

CornellEngineering Update

Lance R. Collins
Dean of Engineering

March 30-31, 2017

CornellEngineering



Agenda

- General updates
 - College Leadership Updates
 - New Faculty, Awards
 - Research and Graduate Studies Highlights
 - Admissions Highlights
 - Diversity Highlights
 - New Visions Engineering
 - Student Project Team Highlights
 - Engineering Career Center Highlights
- Facilities Update
- Fiscal Year '17 Giving Update

President-elect of Cornell University



Martha Pollack
President
Cornell University

- Joining Cornell on April 17, 2017
- Will have tenured appointments in Departments of Computer Science and Information Science
- Provost and Executive Vice President for Academic Affairs at University of Michigan. Previously, Professor of Computer Science and Engineering, College of Engineering, and Professor of Information, School of Information
- Degrees received
 - Bachelor's (1979) in Linguistics, Dartmouth College
 - M.S.E (1984) and Ph.D. (1986) in Computer and Information Science, University of Pennsylvania
- Research Focus – Design of intelligent technology to assist people with cognitive impairment

Associate Dean for Alumni Affairs and Development



Carol Packard
Associate Dean for Alumni
Affairs and Development

- Joining Cornell on April 10, 2017
- Director of Development and Alumni Relations, College of Earth and Mineral Sciences, Penn State. Previously, Director of Major Gifts, Associate Director of Development, College of the Liberal Arts, Penn State and Director, Business Development.
- Education
 - Bachelor of Arts with Honors (1999) in English Literature, Schreyer Honors College, Pennsylvania State University, University Park, PA.
 - Masters Candidate (May 2018) in Higher Education Administration, Pennsylvania State University, University Park, PA.

New Faculty

(Arrivals Summer 2017)



Francesco Monticone
Asst. Professor, ECE
(arrival January 2017)



Mert Sabuncu
Asst. Professor, ECE



Anil Damle
Asst. Professor, CS

New Faculty

(Arrivals Summer 2017)



Jeffrey Rzeszotarski
Asst. Professor, IS



Solon Barocas
Asst. Professor, IS



Karn Girotra
Professor
Cornell Tech/Johnson School

Major Faculty Awards

- **American Physical Society Fellow**
 - Mingming Wu (BEE)
- **American Institute of Chemical Engineers Fellow**
 - Yong Joo (CBE)
- **American Institute of Aeronautics and Astronautics Fellow**
 - Mark Psiaki (Professor Emeritus, MAE)
- **American Association for the Advancement of Science (AAAS) Fellow**
 - Sidney Leibovich (Professor Emeritus, MAE)
- **Distinguished Member of the American Society of Civil Engineers**
 - Ken Hover (CEE)



Major Faculty Awards

- **Friendship Award** - *China's highest award given to "a foreign expert who has made an outstanding contribution to China's economic and social progress"*
 - John Hopcroft (CS)
- **National Academy of Inventors**
 - David Fischell (adjunct professor, BME and CEO of Angel Medical Systems, Inc.)
- **Prince Sultan Bin Abdulaziz International Prize for Water**
 - Peter Loucks (CEE)
- **2017 European Association for Theoretical Computer Science (EATCS) Award**
 - Eva Tardos (CS)

Major Faculty Awards

- **Alfred P. Sloan Foundation Research Fellows**
 - Ilana Brito (BME)
 - Guillaume Lambert (AEP)
- **2017 Young Investigator Research Award – Society For Biomaterials**
 - Ankur Singh (MAE)
- **2017 Young Investigator Research Award – Air Force Office of Scientific Research**
 - Ross Knepper (CS)
- **2017 Young Investigator Research Award – Office of Naval Research**
 - Robert Shepherd (MAE)

Major Faculty Awards

- **Google Faculty Research Award**
 - Rachit Agarwal (CS)
 - Lorenzo Alvisi (CS)
 - Robbert van Renesse (CS)
 - Adrian Sampson (CS)
 - Immanuel Trummer (CS)
- **2016 SIAM Activity Group on Financial Mathematics and Engineering Early Career Prize**
 - Andreea Minca (ORIE)
- **2016 Ad Hoc Sensor Networks Technical Recognition Award**
 - Zygmunt Haas (ECE)
 -

Major Faculty Awards

- **NSF Faculty Early Career Development (CAREER) Award**
 - Ludmilla Aristilde (BEE)
 - Lena Kourkoutis (AEP)
 - Andreea Minca (ORIE)
 - Perrine Pepiot (MAE)
 - Meredith Silberstein (MAE)
 - Christoph Studer (ECE)
 - Fengqi You (CBE)



National Academy of Engineering



Darrell Schlom
Herbert Fisk Johnson Professor of
Industrial Chemistry (MSE)
Elected NAE 2017

- Joined Cornell faculty in 2008.
- Cited for his contributions to molecular-beam epitaxy "Materials-by-Design" of complex oxides impacting the integration of high dielectric oxides in semiconductor devices.
- Degrees received:
 - B.S. (1984) in Engineering and Applied Science, California Institute of Technology
 - M.S. (1989) in Electrical Engineering, Stanford University
 - Ph.D. (1990) in Materials Science and Engineering, Stanford University

Robert F. Smith, Cornell Entrepreneur of the Year 2017



Robert F. Smith '85
Founder, Chairman & CEO
Vista Equity Partners

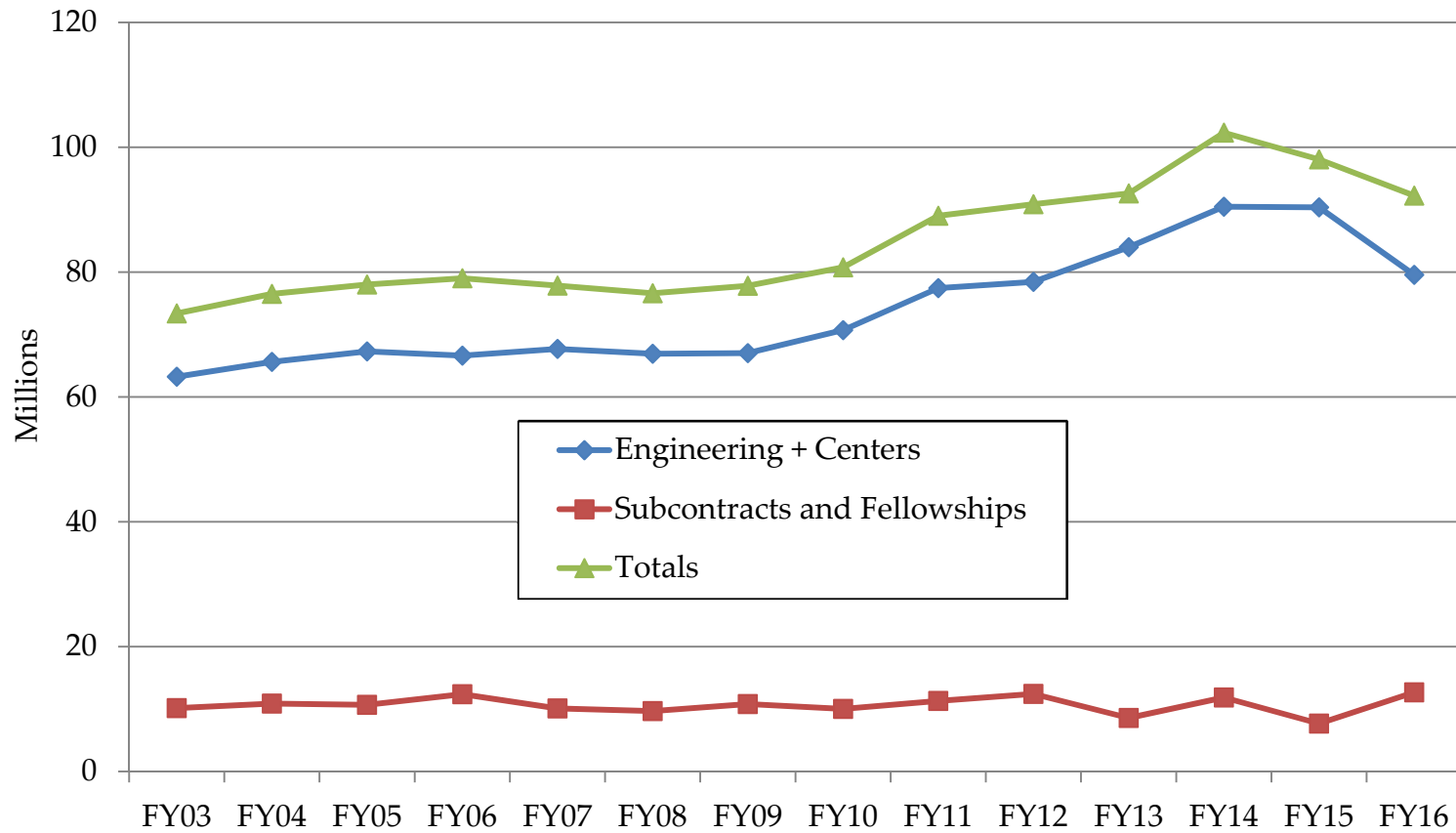
- Entrepreneurship at Cornell has announced that Robert F. Smith '85 has been named the Cornell Entrepreneur of the Year 2017.
- He will be honored November 3rd during Cornell's annual Entrepreneurship Summit in New York City.
- Smith's company, Vista Equity Partners, manages equity capital of more than \$28 billion and oversees a portfolio of more than 35 software companies that employ over 45,000 employees worldwide.
- Vista was named the world's #1 performing private equity firm, according to the HEC-Dow Jones annual ranking.

