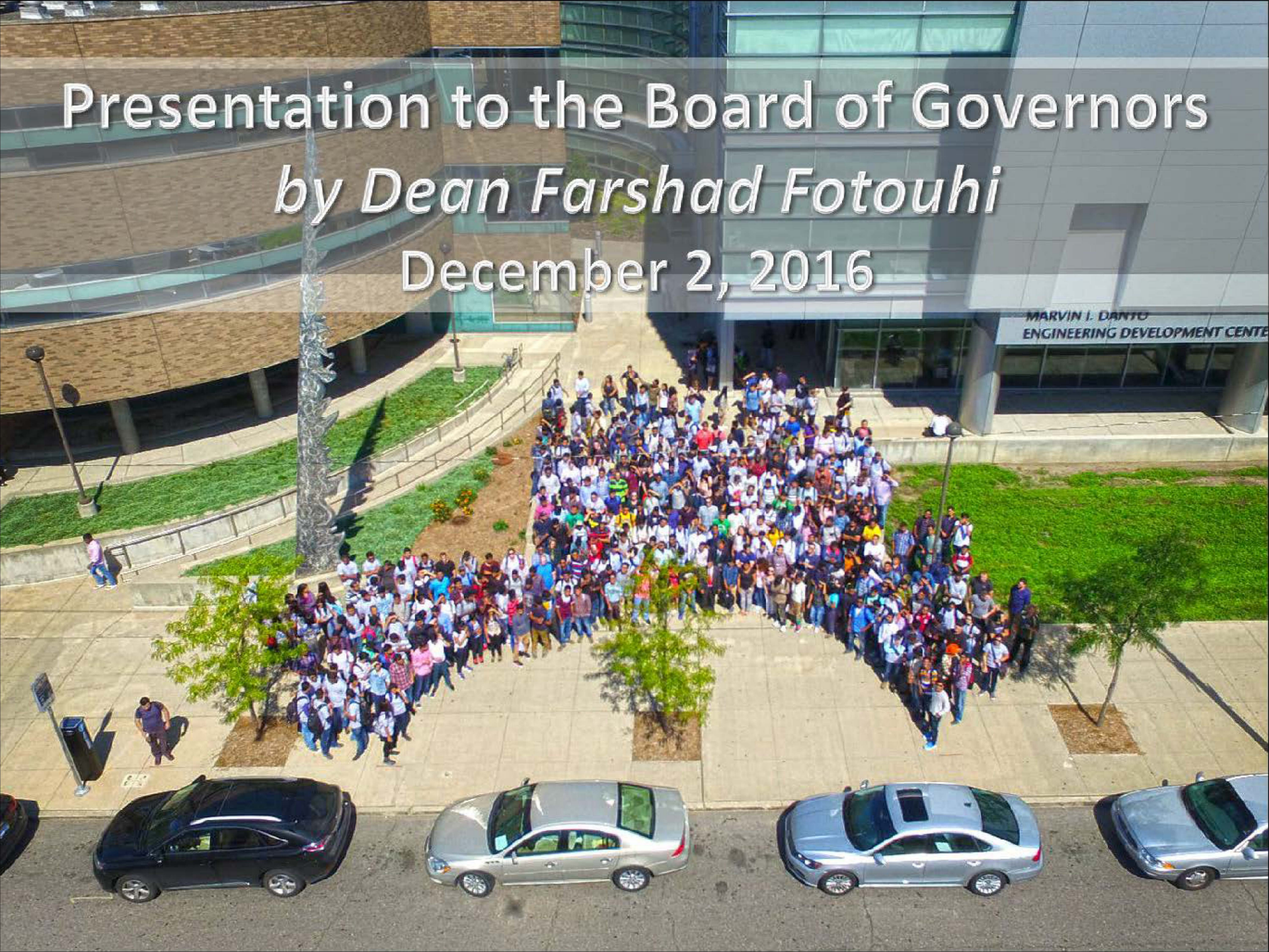


Presentation to the Board of Governors *by Dean Farshad Fotouhi* December 2, 2016

