Presentation to the Board of Governors
by Dean Farshad Fotouhi
December 2, 2016
Students - Fall 2016

Number of Students = 3,798

Students by Gender

Students by Ethnicity

- White
- International
- Asian
- African American
- Hispanic
Applications – Admitted – Registered

- **UG**
  - 2013: 1468
  - 2014: 1806
  - 2015: 1464
  - 2016: 1711

- **MS**
  - 2013: 814
  - 2014: 1280
  - 2015: 1488
  - 2016: 586

- **PhD**
  - 2013: 403
  - 2014: 600
  - 2015: 542
  - 2016: 432

**Application Count**
- 2013: 2567
- 2014: 2954
- 2015: 3686
- 2016: 3883

**Admitted Count**
- 2013: 1601
- 2014: 2624
- 2015: 3686
- 2016: 3883

**Registered Count**
- 2013: 1468
- 2014: 1806
- 2015: 1464
- 2016: 1711
Enrollment Trends

Enrollment Trends by Degree

% increase from Fall 2011 – Fall 2016
Undergraduate 72%
Graduate 83%
5 additional faculty positions are currently open
Faculty by Gender

- Female: 112
- Male: 18

Faculty by Ethnicity

- Two or more races: 3%
- White: 42%
- Native Hawaiian and Other Pacific Islander: 5%
- Hispanic or Latino: 52%
- Black or African American: 0%
- Asian: 0%
Instructional Investment

Student:Faculty Ratio

FY15 – 17 includes 6 lecturers provided by the Provost’s Office for a 3 year period
Instructional Investment

Faculty – Staff – Students

5 additional faculty positions are currently open
Research

COE Historical Research Expenditure
Data Reported to NSF (2006 - 2015)

Proposals, Awards, Success Rate

Grant & Contract Distribution

Annual Grant Activity
Research

Hiring Research Productive Faculty
- Cybersecurity and Privacy
- IoT
- Data Science
- Sustainability/Environmental Engineering
- Bio & Systems Engineering
- Advanced/Smart Materials

SMART Cities
- Intelligent Transportation Systems/Big Data ($2.4 M)
- Healthy Communities ($2.4 M)
- Water/Environmental Engineering ($3.5 M)

(FY 2015-16 New Awards)
Departments

- Biomedical Engineering
- Chemical Engineering and Materials Science
- Civil and Environmental Engineering
- Computer Science
- Electrical and Computer Engineering
- Engineering Technology
- Industrial and Systems Engineering
- Mechanical Engineering
HANDS-ON EXPERIENCE
Students involved in EcoCAR 3 learn real-world skills and network with automotive professionals.

GLOBAL PERSPECTIVE
Partnerships with universities all over the world – including in Austria, China, France, Germany, Korea, Latvia and Spain – allow our students to study and research abroad.

UNDERGRADUATE RESEARCH
Three engineering students received awards at Wayne State’s Undergraduate Research and Creative Projects Conference in November 2015.

CO-OPS AND INTERNSHIPS
More than 80 percent of our graduates have gained experience through at least one internship.

COMMUNITY ENGAGEMENT
The college impacts over 3,000 K-12 students in STEAM annually.
Dual Enrollment programs
Mobil Energy Lab
New Degree Programs

- Data Science and Business Analytics
- Cyber Security Program
  - Partnered with Merit Network
  - Offer courses at ATEC and main campus
- Cyber-Physical Systems (IoT/Connectivity) Program
Efforts in Recruiting Minority Students

- DAPCEP
- Dual Enrollment Programs
- Community Outreach
  - Mobile Energy Labs
  - Summer Camps
  - Collaborative programs with GO-GIRL and Camp Infinity
- Eos Program
EOS Program

Objectives

• Increase the number of undergraduate students from underrepresented groups, specifically from Detroit and its surrounding suburbs pursuing and obtaining degrees in Engineering.

• Increase overall retention and graduation rates in Engineering.

• Reduce the time to obtain an Engineering degree.
Campaign Goal Progress

$41.2 million
82% of goal of $50M

As of September 30, 2016
Anderson Engineering Ventures Institute advisory board recommends $178,500 in funding for new technologies

ADVANCED HIGH-STRENGTH STEEL (Faculty)
Nanostructured steel that is high strength, high fracture, low weight and low cost.

BÉBÉ BEAT (Students)
A haptic device that offers peace-of-mind to parents having their first child by keeping in constant touch with their infant.

CARBON FOOTPRINT MANAGEMENT SYSTEM: LOCATIONAL EMISSIONS ESTIMATION METHODOLOGY (Faculty)
Software tool to monitor in real-time the emissions and carbon footprint associated with the energy consumption.

CELL-BASED CARTILAGE REPAIR SOLUTION (Faculty)
A mesenchymal stem cell (MSC) augmented material solution that repairs and regenerates joint cartilage by using a pair of injectable or 3D printable “inks” using patient-derived, adult stem cells.

ITCH FREE NATURAL INSECTICIDE (Student)
A DEET-free, natural, carrier oil based mosquito and insect repellent that also serves as a skin moisturizer and sun screen.

NOVEL SYSTEM OF SUPERCritical CO2 DRYERS (Student)
A supercritical CO2 dryer for low-cost, high-volume, high-quality graphene.

POLIDBONE CEMENT FOR THE REPAIR OF BONE DEFECTS (Faculty)
PolidBone is an injectable, high-cohesion, high-strength bone replacement/cement that lowers risk of infection and reduces healthcare costs by decreasing surgery and recovery times.

SKYPERSO2NIC SAFE DRONE TECHNOLOGY KIT (Faculty)
A drone development toolkit that enhances STEM education.
Key Issues

Space

- Inadequate space
  - Limited or no available office/research space for NEW faculty
  - Limited or no available office space for graduate or undergraduate research students
  - Limited space for student organizations
- New proposed space for Engineering Student Innovation Center
- Need new space for Biomedical Engineering Department and all research faculty with lab needs
- New proposed renovation of Science and Engineering Building for STEM
- Lack of funding to maintain and improve current space

Faculty/Staffing

- Inadequate number of Tenure/Tenure-Track Faculty
- Need professional staff for teaching labs
- Inadequate number of Graduate Teaching Assistants