Research and Graduate Studies Highlights

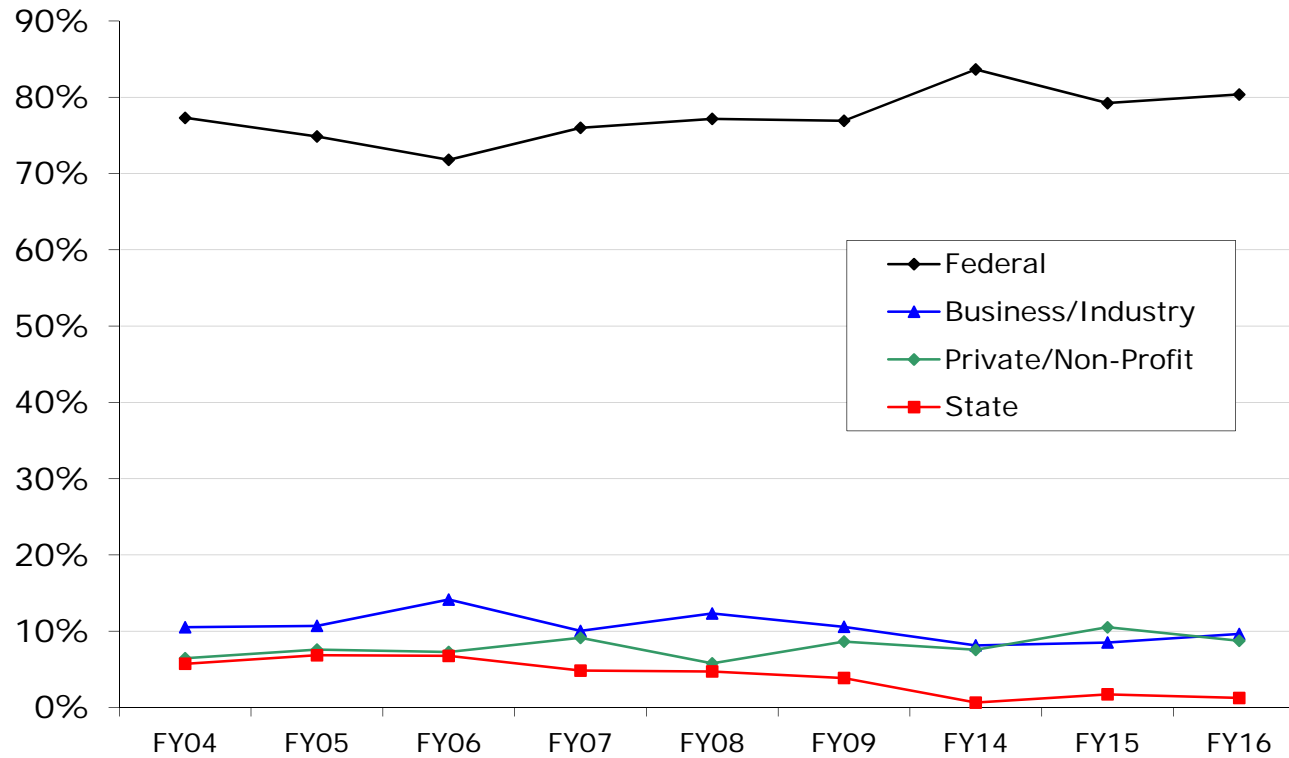
March 2017



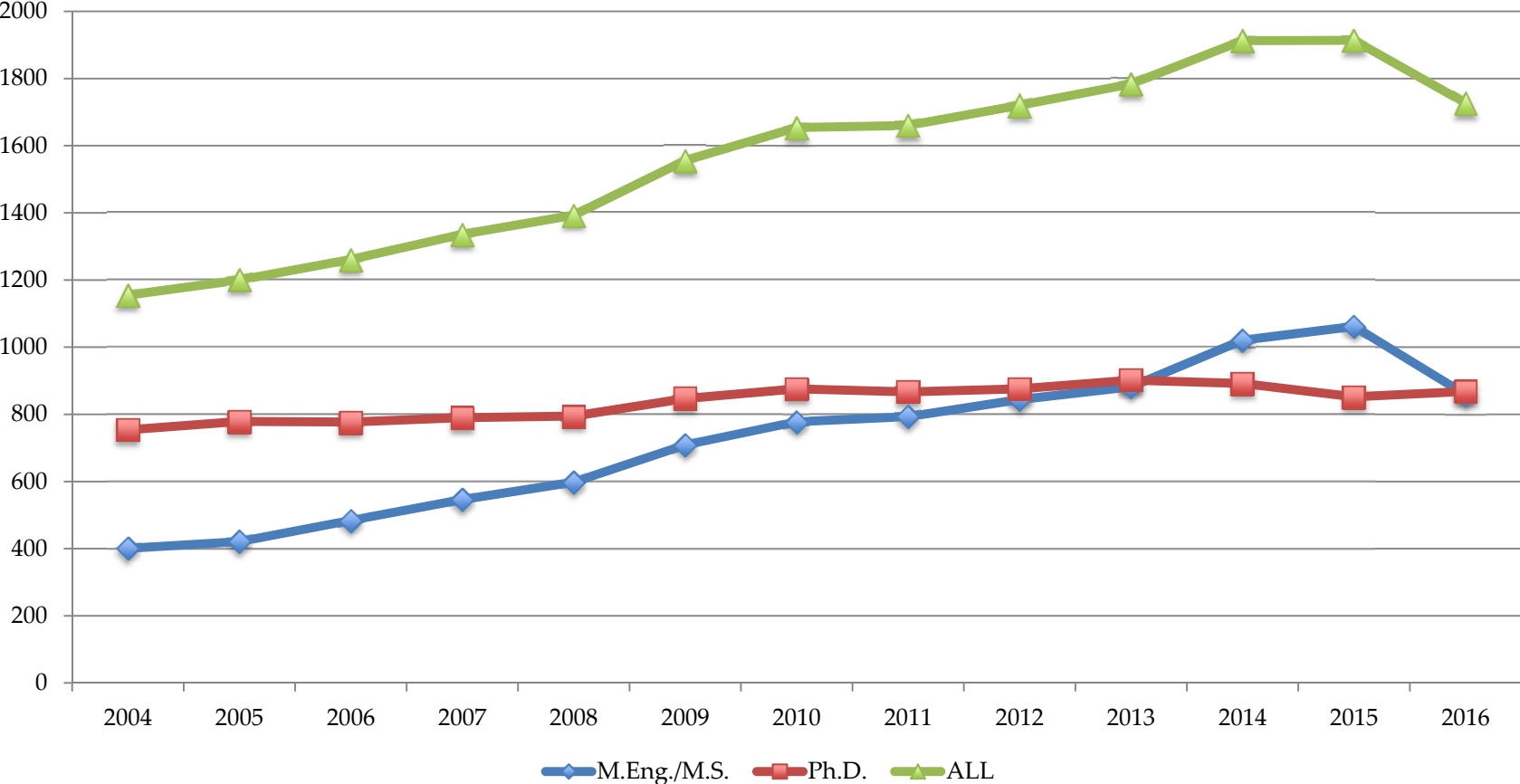
Research Expenditures



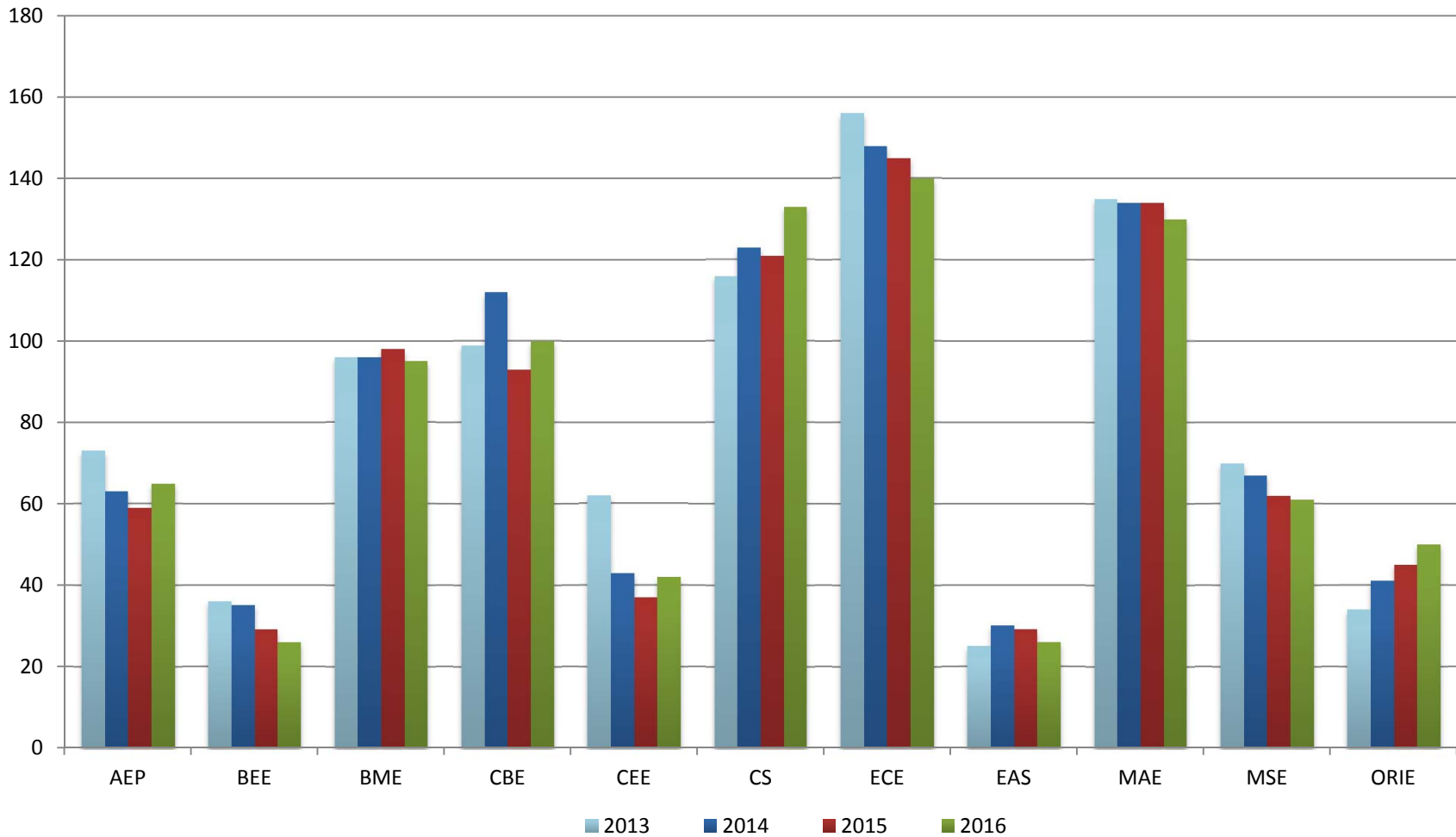
Percent Distribution of Research Expenditures