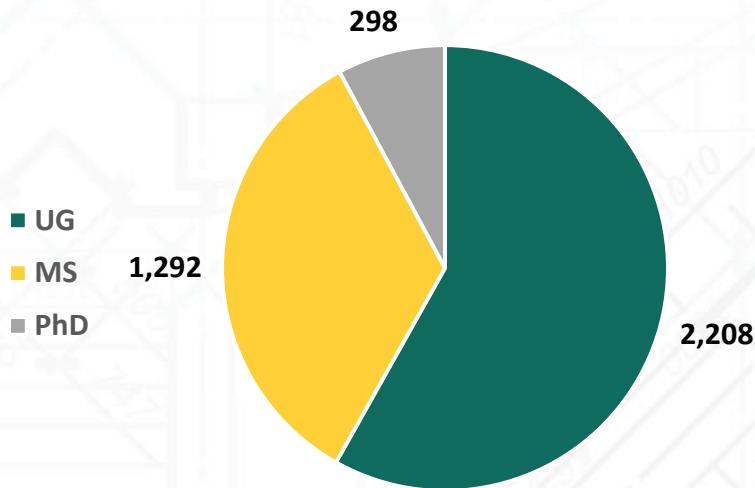




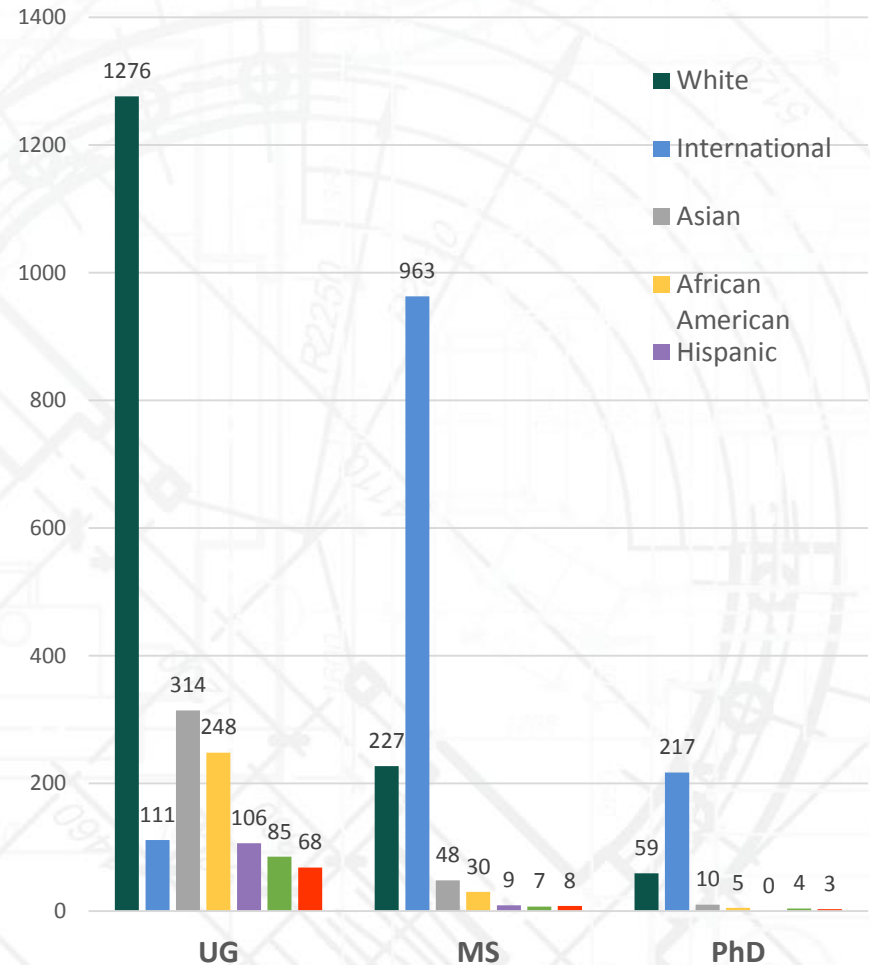
Students - Fall 2016

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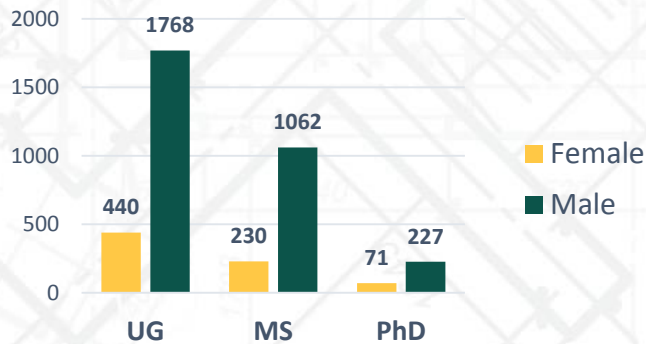
Number of Students = 3,798



