



COLLEGE *of* **ENGINEERING**

**Presentation to the
Board of Governors
February 6, 2015**



COLLEGE of ENGINEERING

Overview – Student Success

Five Pillars of Student Success:

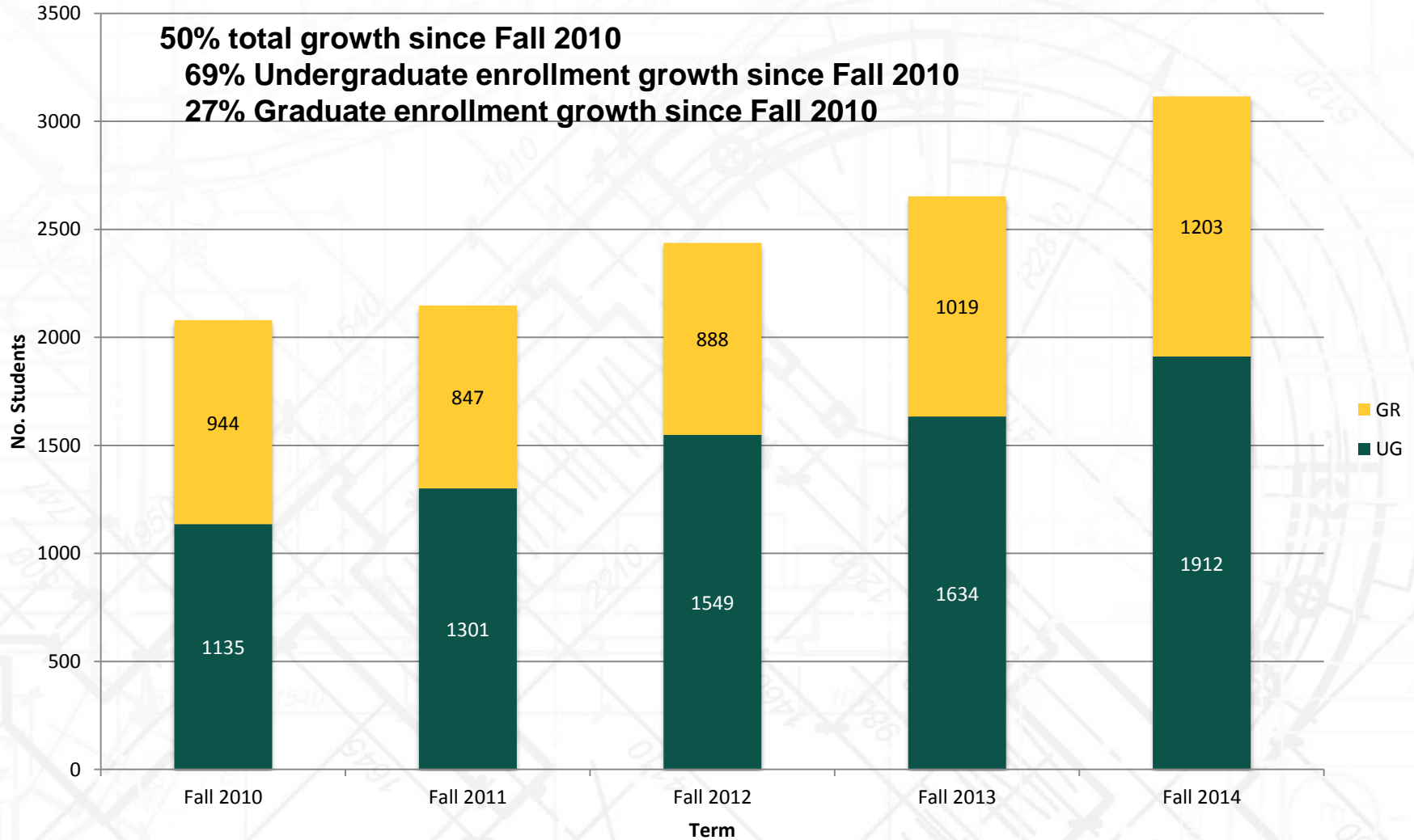
- ▲ **Experiential Learning**
Internships, co-ops, etc.
- ▲ **Hands-on Experience**
EcoCAR3, FSAE, etc.
- ▲ **Global Perspective**
Study/research/internship abroad
- ▲ **Undergraduate Research**
20 College-funded UROP per year
- ▲ **Scholarships**
Over 200 scholarships per year