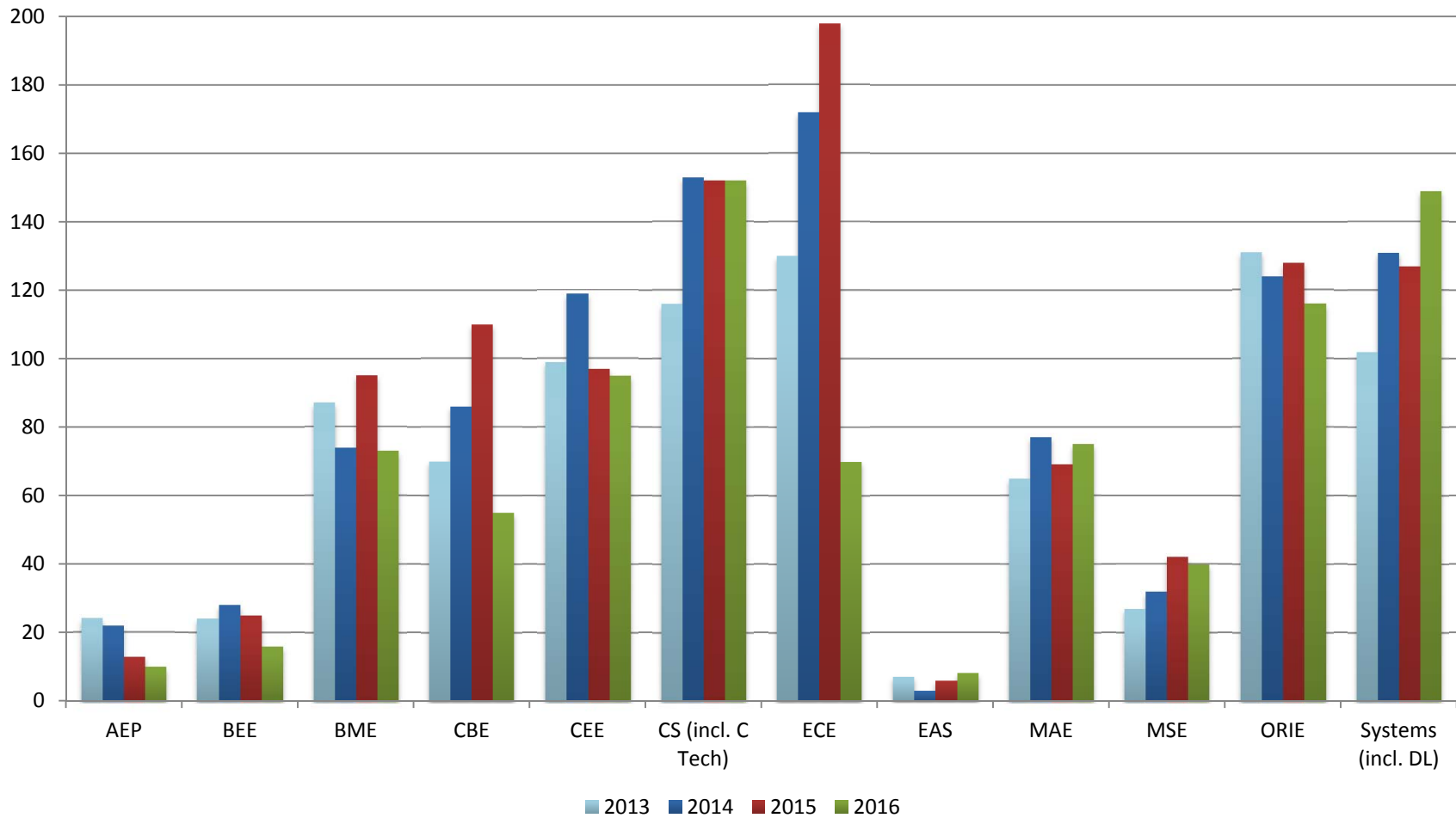
Graduate Student Enrollment



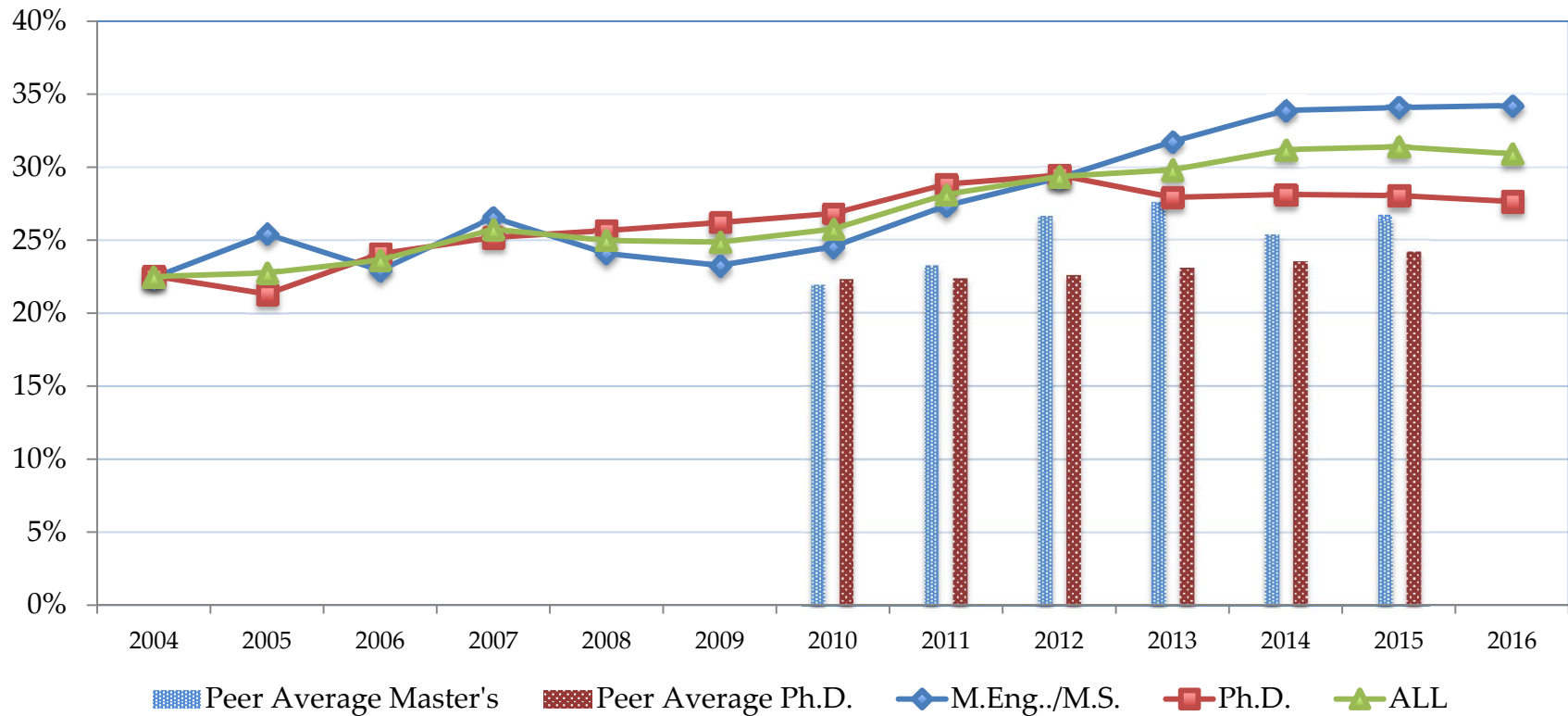
Ph.D. Enrollment by Field



M.Eng./M.S. Enrollment by Field

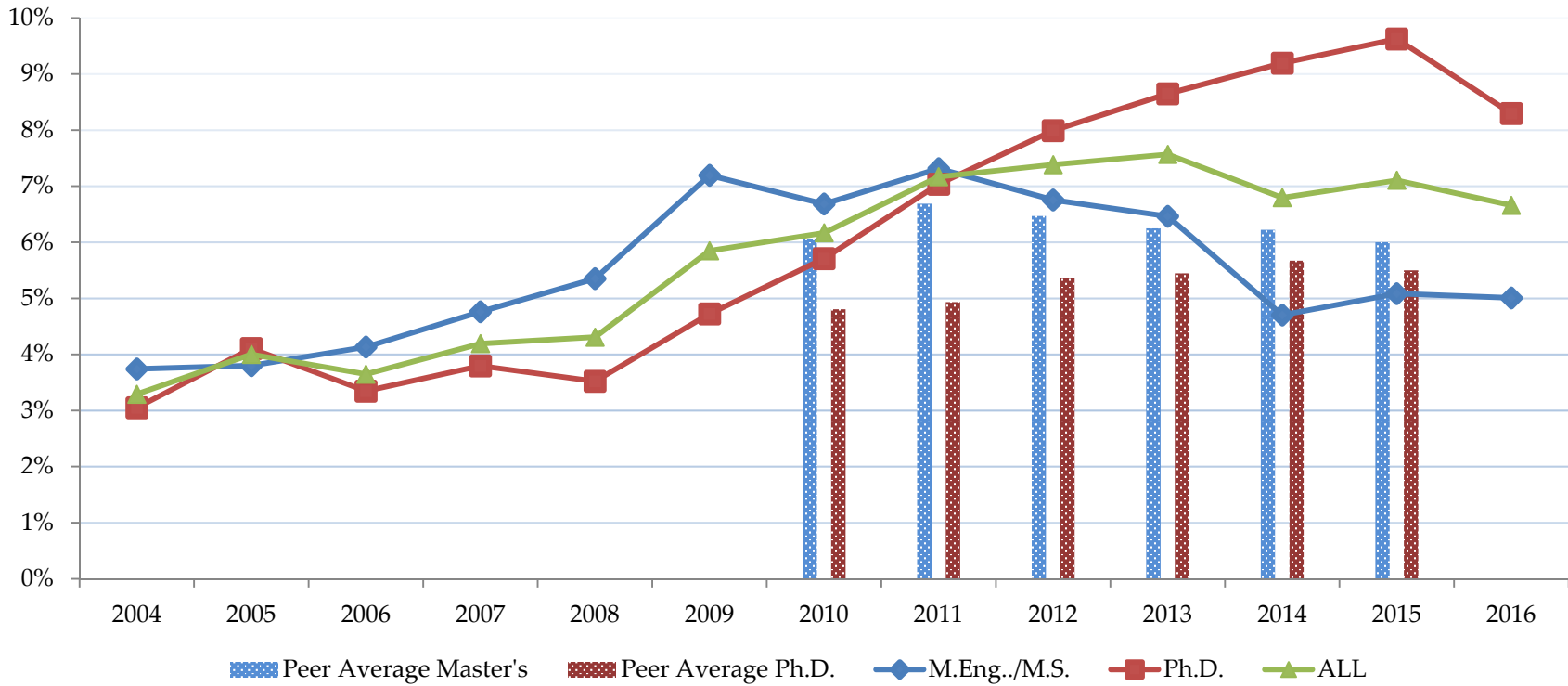


Graduate Student Enrollment Women



* Peers: Carnegie, Columbia, Georgia Tech, MIT, Princeton, Purdue, Stanford, UT Austin, Berkeley, UI-Urbana Champaign, Michigan
 Source for peer data: ASEE data mining tool

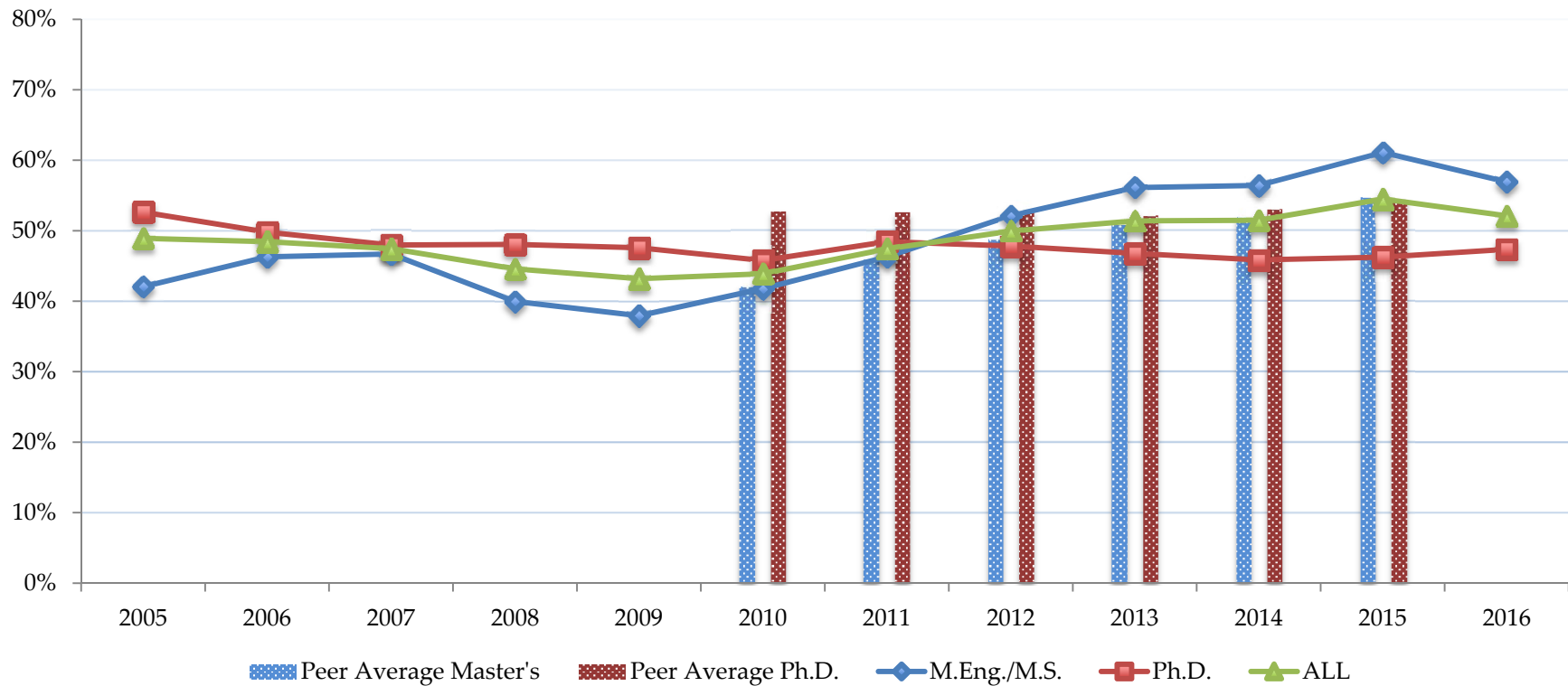
Graduate Student Enrollment Under-represented Minorities



* Peers: Carnegie, Columbia, Georgia Tech, MIT, Princeton, Purdue, Stanford, UT Austin, Berkeley, UI-Urbana Champaign, Michigan
 Source for peer data: ASEE data mining tool



Graduate Student Enrollment International



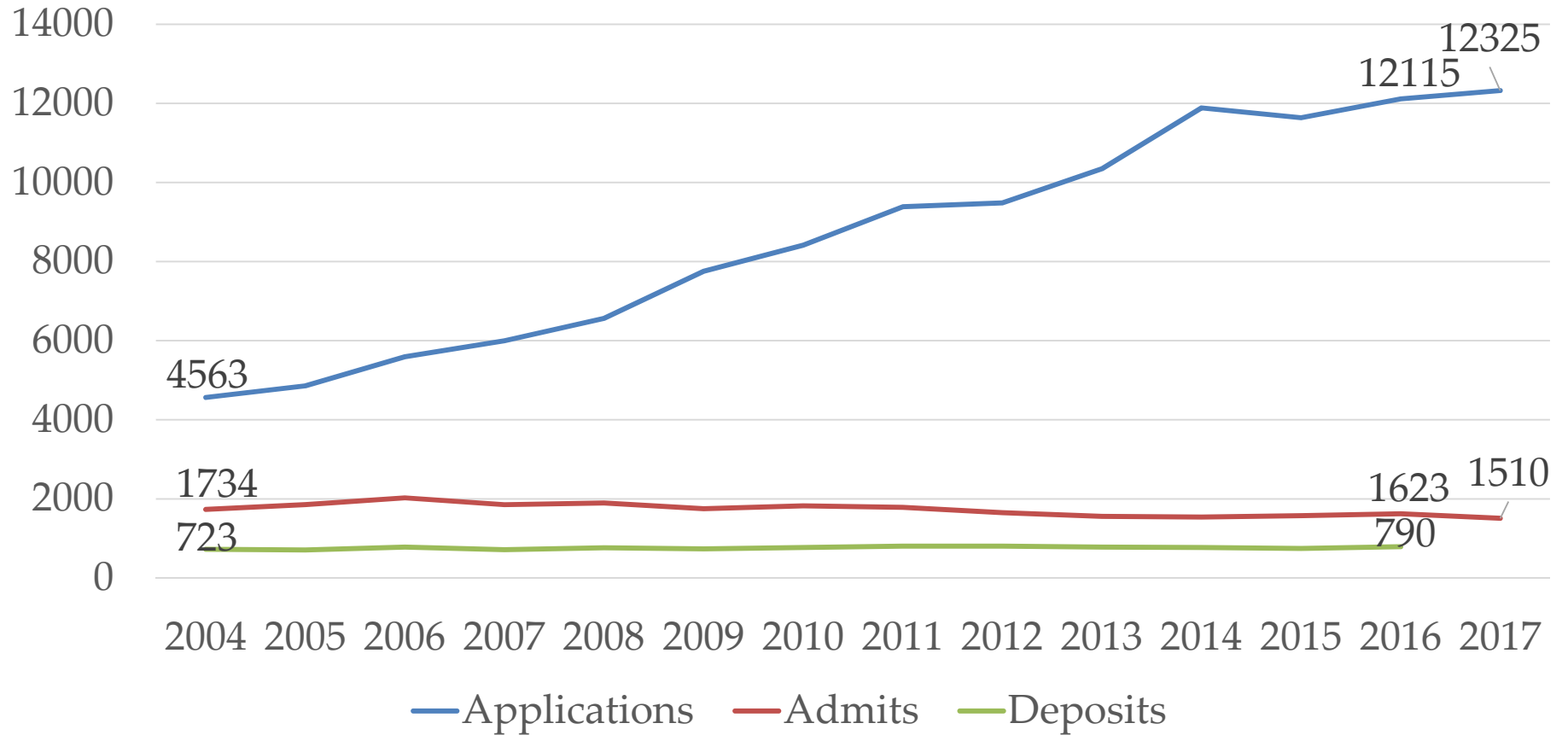
* Peers: Carnegie, Columbia, Georgia Tech, MIT, Princeton, Purdue, Stanford, UT Austin, Berkeley, UI-Urbana Champaign, Michigan
 Source for peer data: ASEE data mining tool