Students by Ethnicity



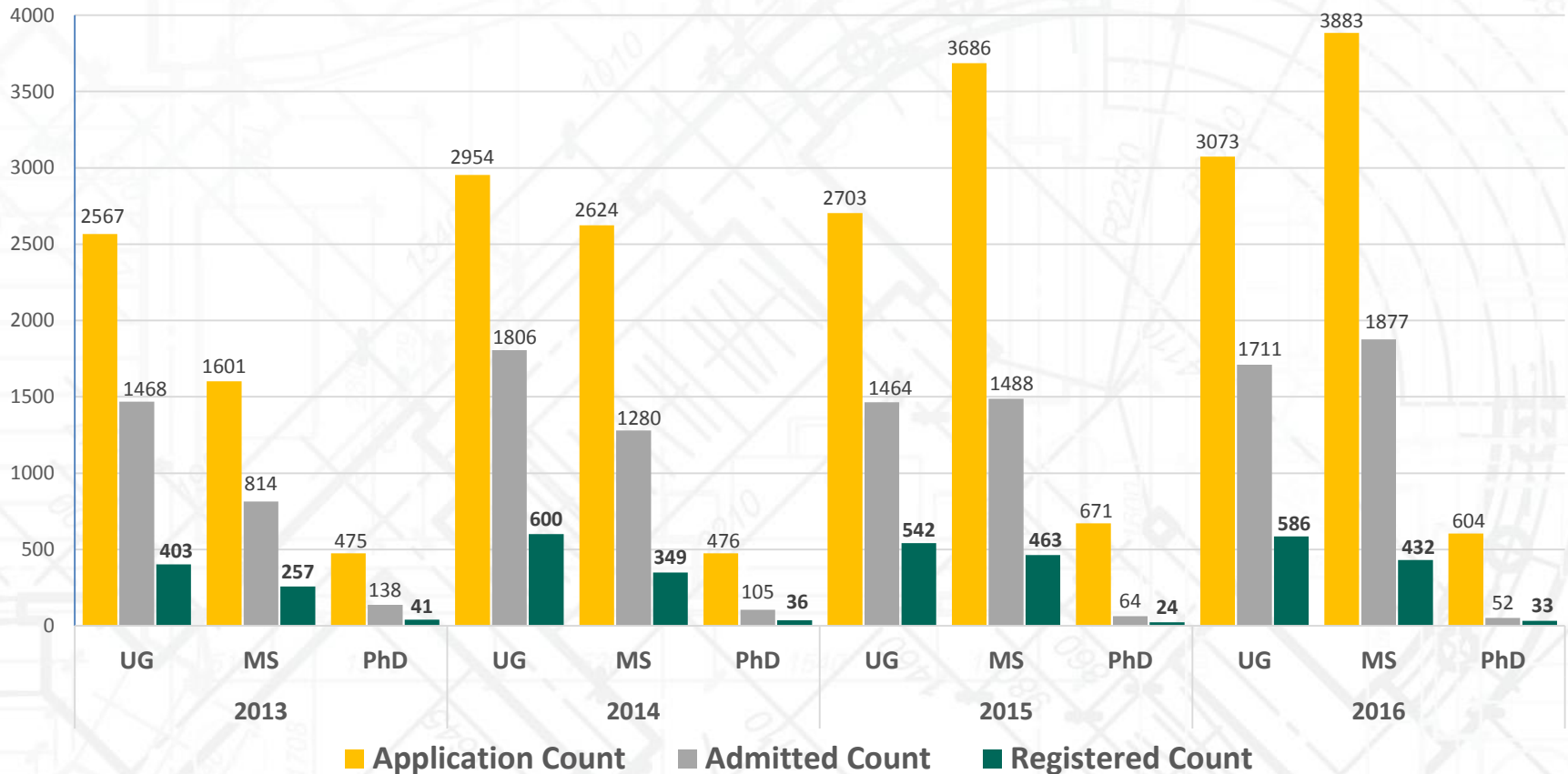
Students by Gender





Yield

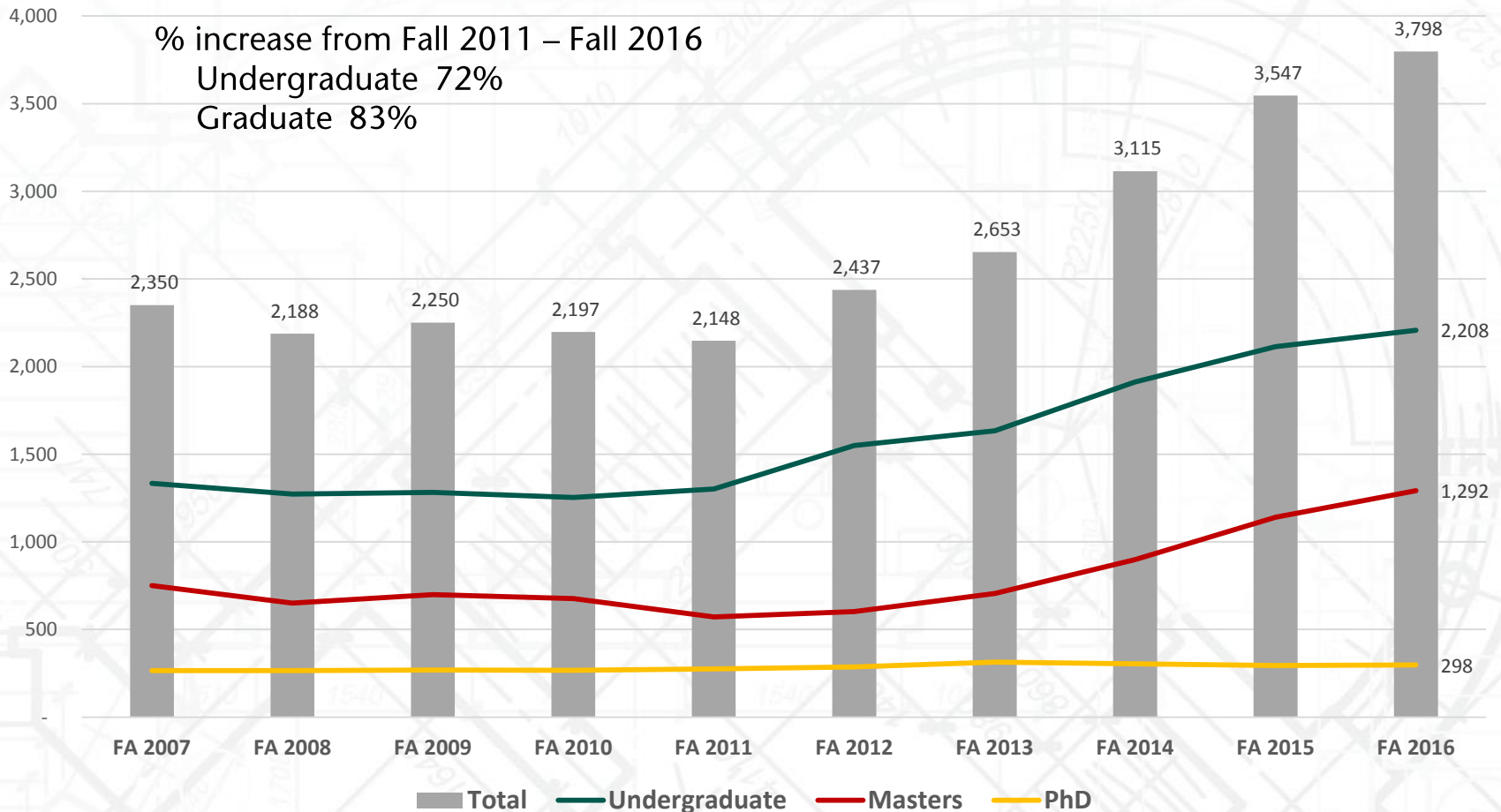
Applications – Admitted – Registered