Overview - Enrollment

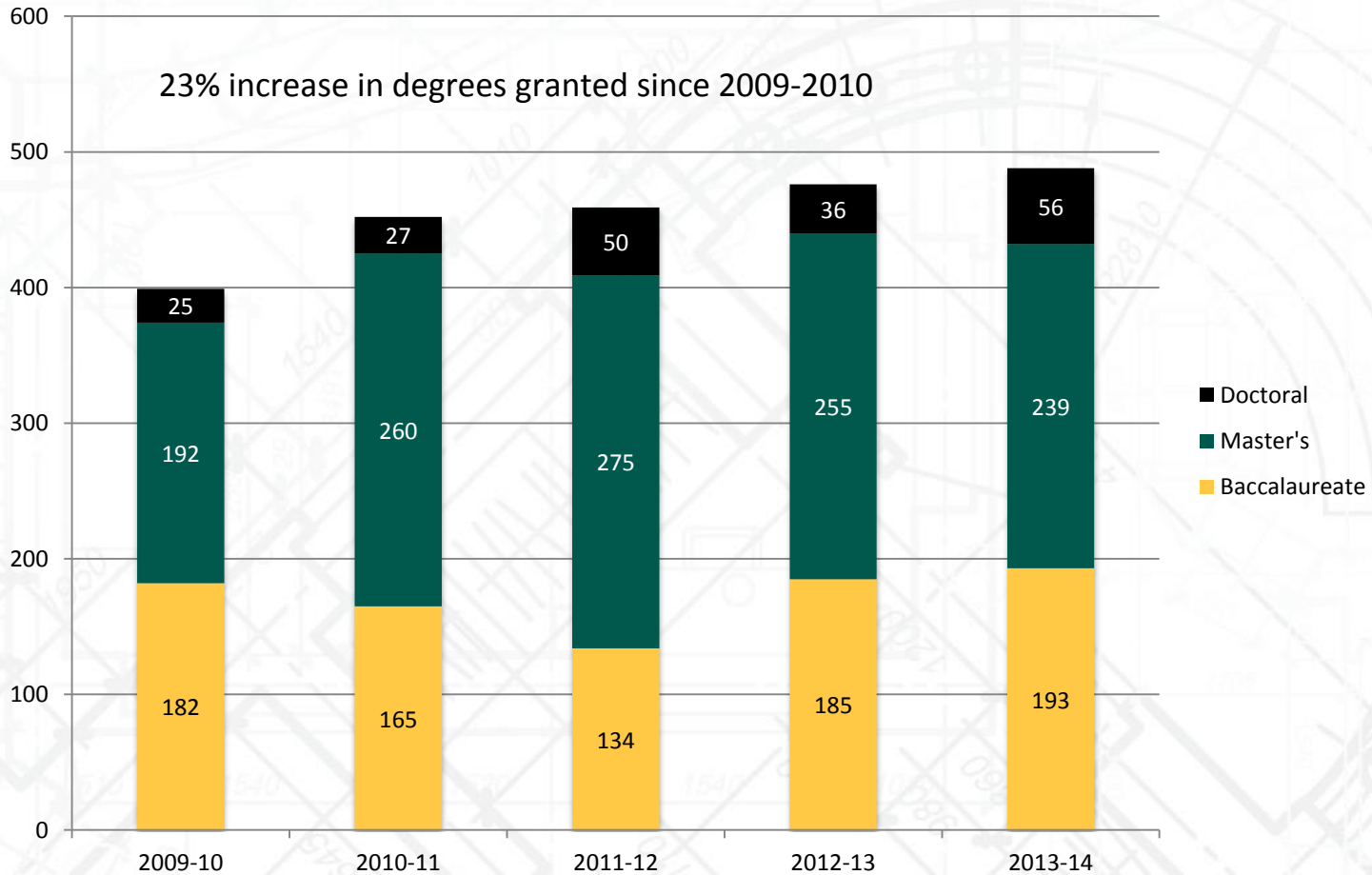
Student Headcount





Overview - Enrollment

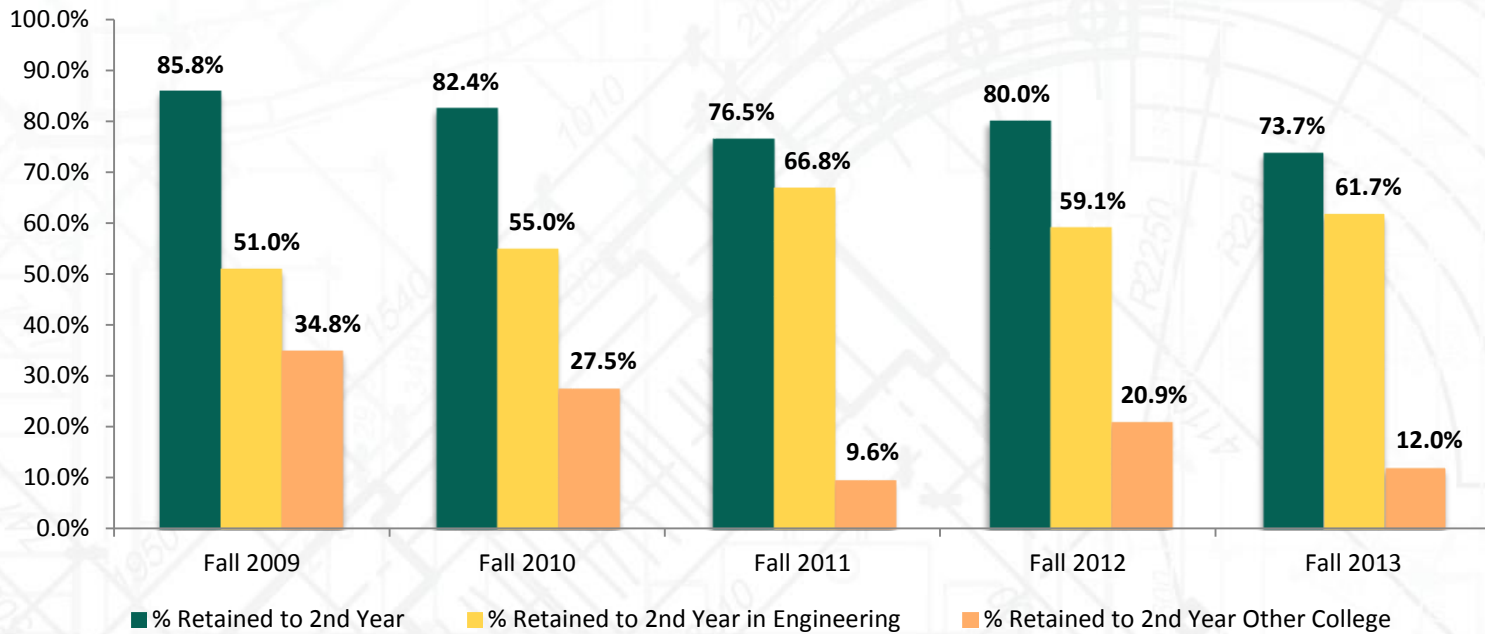
Degrees Granted





Overview - Enrollment

First to Second Year Retention Full-Time Engineering FTIAC's

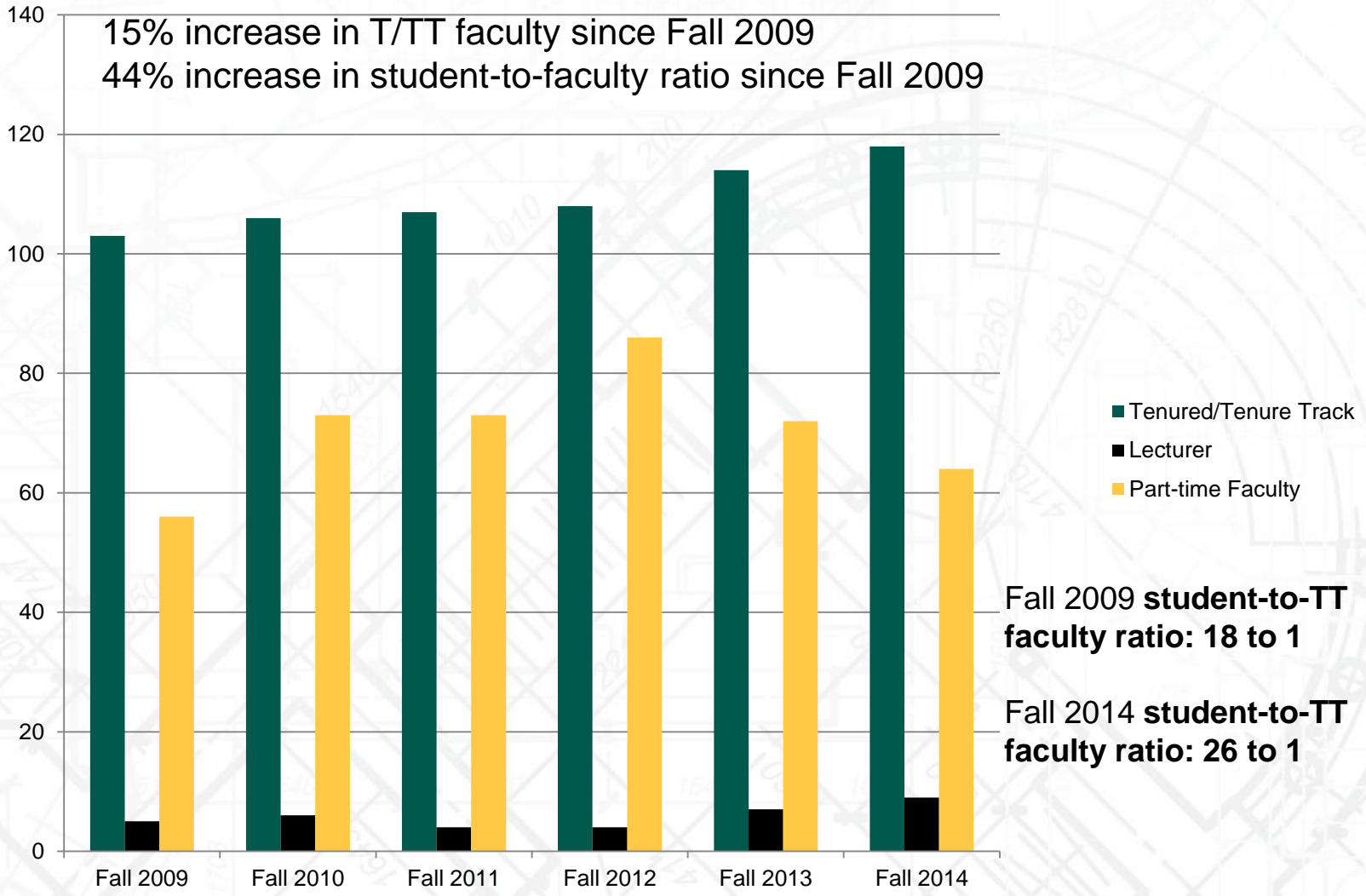


▲88% of students employed upon graduation had co-op/related experience

▲90% are employed in MI



Overview - Faculty



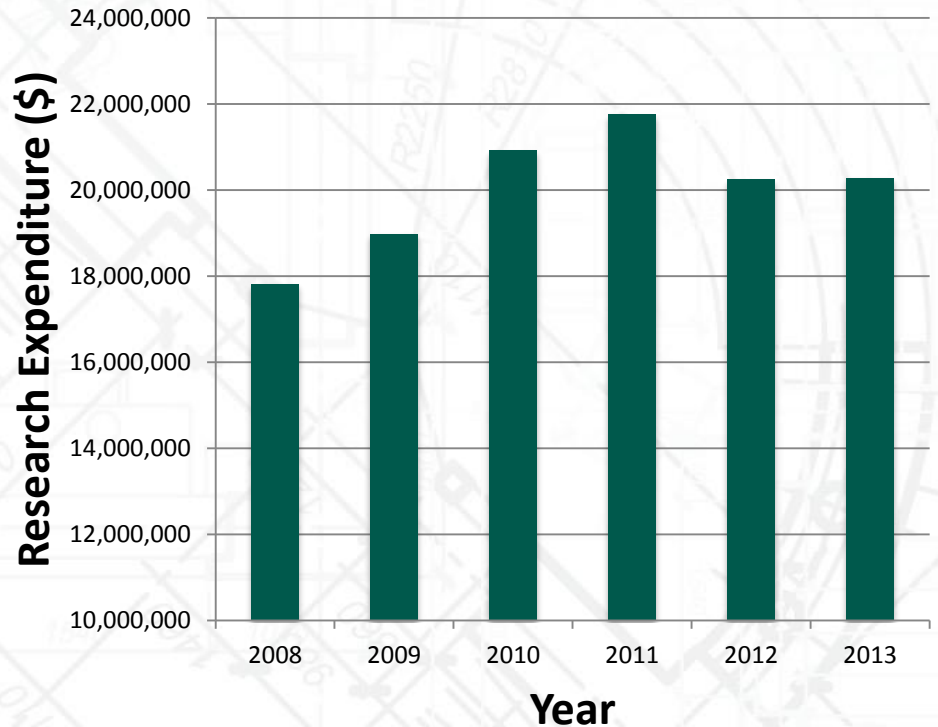


Overview - Research

Multi-Disciplinary Research Thrust Areas:

- ▲ Biomedical Research
- ▲ Automotive Safety
- ▲ Energy Solutions
- ▲ Advanced Manufacturing and Materials
- ▲ Big Data and Business Analytics
- ▲ Transportation Research Group
- ▲ Center for Automotive Research