Admissions Preliminary Highlights

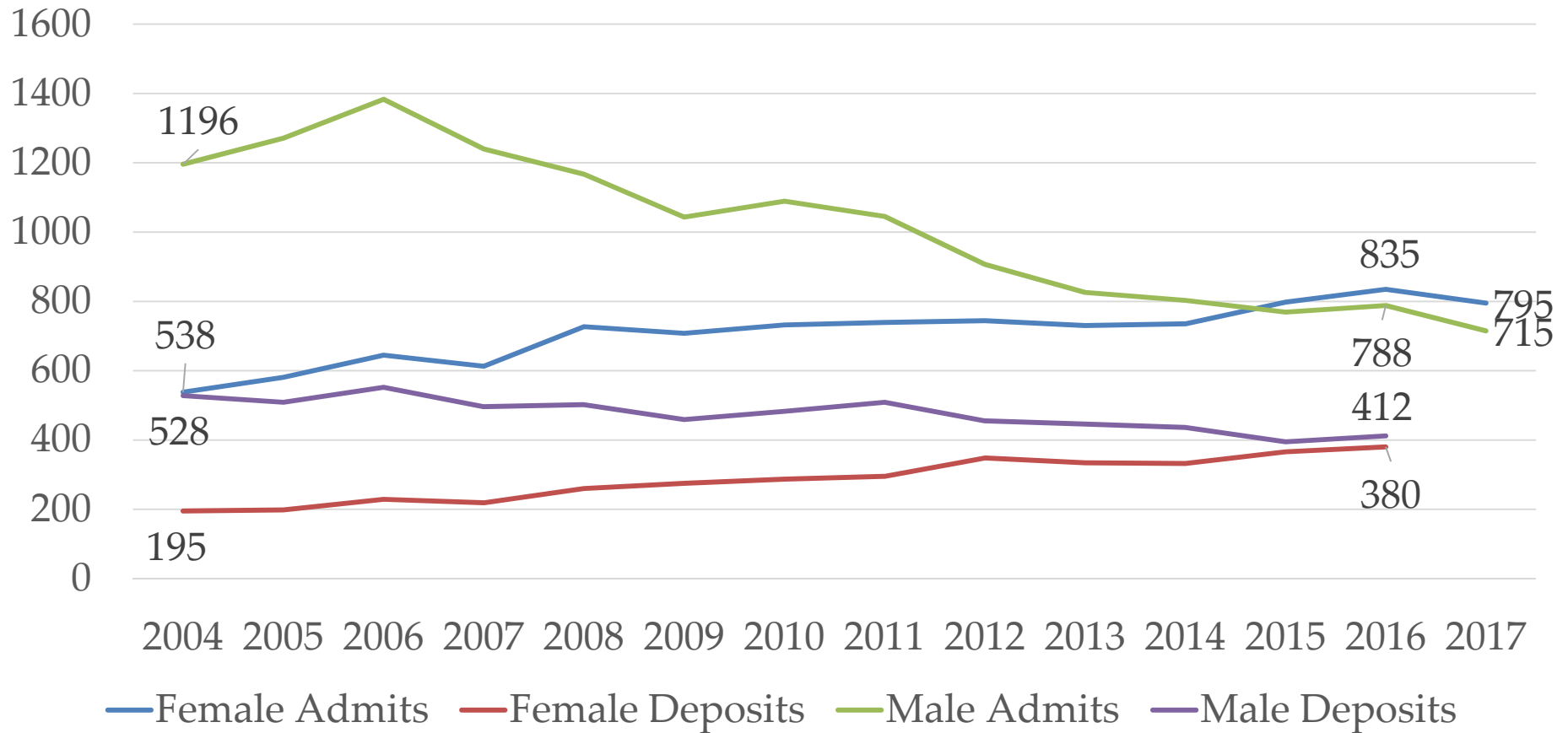
March, 2017



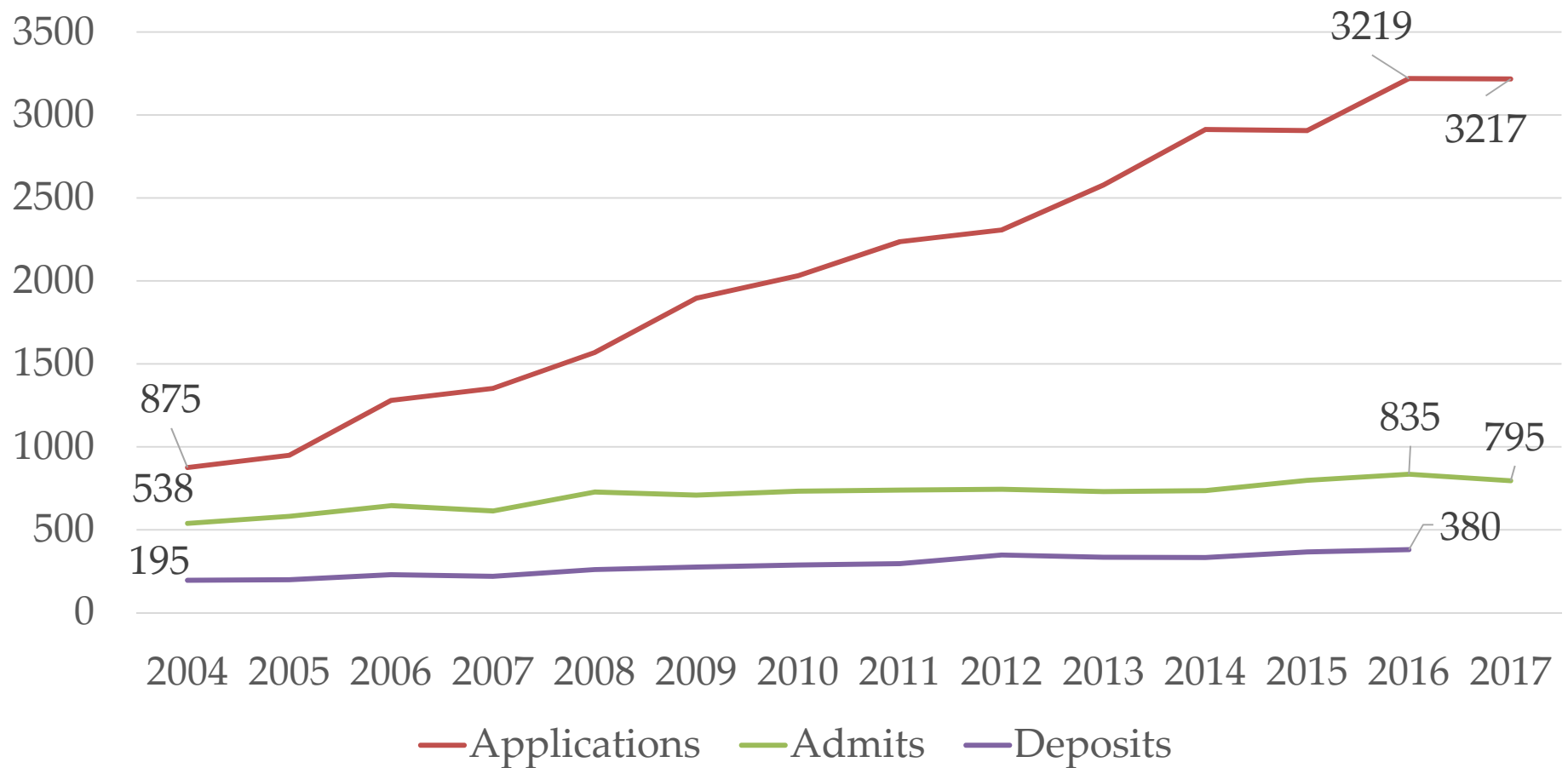
UG Engineering Applications, Admits, Deposits: 2004 – 2017



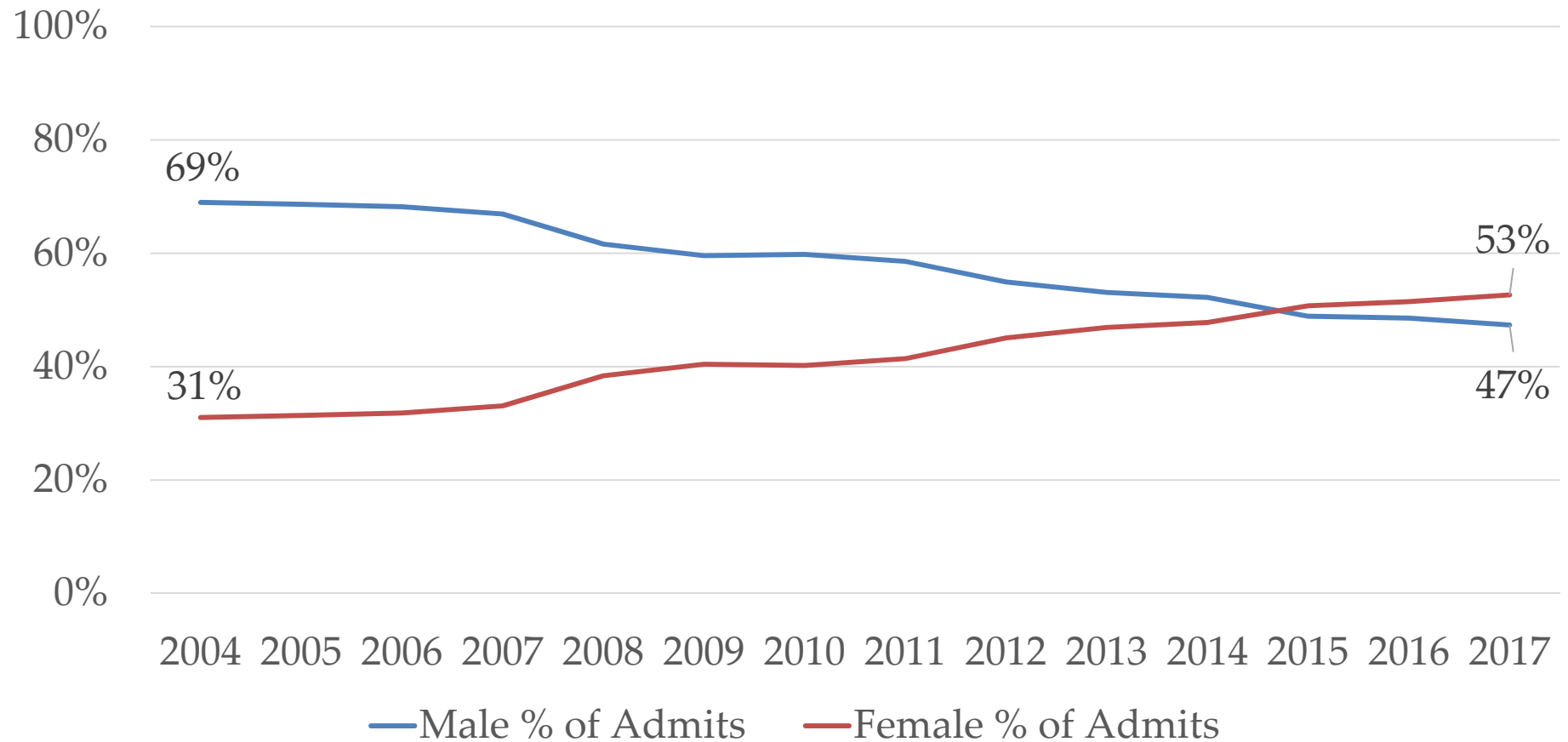
UG Female and Male Admits and Deposits: 2004 - 2017