Enrollment Trends

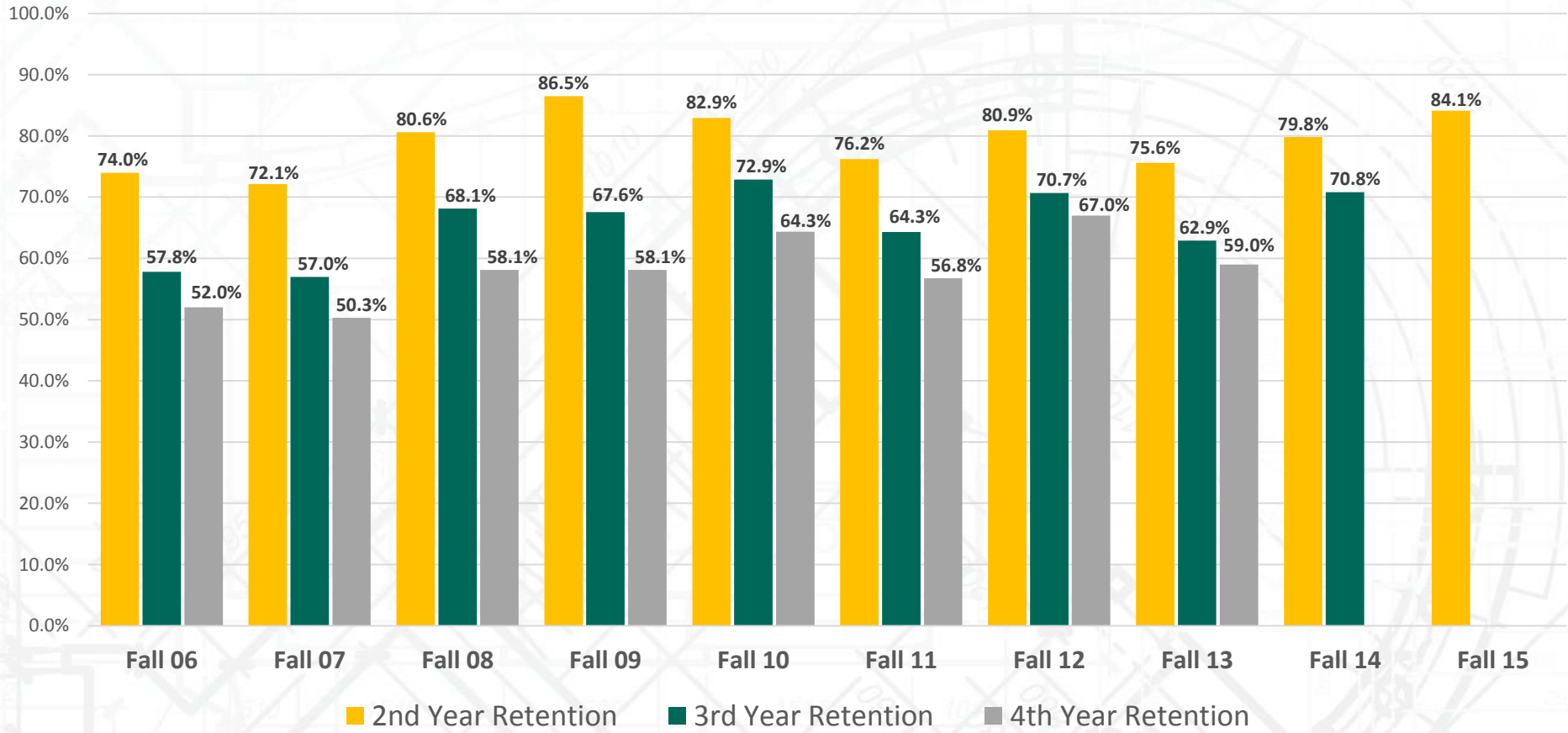
Enrollment Trends by Degree





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