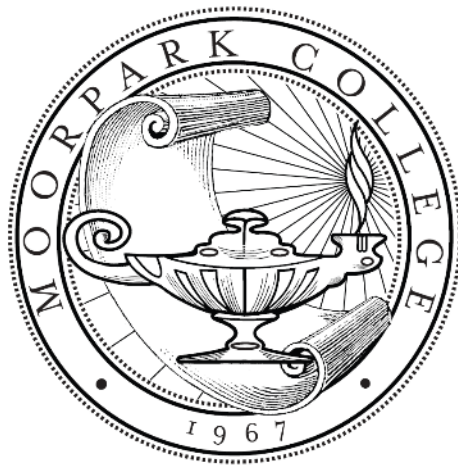
AGENDA

- Luncheon
- Welcome and Introductions – External Advisory Committee
- Overview of grant
- Program News and Year 3 Activities (CSUN) – Ramesh
- Glendale Community College – Chris Herwerth and Scott Rubke
- College of the Canyons – Amy Foote
- Moorpark College – Scarlet Relle
- LA Pierce College – Elizabeth Cheung

MOORPARK COLLEGE ENGINEERING – AIMS²

Scarlet Relle, Ph.D.

Engineering Faculty and Department Co-Chair



Why AIMS² at Moorpark?

- Concur with CSUN on the need for more qualified engineers in the workforce from underrepresented population of students:
 - Hispanics
 - Financially underprivileged
 - Females (Moorpark expanded the scope of the AIMS² program)

Identified obstacles to underrepresented student success

- Inadequate preparation in prerequisite courses to engineering
- Lack of support to help with difficult classes such as peer tutors or supplemental instruction
- Lack of guidance in forming an education plan
- Financial and familial responsibilities
- Lack of role models and mentors to encourage persistence in school to obtain higher education

Activities and Services offered at MC through AIMS²

- Mandatory biweekly meetings with the engineering faculty
- Peer tutoring and supplemental instruction sessions
- Designated STEM and Career counselor
- Workshops to address stress reduction, study skills, time management, resume writing, cover letter writing
- Guest speakers from industry and academia
- Undergraduate research and internship opportunities
- Participating in group engineering projects
- Tours of engineering facilities
- A modest stipend (\$200/student/semester)

Cohort selection process

- Write a 500 word essay explaining commitment to engineering education and why they would be an ideal candidate for this program
- Sign a contract establishing commitment to pursuing an engineering degree and maintaining good standing at the college
- Participate in all team building exercises and attend all mandatory meeting sessions
- Become a member of at least one professional engineering organization and attend at least one of their meetings each semester
- Participate in undergraduate research or work with Dr. Relle in preparing and presenting an engineering project once per year
- Practice applying for internships, writing resumes, and cover letters
- Meet with the designated STEM/career counselor to make an education plan, and review education plan periodically with the counselor

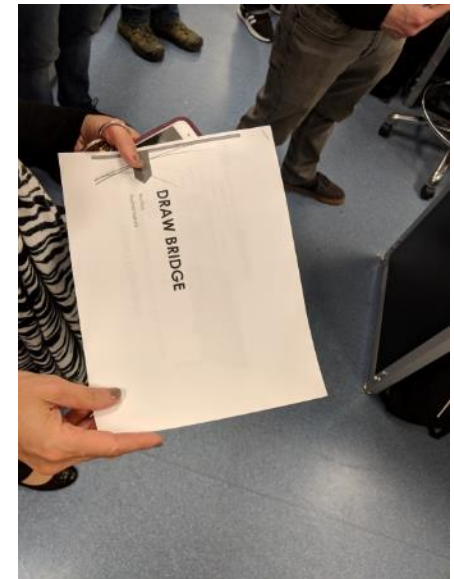
Cohort

- Fall 2018: 25 students
 - 14 females
 - 11 males
- Spring 2019: 25 students
 - 12 females
 - 13 males

Activities in Fall 2018 and Spring 2019

- Biweekly meetings
- Peer tutoring
- Workshops with the designated counselor:
 - Stress management
 - Time management
 - Internships
 - Resume and cover letter writing
 - Interview skills
 - Education plan
- Field trip to Haas Automation
- Research internships with CSUN faculty
- Design Project – draw bridge
- Stipends

Project Presentation Day – March 15th



Project Presentation Day – March 15th



Challenges

- Recruiting students
- Maintaining the same cohort for 2 years
 - Transfer
 - Other obligations (job, family)
 - Class schedule conflicts



AGENDA

- Luncheon
- Welcome and Introductions – External Advisory Committee
- Overview of grant
- Program News and Year 3 Activities (CSUN) – Ramesh
- Glendale Community College – Chris Herwerth and Scott Rubke
- College of the Canyons – Amy Foote
- Moorpark College – Scarlet Relle
- LA Pierce College – Elizabeth Cheung



AIMS² Year 3
2018-19

STUDENT SUPPORT

- STEM Tutoring
 - Physics
 - Engineering (Statics, Engineering Graphics)
- STEM Counseling Services
 - Career Guidance Counseling Assistant (CGCA)
 - STEM transfer workshops



Pierce College

EVENTS

- 2018 HENAAC Conference
- Pierce STEM week
- Spring 2019 CSUN CECS tour





AGENDA

- Project Evaluation and Progress to date – Nathan Durdella, Christine Firkins, Matthew Leitao
- Feedback and Discussion - External Advisory Committee
- Adjourn



AGENDA

- Project Evaluation and Progress to date – Nathan Durdella, Christine Firkins, Matthew Leitao
- Feedback and Discussion - External Advisory Committee
- Adjourn



AGENDA

- Project Evaluation and Progress to date – Nathan Durdella, Christine Firkins, Matthew Leitao
- Feedback and Discussion - External Advisory Committee
- Adjourn