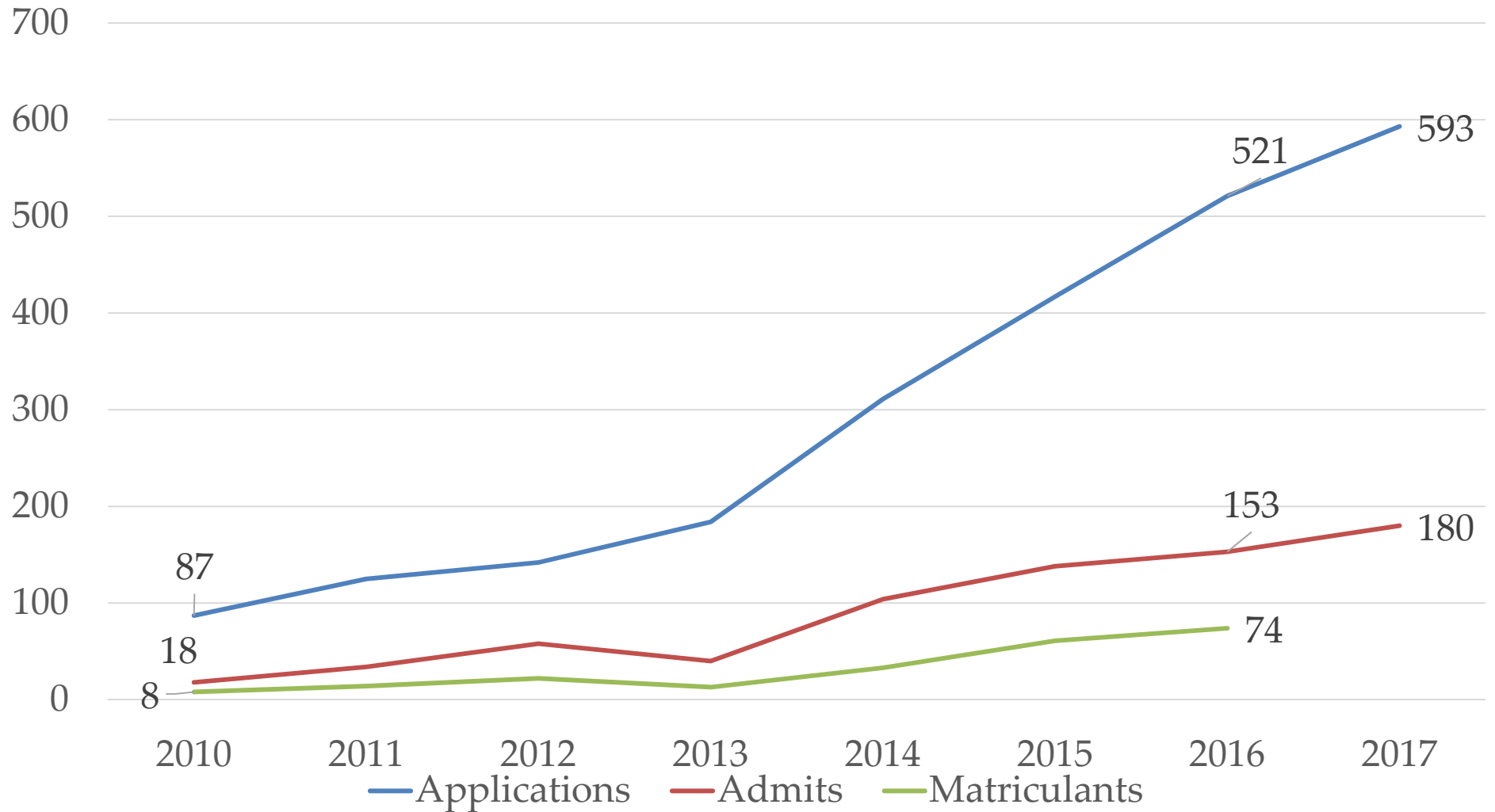
UG Female Applications for Admission: 2004 - 2017



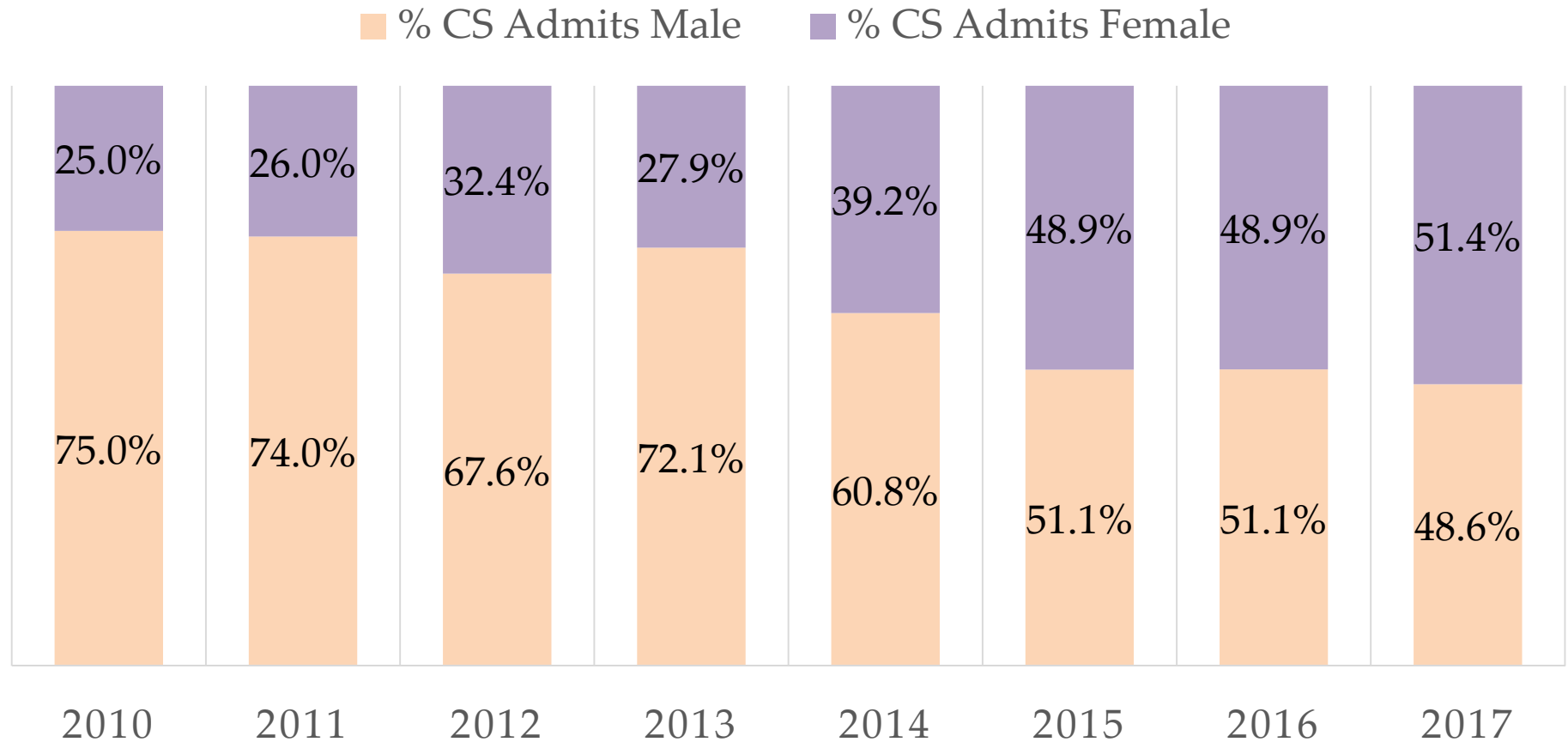
UG Female & Male Admits as a % of All Admits: 2004 - 2017



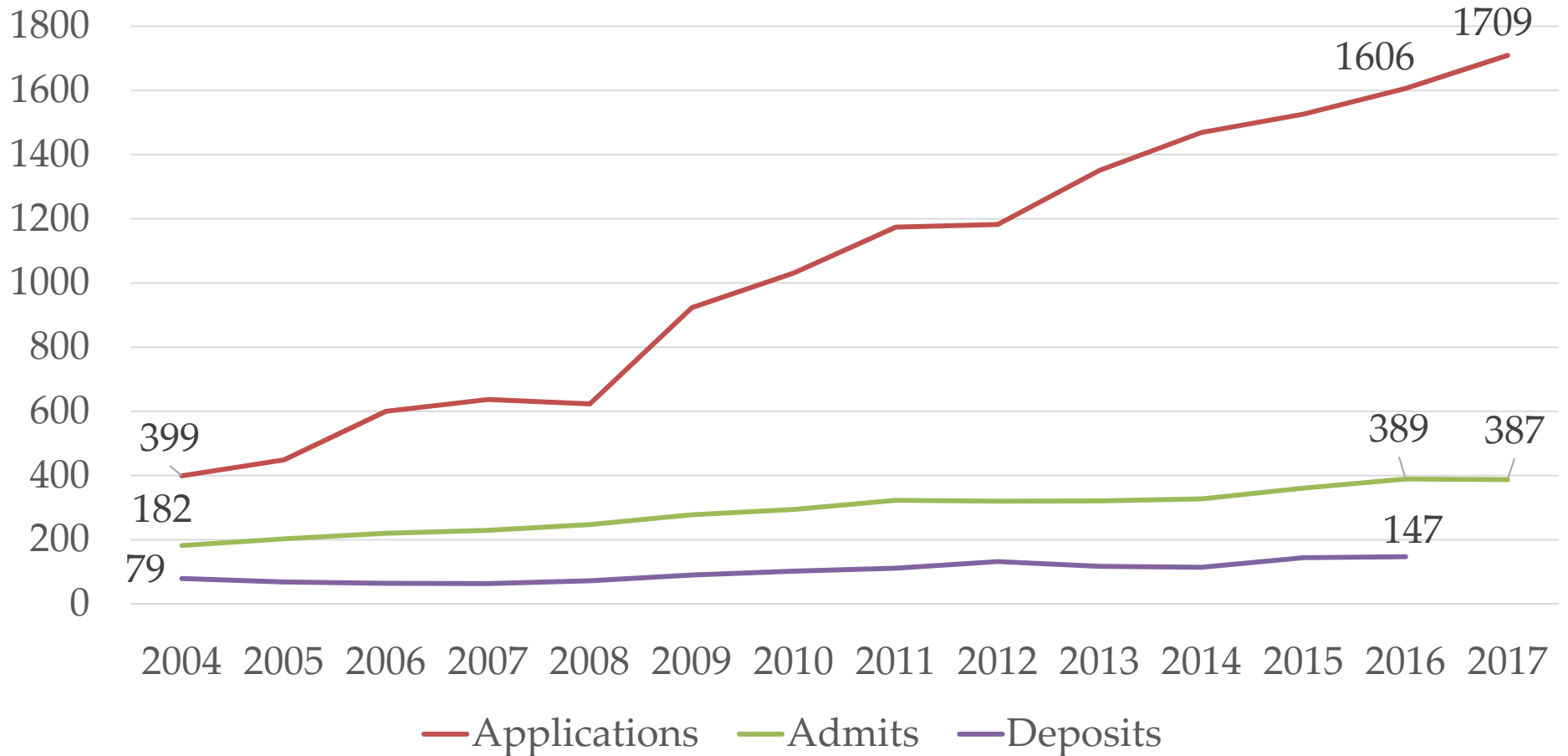
UG Female Applications for Admission to Computer Science: 2010 - 2017



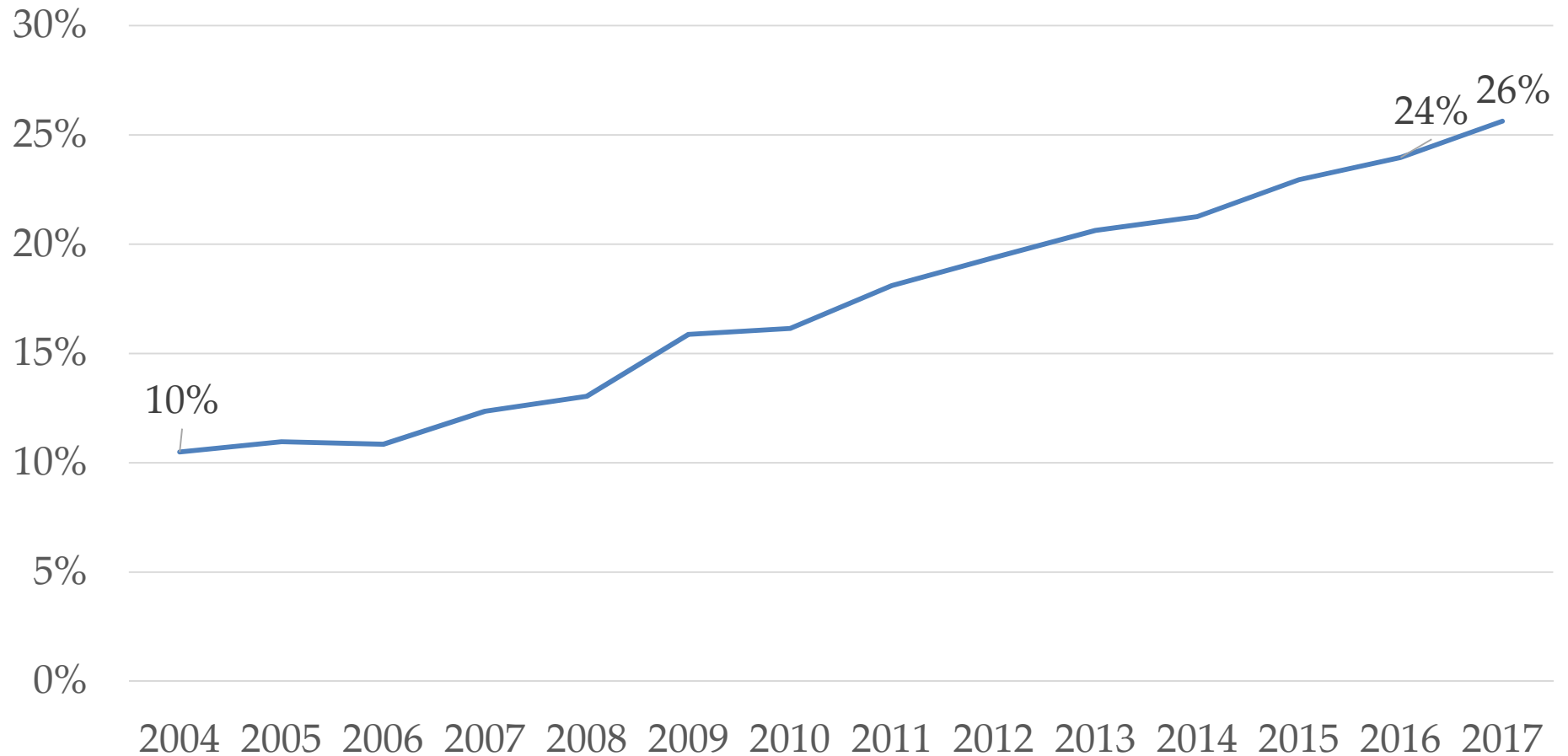
UG Admits with an Interest in Computer Science by Gender: 2010 - 2017