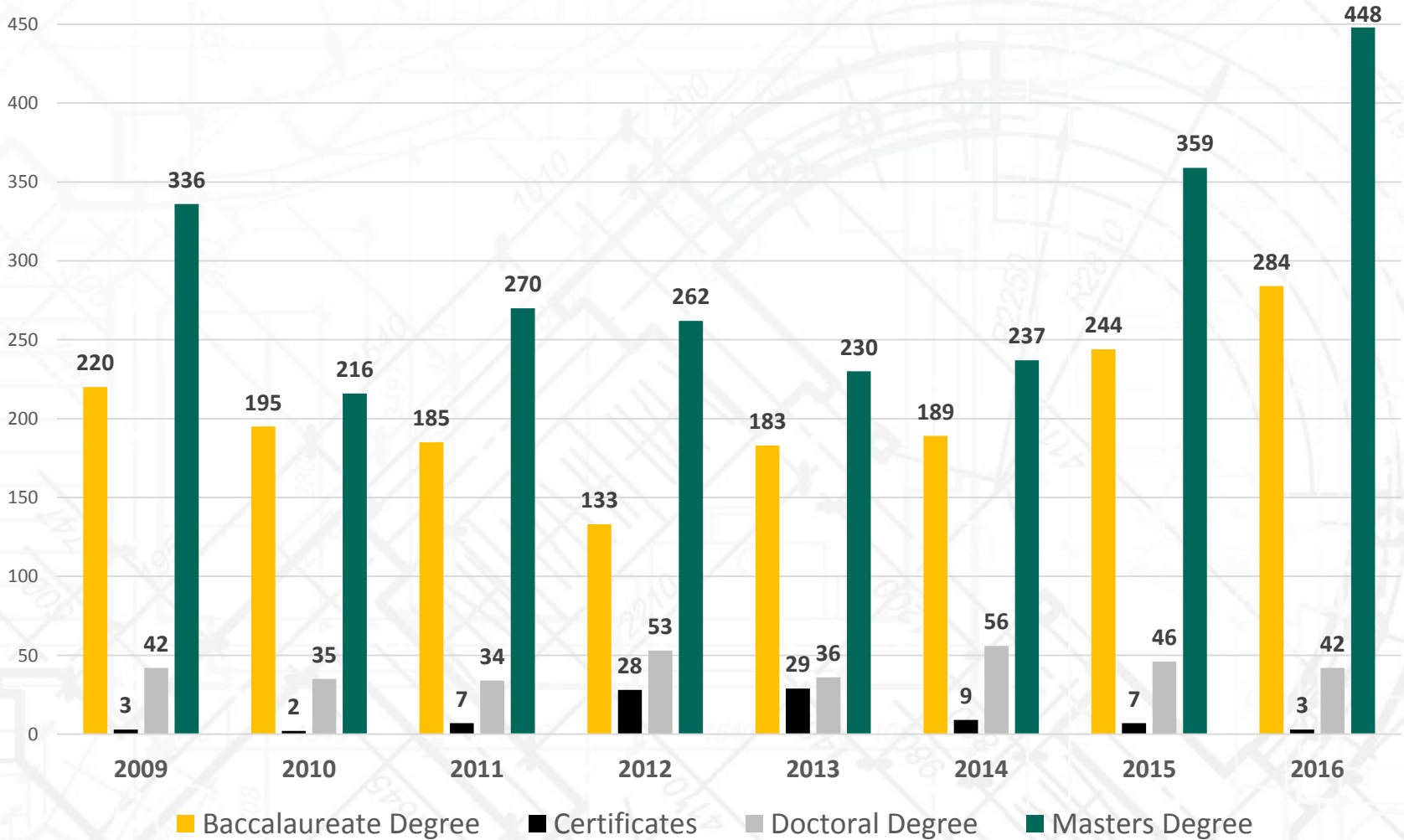
FTIAC Retention





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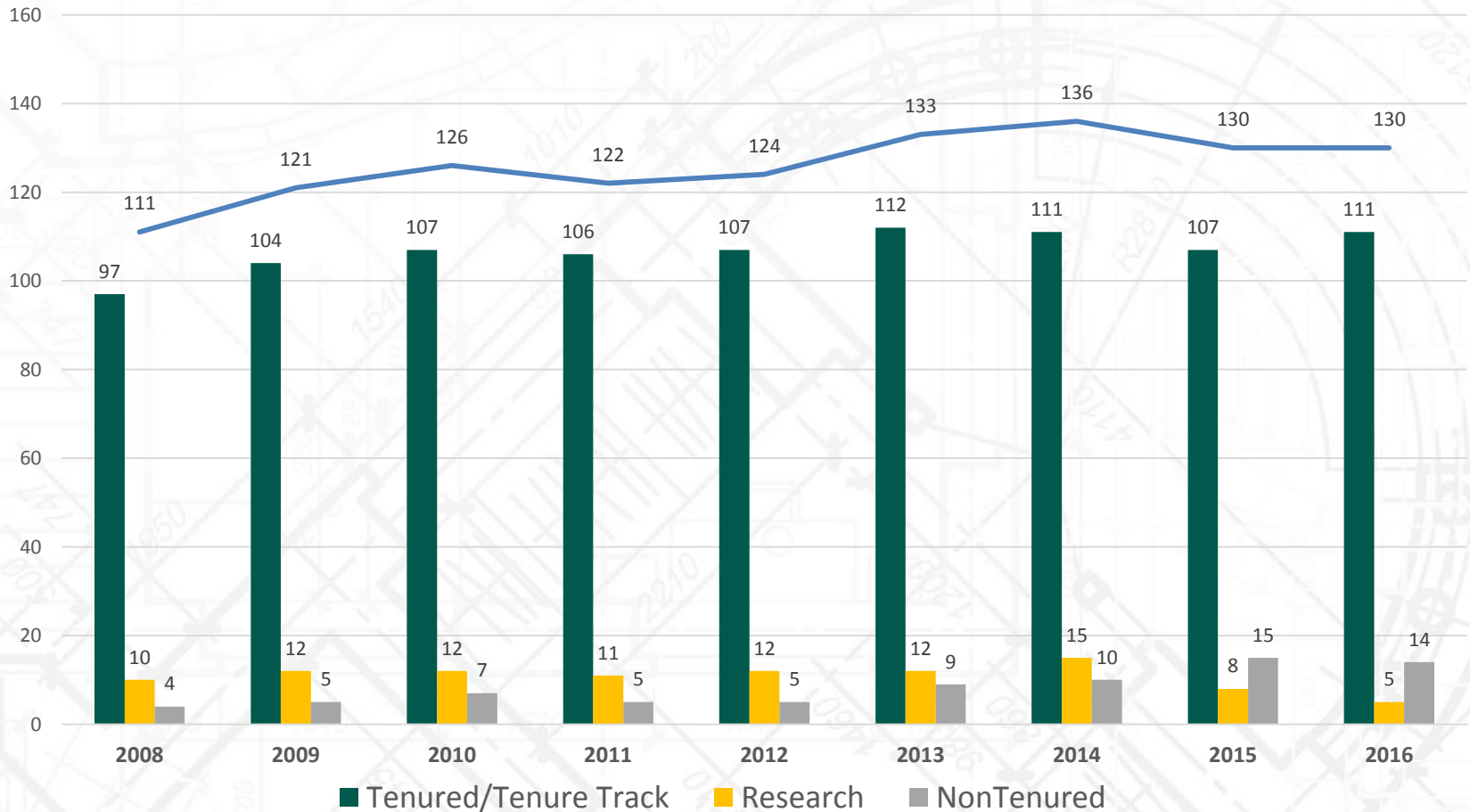
Degrees Awarded