Historical Research Expenditure Data Reported to NSF
(2008 – 2013)





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Recent Developments

New Degree Programs:

- ▲ Nanoengineering Certificate
- ▲ Big Data & Business Analytics
- ▲ Embedded Systems (under development)
- ▲ Cybersecurity (under development)

CoE Living and Learning Community

Industry Sponsored Capstone Design Projects

Annual Design Day (late April)





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Recent Developments

James and Patricia Anderson Engineering Ventures Institute

- Translating Research and Development to Innovation and Entrepreneurship (R&D to I&E)

Community Engagement

- Summer enrichment programs
- Detroit Area Pre-College Engineering Program (DAPCEP)
- University Prep High School - First Robotics Team
- Successful partnerships with C² pipeline and MCWT



C² Pipeline is a College/Career Ready program that incorporates S.T.E.M. in a project based hands on learning environment with a focus on Health Careers
MCWT is Michigan Council of Women in Technology





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Philanthropy

Development and Alumni Relations:

Gifts and Pledges:

- ▲ Raise approximately \$2M each year from alumni, friends, corporations and foundations
- ▲ Secured \$35M toward to \$50M-\$75M Pivotal Moments campaign goal

Campaign Priorities:

- ▲ James and Patricia Anderson Engineering Ventures Institute, \$25 million gift announced Oct. 2014
- ▲ *Engineering Student Innovation Center, planning grant secured from Ford Motor Company Fund*
- ▲ *STEM Summer Academy for Future Engineers, anticipating announcement from major company*
- ▲ Pipeline Scholarships to improve student graduation rates to <6 years, multiple \$100,000 commitments





Key Issues

- ▲ 50% rapid growth in enrollment presents challenges
- ▲ Need to invest in faculty and staff in order to maintain quality
- ▲ Space Challenges
 - ▲ New faculty (office and research space)
 - ▲ Student organizations
 - ▲ Staff
- ▲ Need to ensure proper Graduate Assistant (GTA) support for Ph.D. students
- ▲ Need to update facilities to properly support teaching (technicians, maintenance, etc.)