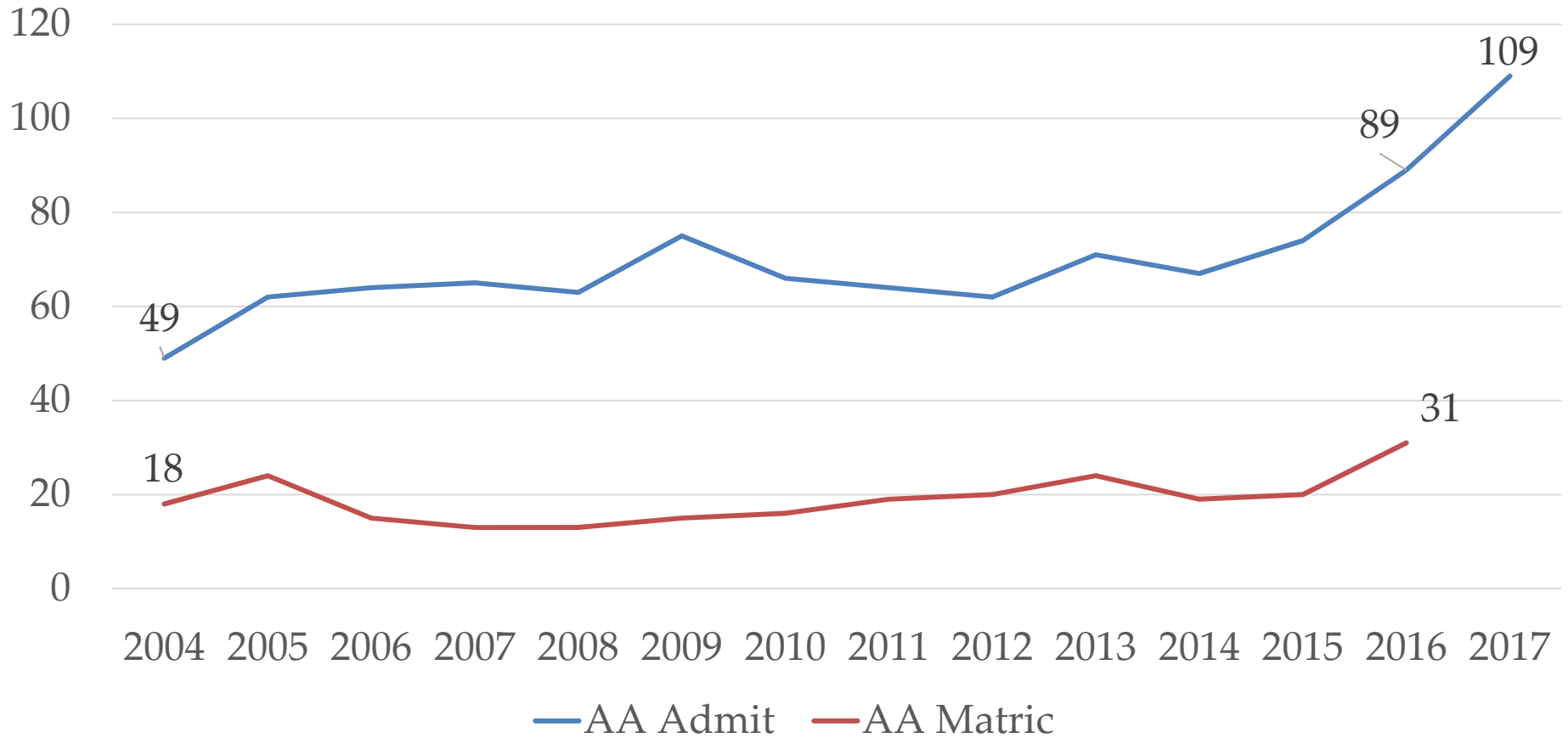
Total UG URM Applications for Admission: 2004 - 2017



Total UG URM Admits as a Percent of all Admits: 2004 - 2017



Total UG African American Admits and Matrics: 2004 - 2017

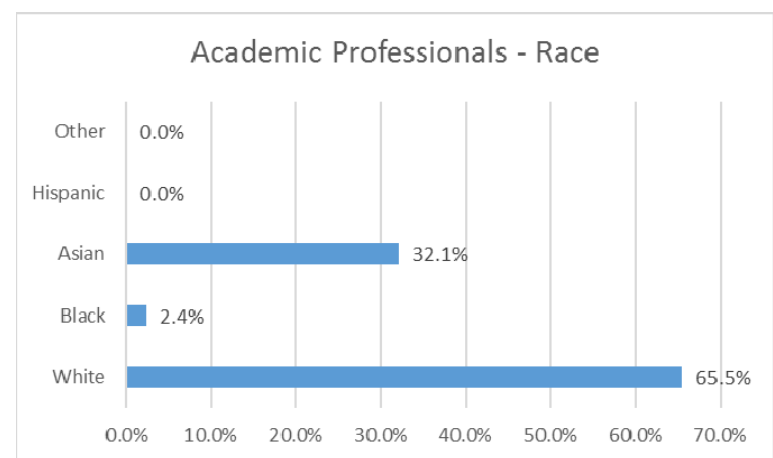
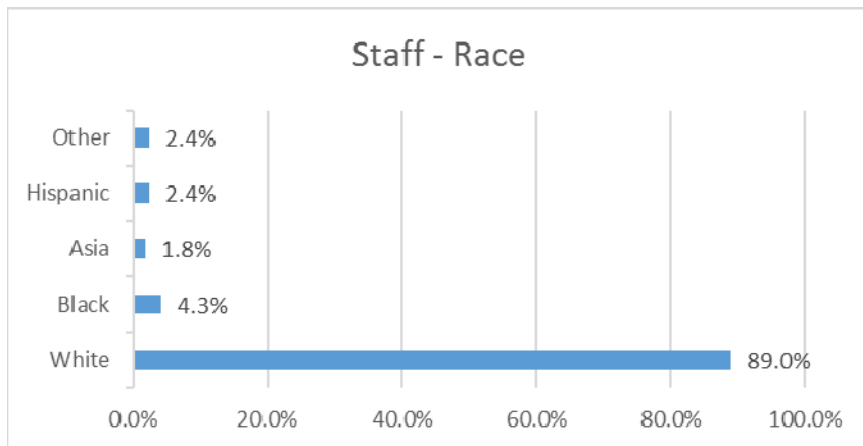
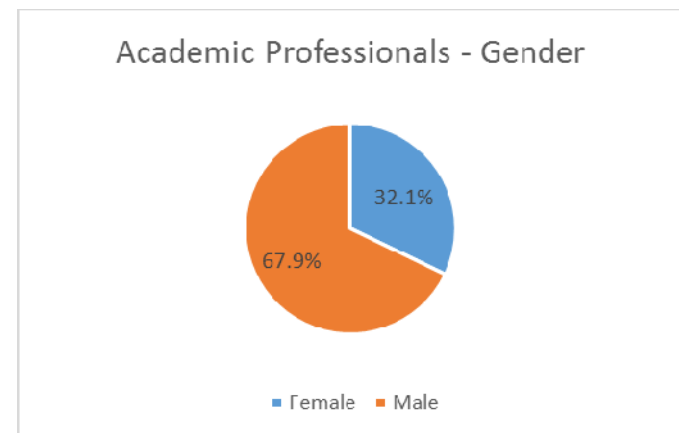
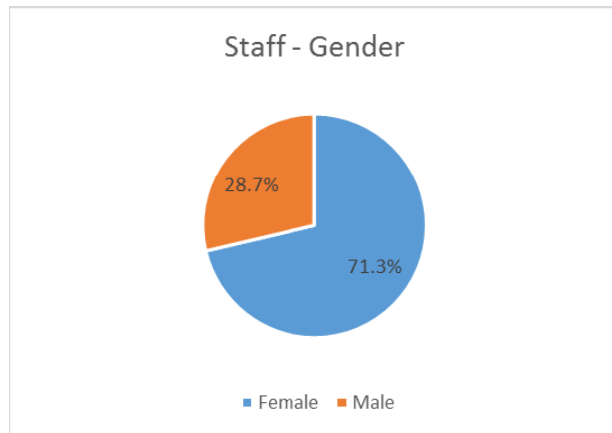


Diversity Highlights

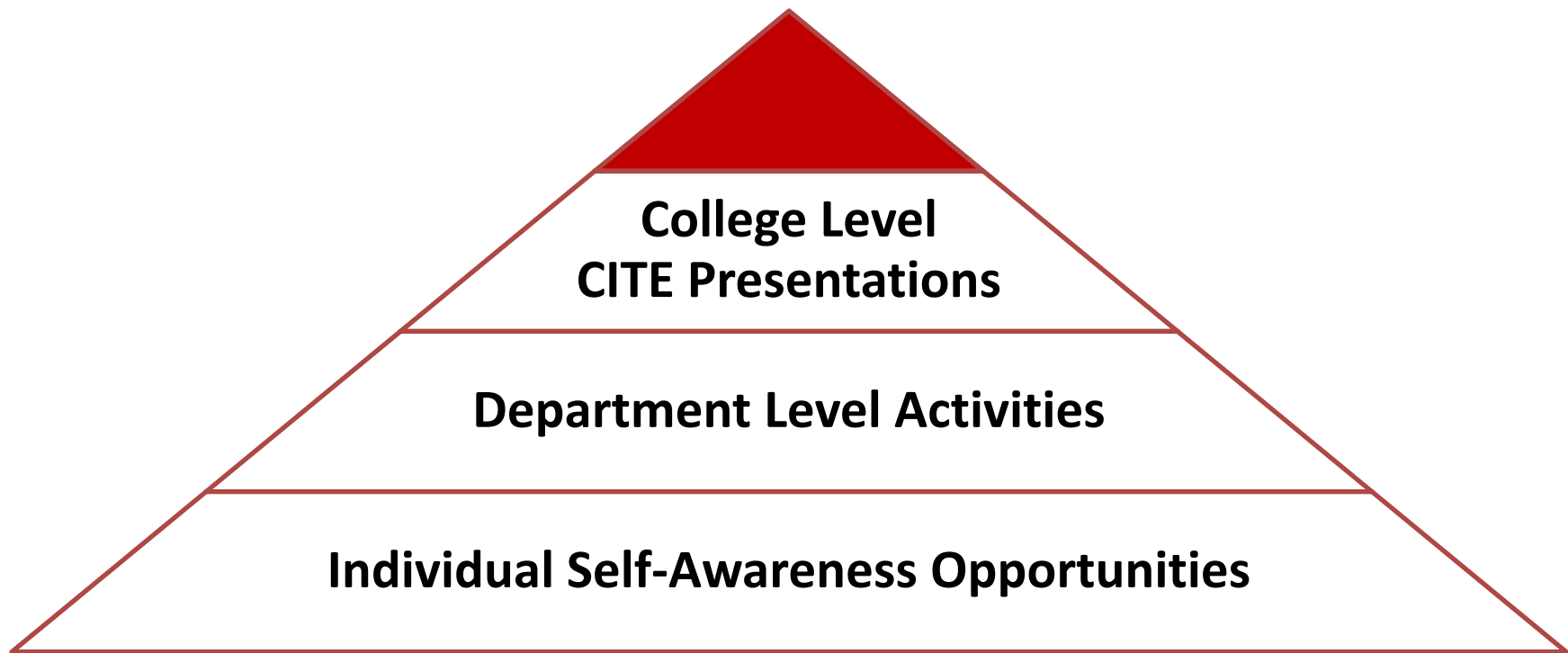
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Staff Demographics