Number of Faculty

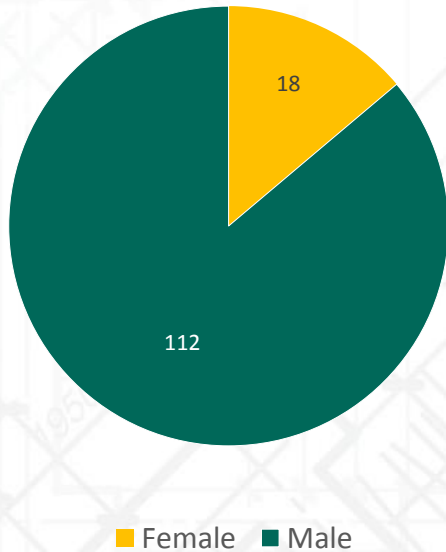
5 additional faculty positions are currently open



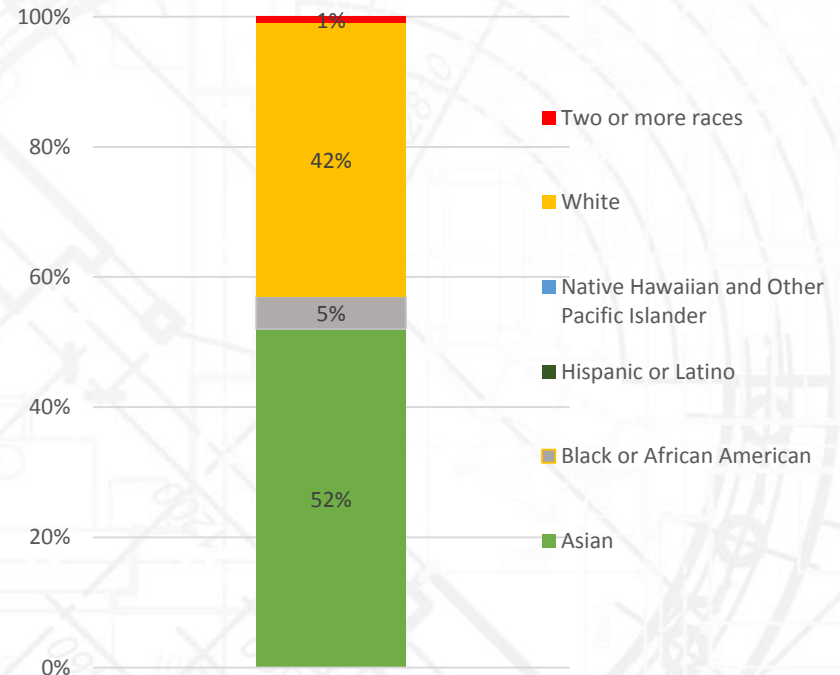


Faculty Demographics

Faculty by Gender



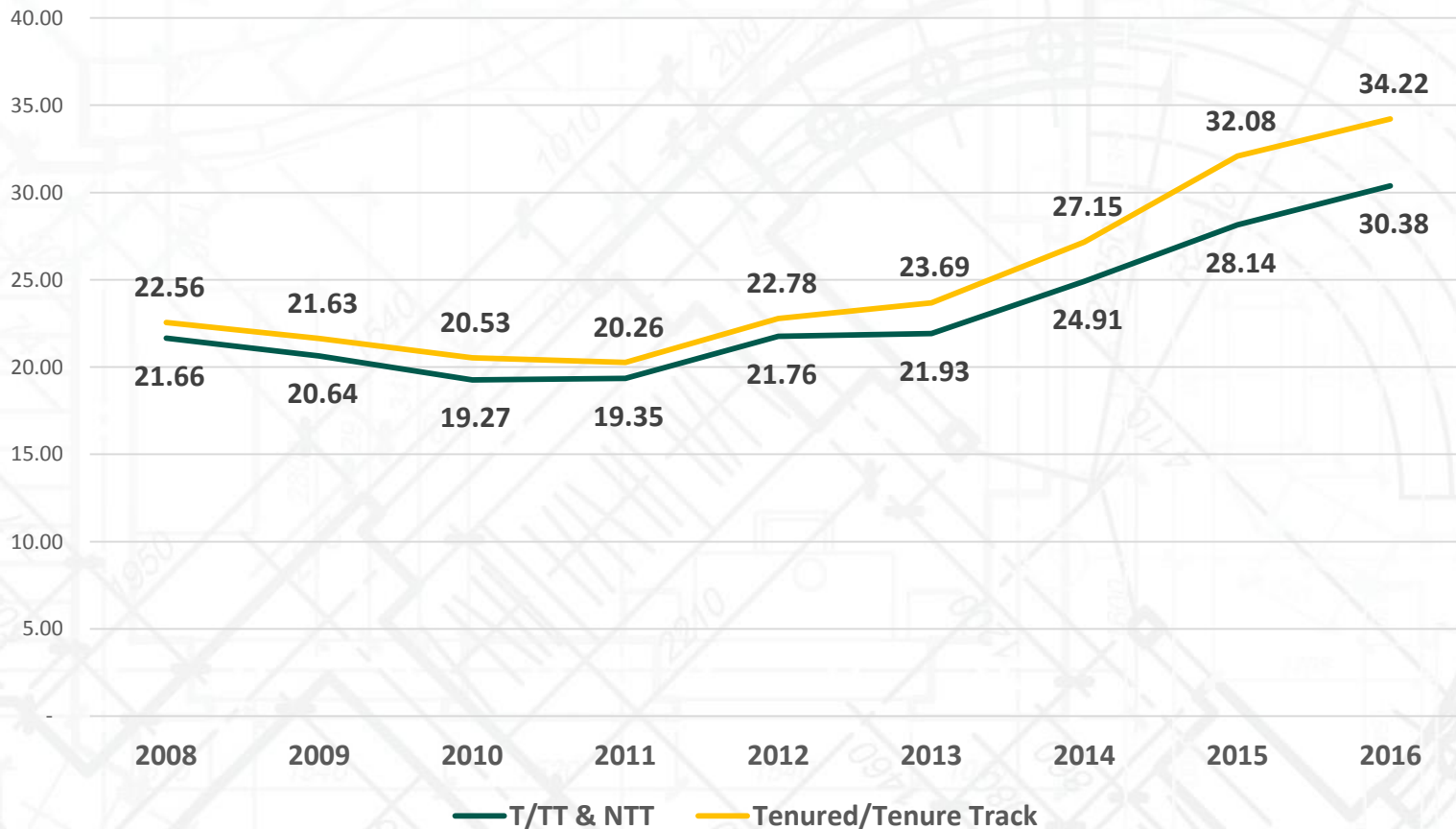