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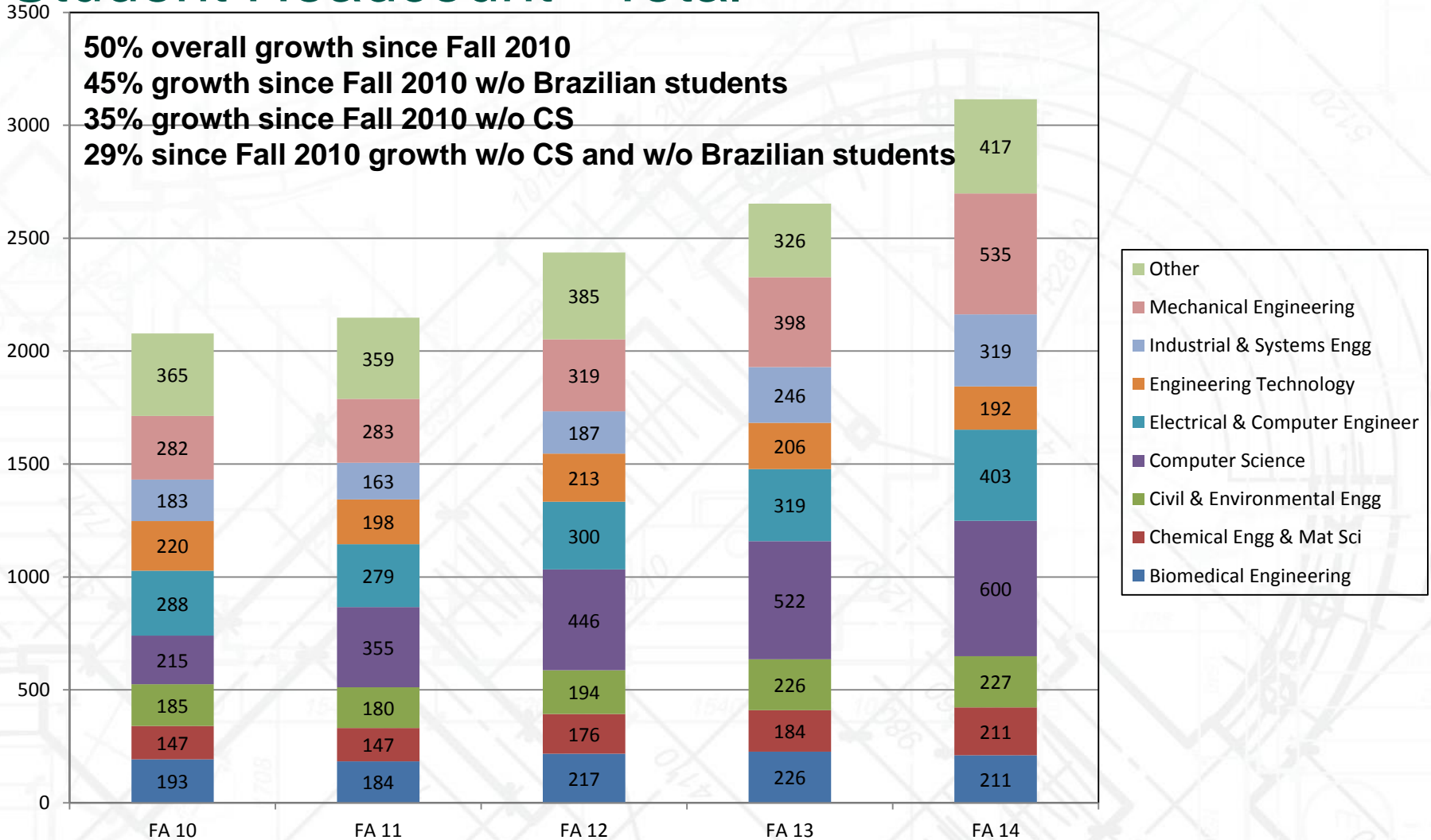
Questions & Answers





