## Current Conditions
- Students challenged to balance coursework, work, and family
- Students challenged by course management, time management
- Low math prerequisite course completion rates
- Pre-transfer students experiences disconnected from CSUN campus and CECS departments
- Transfer students challenged to navigate, negotiate campus services/processes
- Students lack connections to successful role models in business and industry

## Current Practices
- Minimal student contact with faculty and between students outside of class
- Limited opportunities for students to develop meaningful relationships with faculty and peers
- Undergraduate research participation and academic support restricted to small group of students
- Few student career-related connections business and industry

## PROBLEMS

### Financial Support
- Student incentives to participate in research
- Faculty and staff support for project activities

### Intellectual Resources
- PI/Co-PI training and disciplinary backgrounds
- Faculty mentor research and teaching expertise
- Student backgrounds
- Tech expert training
- Advisory Board member affiliations

### Physical Resources
- Print/digital books
- Interactive material
- Social media
- iPads/tablets with engineering apps
- Student academic and social space

### Business Partners
- Advisory board members
- Regional employers

## RESOURCES/INPUT

### Faculty Mentoring
- Faculty mentoring students groups by site/department
- Faculty-led student meetings, talks, workshops
- Faculty-student participation in professional events

### Peer Mentoring and Tutoring
- Pre- and post-transfer peer-mentor and tutoring
- Transfer-ready and senior-standing students mentor incoming students

### Academic Support
- Programming fundamental crash course
- Calculus interactive materials/course section
- Academic advisors/tech expert workshops
- Customized workshops in math and English
- Dedicated library books
- Online video resources

### Student Research
- Faculty summer and academic term research

### Career Preparation
- Student participation in career workshops and professional associations/events
- Summer job internships

## ACTIVITIES

### Faculty-Student Mentoring Relationships
- Increased contact between faculty and students
- Weekly meetings with faculty mentors who guide/support students
- Faculty communication via email, LMS, etc.
- Student-faculty interaction in professional settings

### Transfer Student Support
- Peer mentors associated with each faculty mentor student group
- Peer tutors assigned to each site/department
- Frequent/quality social interaction at events
- Support for calculus prerequisite course completion
- Transfer video resources

### Student Design Projects
- Student development of Senior Design Projects and engineering projects across sites

### Career and Pre-Professional Experiences
- Career workshops
- Professional association events/activities

## OUTPUTS

### Student-Faculty Mentoring Relationships
- Enrollment, next-year retention, gateway course success, and successful transfer
- Development of academic self-confidence, self-efficacy, and validation
- Development of course success skills

### Transfer Student Socialization and Transfer Shock Mitigation
- Enrollment, gateway course success, on-track completion, and actual completion
- Skills and knowledge to successfully navigate transfer process
- Calculus course success

### Student Research Skills
- Development of research skills and attitudes about research in engineering and computer science

### Career Placement and Development
- Successful placement and promotion in careers in local and regional engineering and computer science fields
- Network of alumni who serve as role models for the next generation of students preparing for careers in engineering and computer science

## OUTCOMES: SHORT-TERM

### Short-Term: Graduate Success
- Development of long-lasting meaningful relationships with faculty and students (transitioning to colleagues) to support successful student outcomes and graduate school/early career needs
- Internalization of a suite of student success skills—cognitive and non-cognitive—that guide students into post-graduation career and/or academic activities

## Impact/Outcomes: Long-Term

### Long-Term: Career Preparation, Completion, and Post-Graduation Success
- Development of long-lasting meaningful relationships with faculty and students (transitioning to colleagues) to support successful student outcomes and graduate school/early career needs

### Context (External Factors):
1. Disciplinary training/research orientation of CSUN and community college faculty
2. Institutional changes across collaborative partnership sites and CSU-HSI STEM network
3. Market specialization of local/regional businesses/nonprofit organizations

### Current Assumptions:
1. Current AIMS² project model development
2. Partnership engagement and institutional interest and support

### Assessment Data:
1. Pre- and post-test survey data of engineering majors
2. Institutional data on enrollment, achievement, transfer, and completion
3. Interview data on student-faculty and peer interaction