Faculty by Ethnicity





Instructional Investment

Student:Faculty Ratio



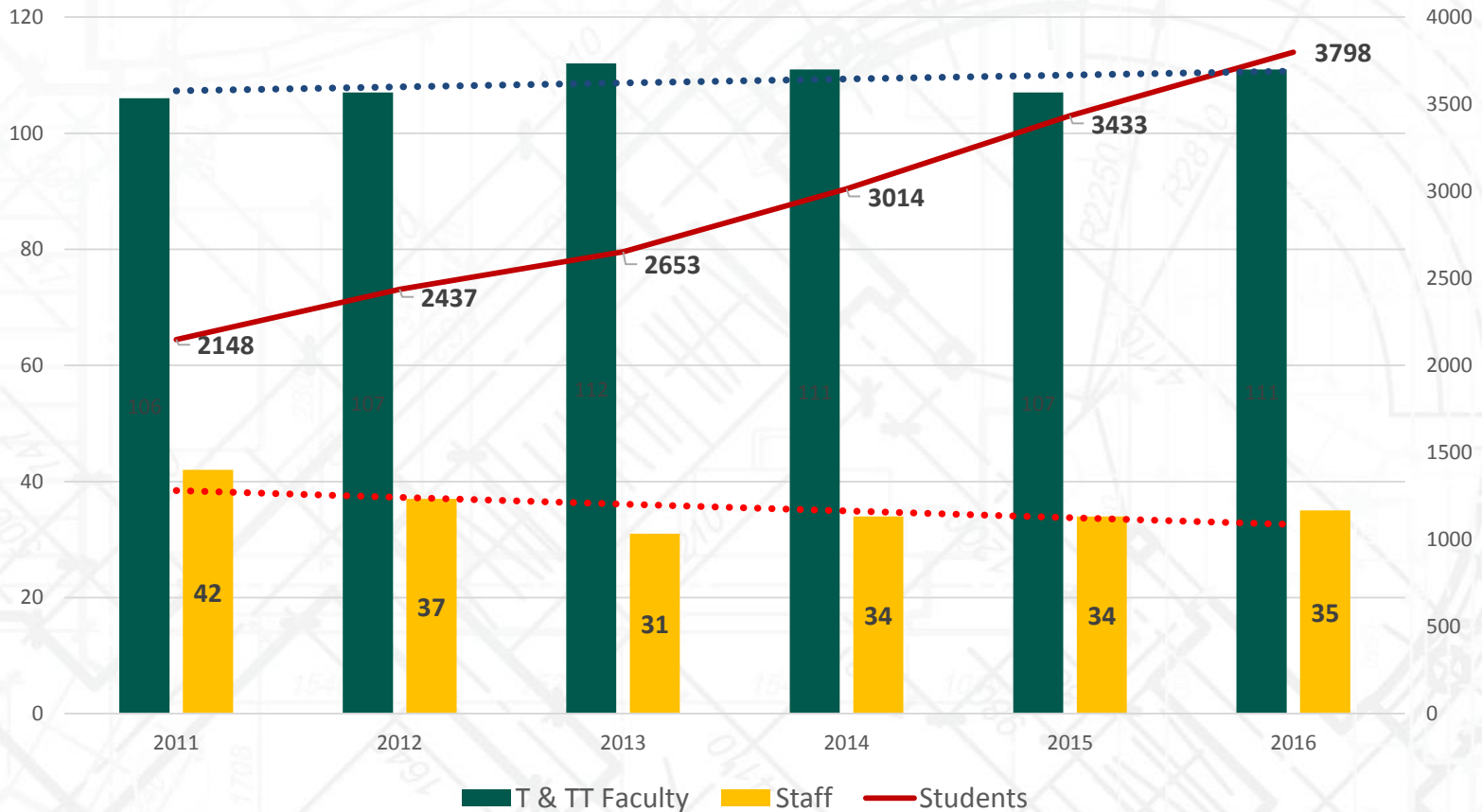
FY15 – 17 includes 6 lecturers provided by the Provost's Office for a 3 year period