Different Experiences, Different Perspectives, One College



New Visions Engineering

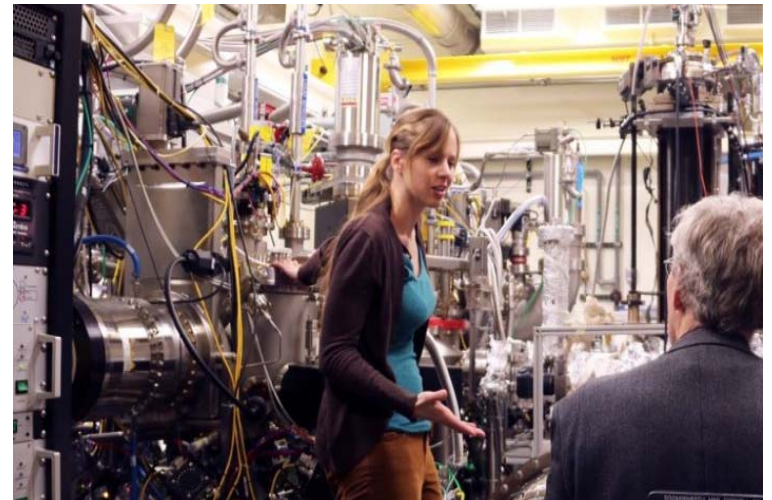
March 2017



New Visions Engineering



- NY State supported program, administered by TST BOCES
- ~15 high school seniors, college bound, motivated, academically competitive
- full year, full time, on-campus high school program satisfies NY State standards
- students
 - receive 4 credits for General Physics at TC3
 - receive 3 credits for Engineering at UT Austin
 - audit ENGRI classes at Cornell
 - hear topical lectures by faculty and grad students
 - engage in research with Cornell faculty



Student Project Team Highlights March 2017



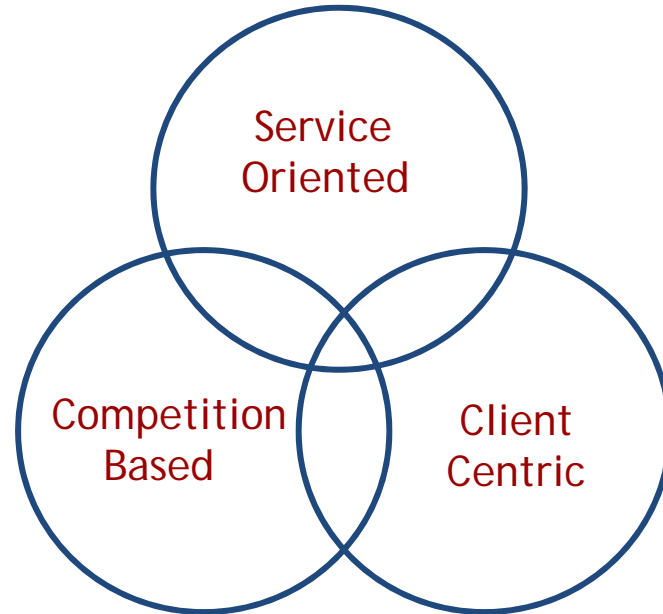
Experiential Learning

Meshing Academics with Engagement



Relevance

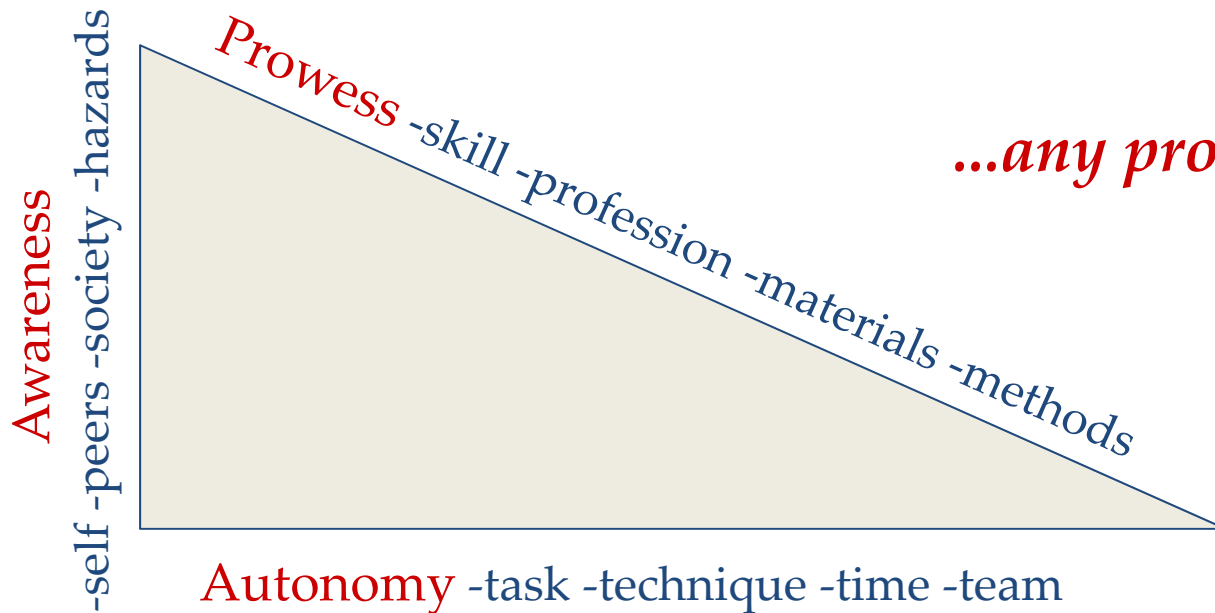
“To be an engineer, not only do engineering”



*24 Teams
~1000 student participants*

Upson Lower Level Lab

Atmosphere and Arena to enable intrinsic motivation to thrive



...any project... any team

Engagement

Important Impact

Survey of 638 Project Team Participants: **How important is or was each of these to you?**

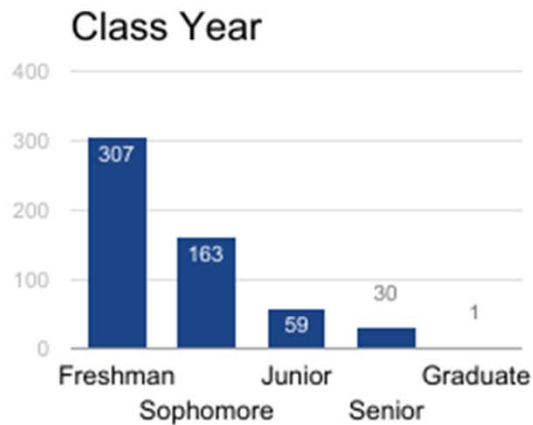
- 66% Project team opportunities influenced you choosing Cornell
- 95% Project team was an important part of your Cornell experience
- 88% Use of skills learned through your project team experience in your courses was important
- 89% Use examples from project team experience in an interview for employment, research, scholarship, or future endeavors

Project Diversity

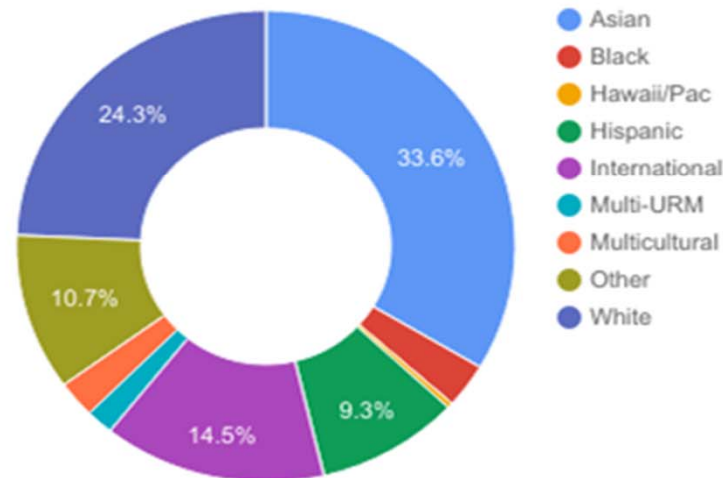


Portfolio Size: Selective or Exclusive?

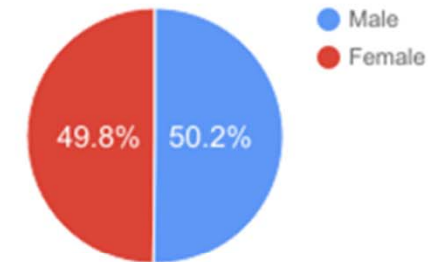
560 engineering students expressed interest in joining but were not selected to participate
(805 total, representing 51 majors)



Ethnicity



Gender



EERI Seismic Design Team Wins First Place



18 students from 7 majors are on the EERI Seismic Design Team. 8 students represented the team in Portland, Oregon to present their design, interact at a poster session, and to live-test their structure.



Engineering Career Center March 2017

*Inspiring and Empowering Cornell Engineers to Create
Lifelong Career Success*



Engineering Post Graduation Report – 2016

Post-Graduate Activities

Undergraduate 807 Surveyed, 71.9% Response Rate

31% Grad School

62% Employed

4% Seeking Employ.

3% Other

M.Eng. 718 Surveyed, 94% Response Rate

3% Grad/Prof School

77% Employed

17% Seeking Employ.

3% Other

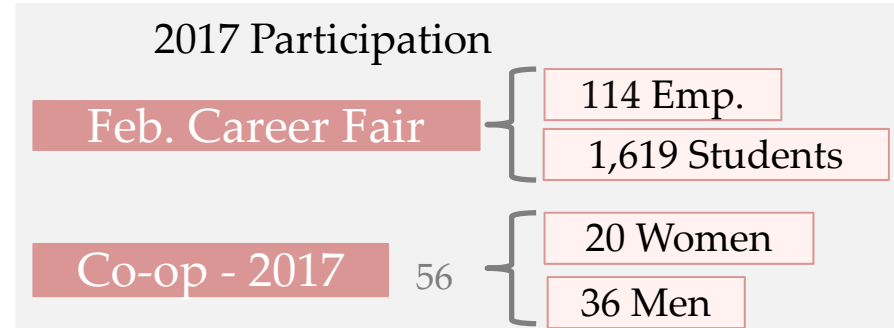
Employers Hiring 8+ Engineering Students

All Degrees

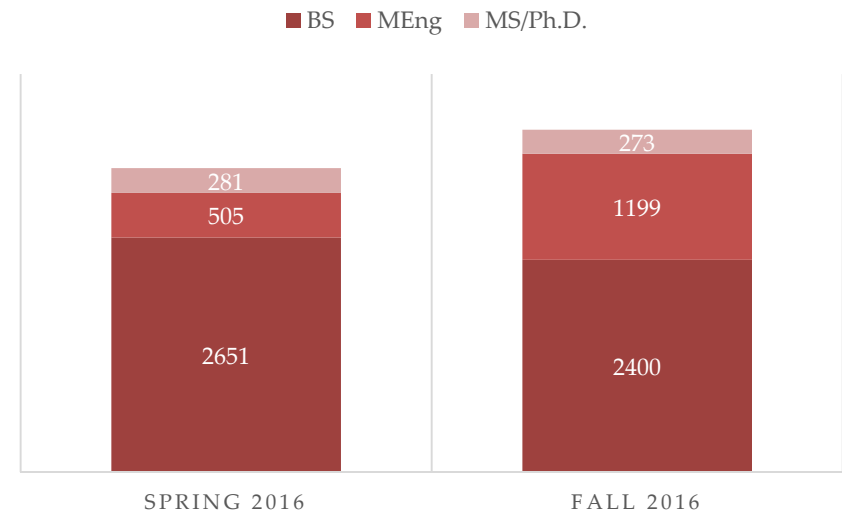
Amazon	35	Intel	14	EY	11	AmEx	9
Google	32	Facebook	14	IBM	10	Wayfair	8
Oracle	31	Workday	13	Capital One	9	Regeneron	8
Lockheed Martin	16	Goldman Sachs	11	BAE Systems	9	Epic Systems	8

Campus Impact and Office Services

	Spring 2016	Fall 2016	Jan – Feb 2017
Peer Advisor Appointments	176	374	173
Appointments (w/Advising Staff)	699	350	165
Small Group Session attendance (*began in Fall 2016)	N/A*	244	49
Event Contacts (includes workshops, programs and special events)	1,034	3,044	774
Total Contact (includes Fairs, Employer Interviews and Programs)	4,866	6,214	3,625



CONTACT* BY DEGREE



*does not include Employer Interviews



Hiring Cornell Engineers

To reach your target population - post positions in Cornell's [Handshake](#), the student portal for jobs and upcoming career events.

Masters of Engineering

Industry-sponsored projects and faculty research-based programs add real-world experience to Cornell's reputable education.