Supplemental Data

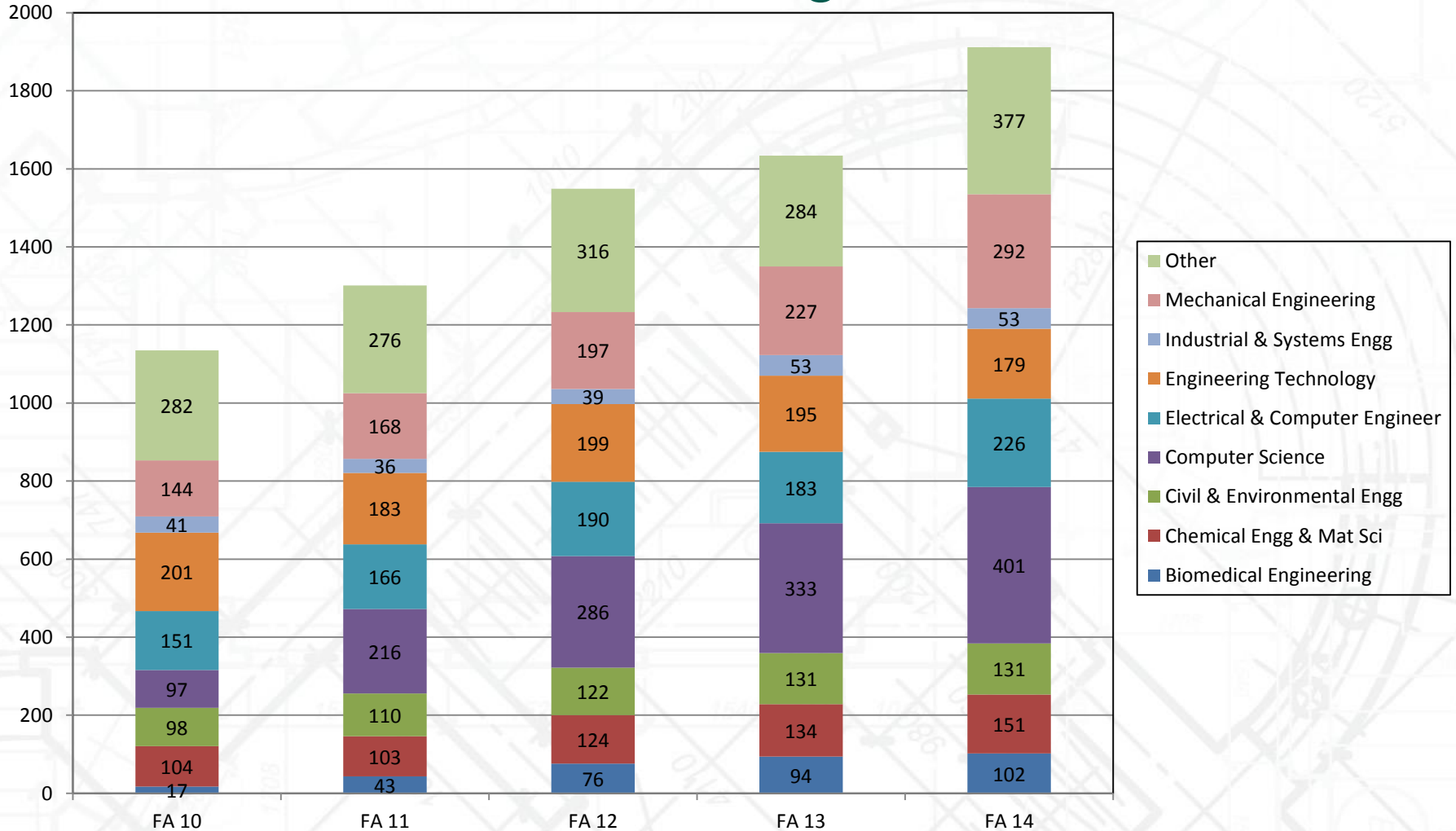
Student Headcount - Total





Supplemental Data

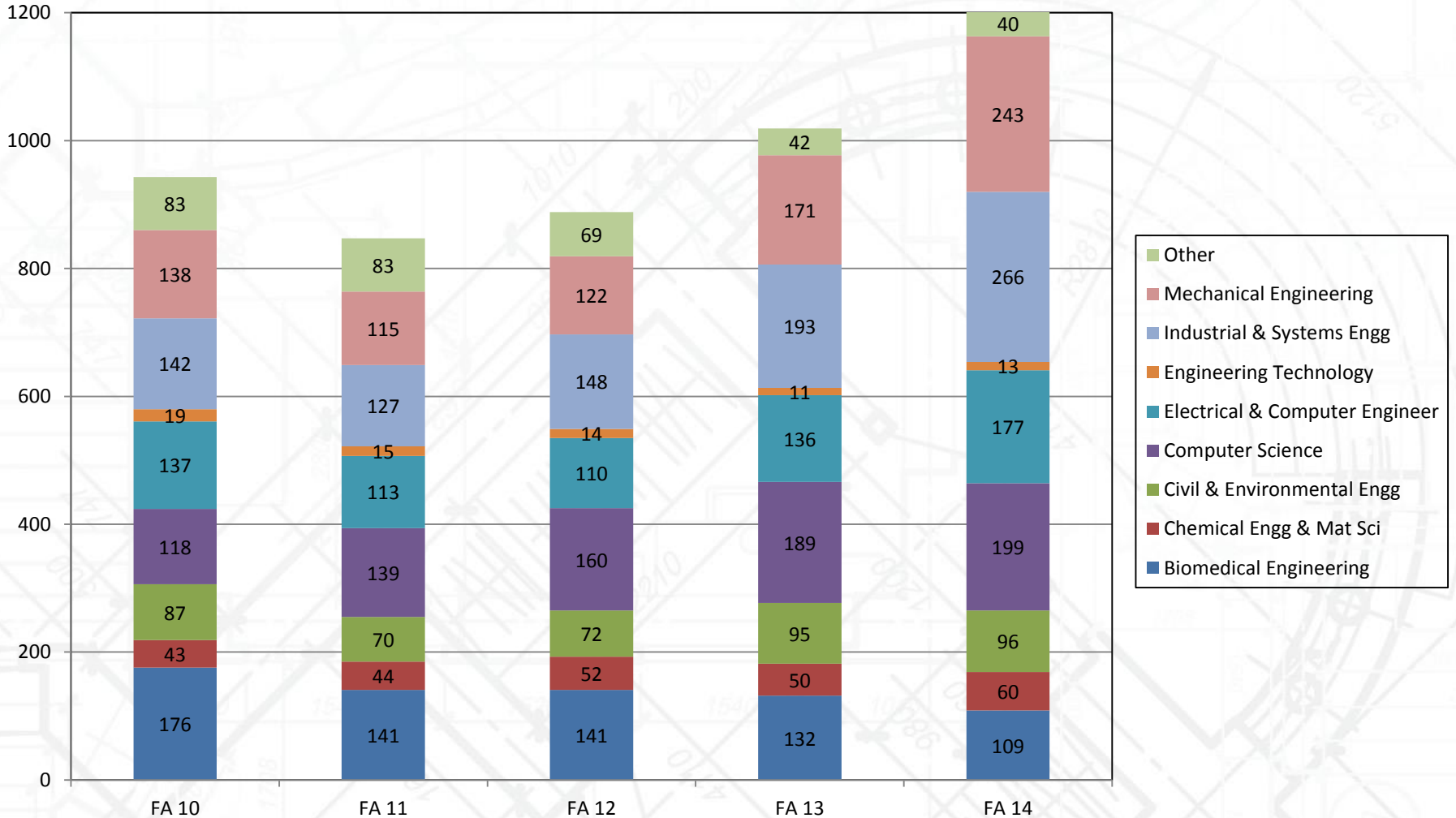
Student Headcount - Undergraduate





Supplemental Data

Student Headcount - Graduate





Supplemental Data

% Increase by Department: Fall 2010 – Fall 2014