Instructional Investment

Faculty – Staff – Students

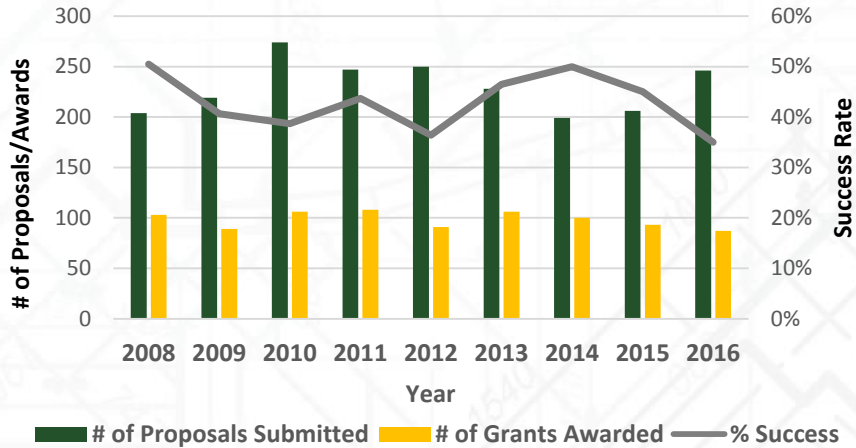
▼ 5 additional faculty positions are currently open



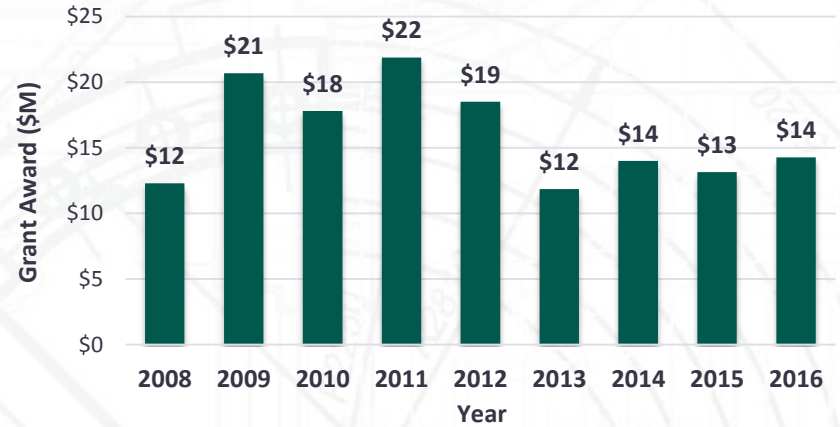


Research

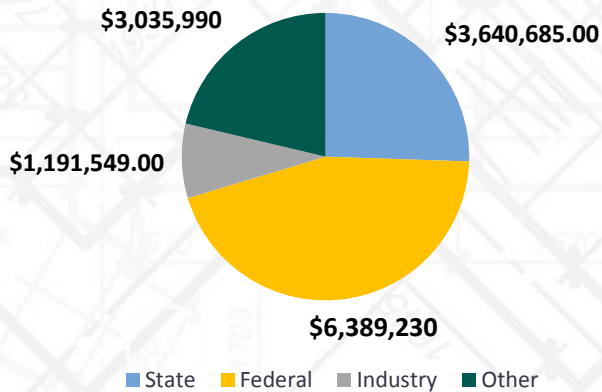
Proposals, Awards, Success Rate



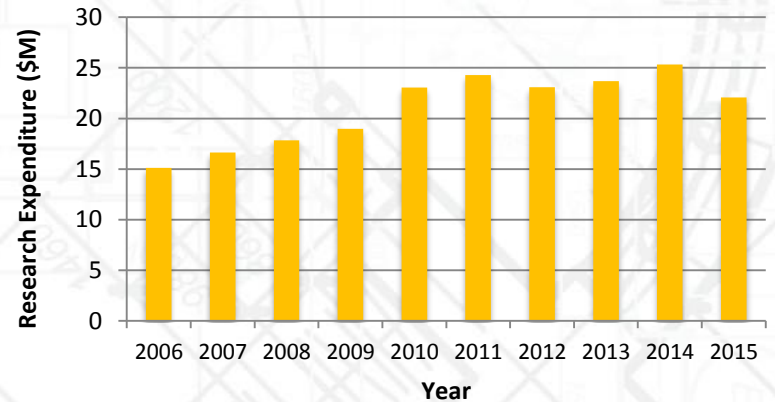
Annual Grant Activity



Grant & Contract Distribution



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





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



COLLEGE of ENGINEERING

5 High-Impact Practices

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



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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



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EOS Program



College of Engineering

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.



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Development

Campaign Goal Progress

\$41.2 million
82% of goal of \$50M

As of September 30, 2016



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Innovation & Entrepreneurship

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.

SKYPERSONIC 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



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Questions & Answers