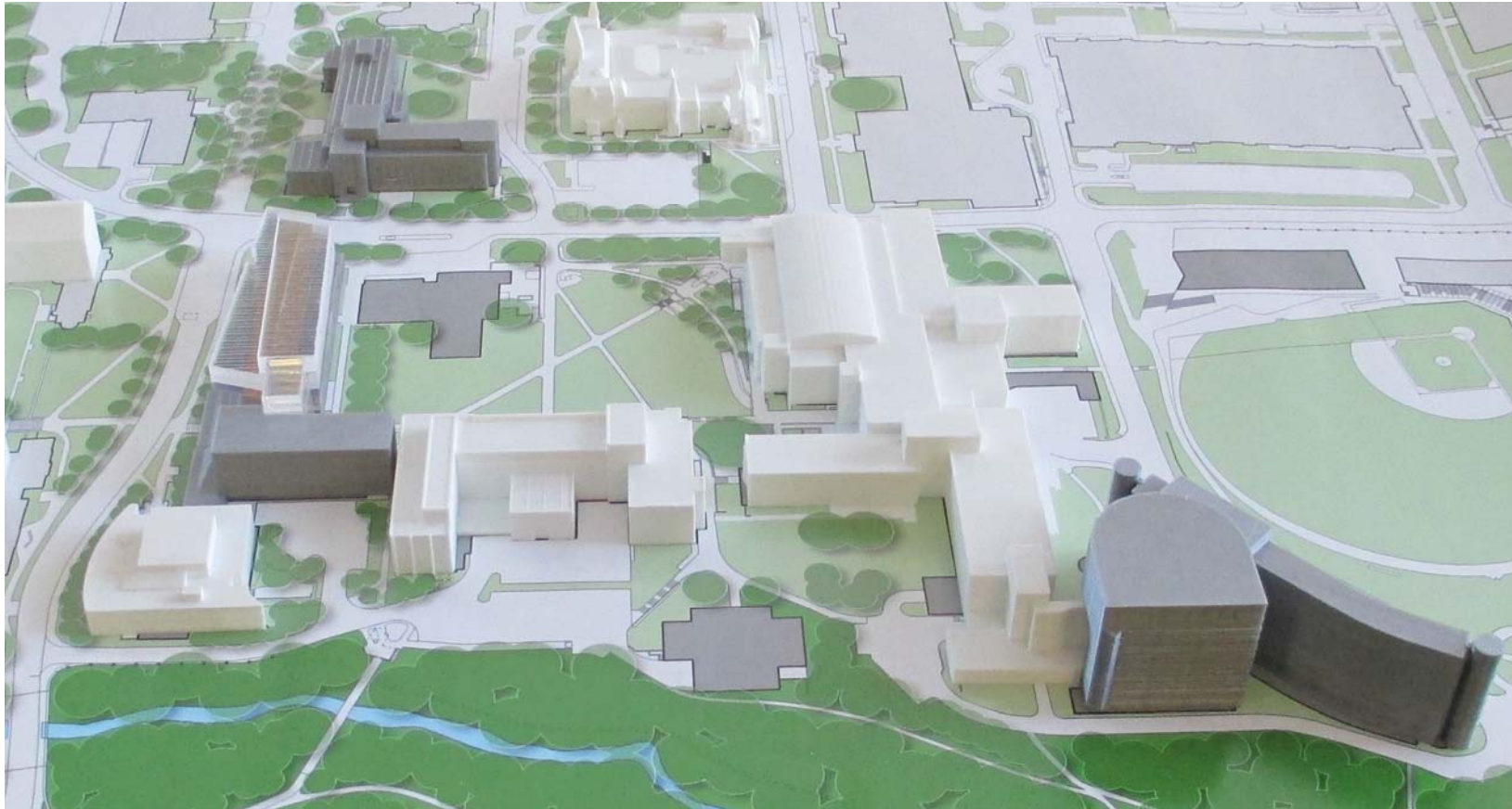
700+ M.Eng. graduates from **15** degree fields – connect with one perfect for your organization.

Engineering Co-op

Program provides opportunities for students to advance and apply their knowledge and skills. Approximately **110** participants from **9** degree fields are currently seeking co-op opportunities for Fall 2017/Summer 2018.

Post your opportunity to [Handshake](#) today!

College Facilities Update March 2017



Facilities: Providing The Built Environment Supporting Engineering's Strategic Vision

- **Functionally Enhance:**
 - Research
 - Learning
 - Student development
 - Scholarship
- **Attract and Retain Faculty**
- **Model Best Energy and Sustainability Practices**
- **Project a Forward-Looking Engineering Presence**

Master Plan Status

- **BME Expansion for New Undergraduate Program**
 - University plan using existing spaces and additions
 - Weill, Comstock and possibly Plant Science
 - Weill department hub/labs design completed
- **Upson Hall Full Renovation**
 - Research areas & floors 3-5 completed and occupied
 - Floors G-2 to be completed summer 2017
- **Research, Infrastructure, and Public Space Projects**
 - PARADIM in Duffield Hall – construction underway
 - Research Spaces (Robotics, Bio, Materials, Civil)
 - ECE Computer Systems Lab & ORIE classroom completed
- **Facility Master Plan Update Completed**
 - Focus: replace Hollister, CBE labs, and Rhodes refresh
 - Detailed planning & development beginning

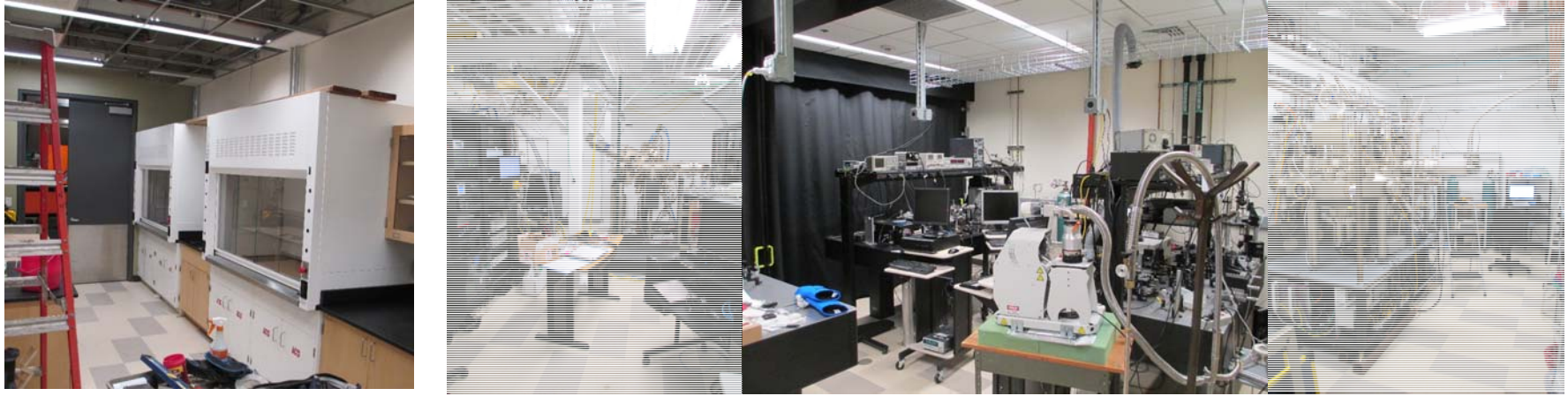
Upson Hall Full Renovation

- Hybrid labs, project teams, MAE Consolidation



Research and Public Space Projects

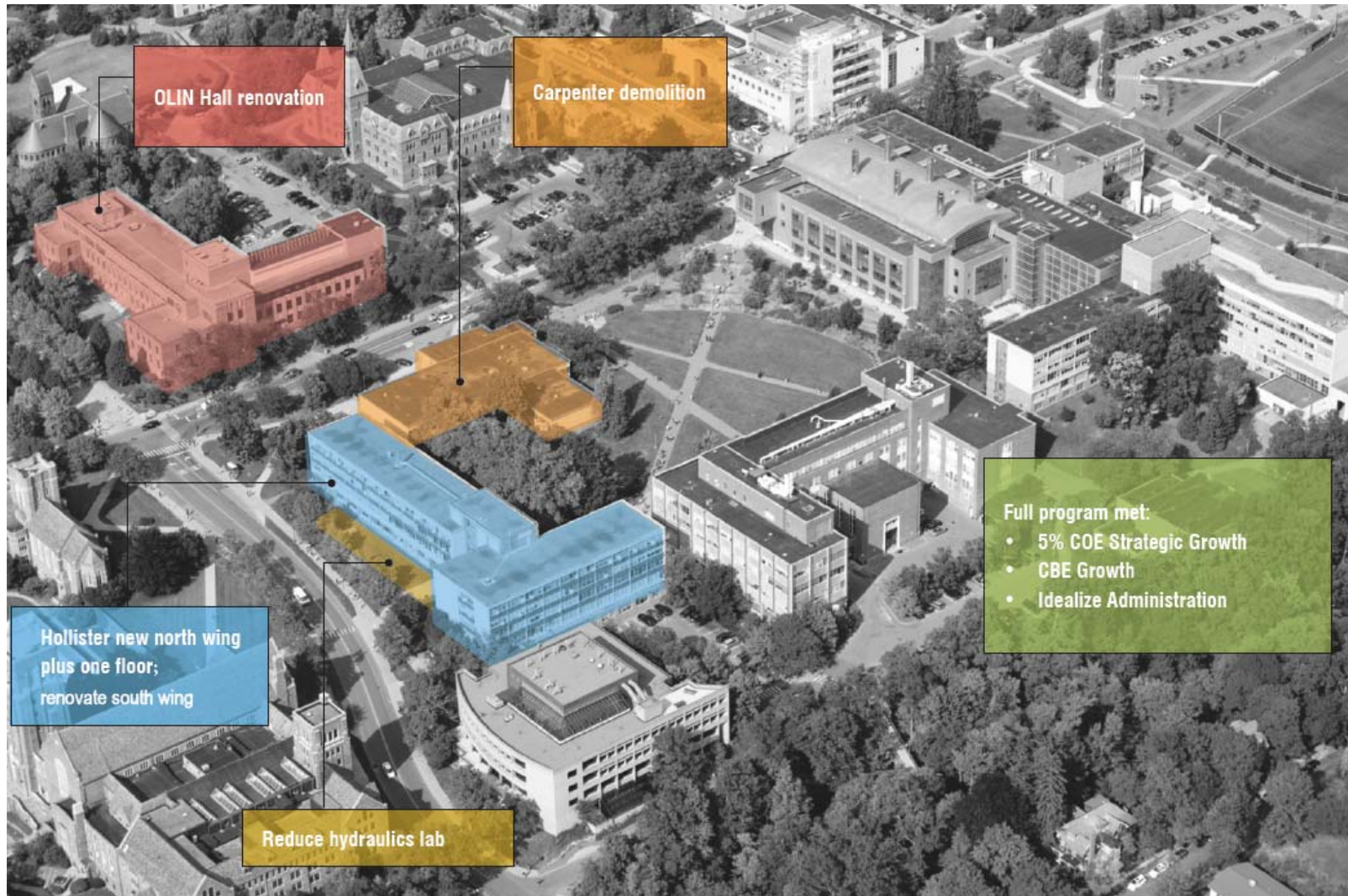
- **Duffield –PARADIM Research Center & Jena Xing MBE Labs**



- **Relocating ECE/CSL and ORIE Computer Classroom in Rhodes:**

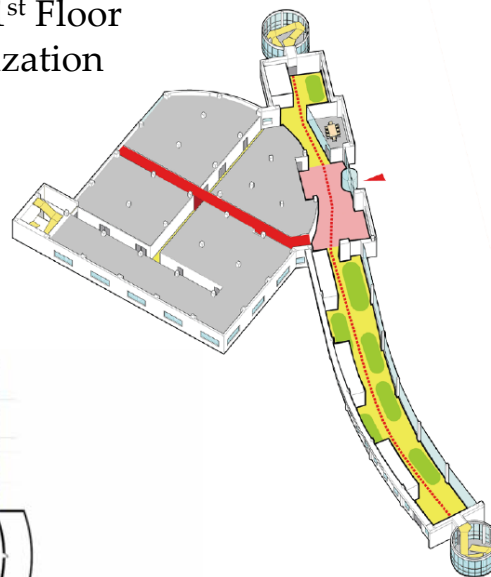


• Master Plan Update - Hollister-Olin-Carpenter



Master Plan Update – Olin – Rhodes – New Building

Rhodes 1st Floor
Revitalization



Olin High Density Research Labs



New Building Replaces Hollister
North Wing

- Admin Relocation
- Collaborative Research
- Flexible Classrooms
- Student Interaction

College of Engineering Fiscal Year '17 Giving Update

March 2017



Giving Totals for Fiscal Year '17

Fiscal Year 2017 NG&C Goal	\$ 30,000,000
Fiscal Year 2017 NG&C Total	\$ 16,780,000
<i>56% of our NG&C Goal</i>	

Fiscal Year 2017 Annual Fund Goal	\$ 2,000,000
Fiscal Year 2017 Annual Fund Total	\$ 1,445,378
<i>80.9% of our AF Goal</i>	

ECC Active Member Participation	54 donors out of
<i>(based on FY '17 thus far)</i>	57 active members
<i>As of 2/27/17</i>	

Thank you!

Lance R. Collins
Dean of Engineering

March 30-31, 2017