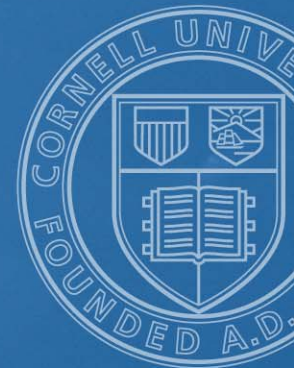


The background of the slide is a blue-tinted photograph of a large, dark, curved architectural structure, possibly a bridge or a sculpture, set against a bright blue sky with scattered white clouds. In the upper right, the word "ENGINEERING" is written in large, semi-transparent, light blue capital letters. Below it, the text "CORNELL ENGINEERING" is written in smaller, white, all-caps sans-serif font.

**CORNELL ENGINEERING**

# College of Engineering Update

**October 2013**  
**Lance R. Collins**  
**Dean of Engineering**



# Agenda

- College leadership update
- Faculty update
  - New hires
  - Awards
  - Research Expenditures
- Towards New Destinations and DPE Update
- Student Enrollments and Accomplishments
- General updates
  - Rankings
  - Budget Update
  - Facilities Update
  - Campaign Now Update
- NYC Tech Campus Update

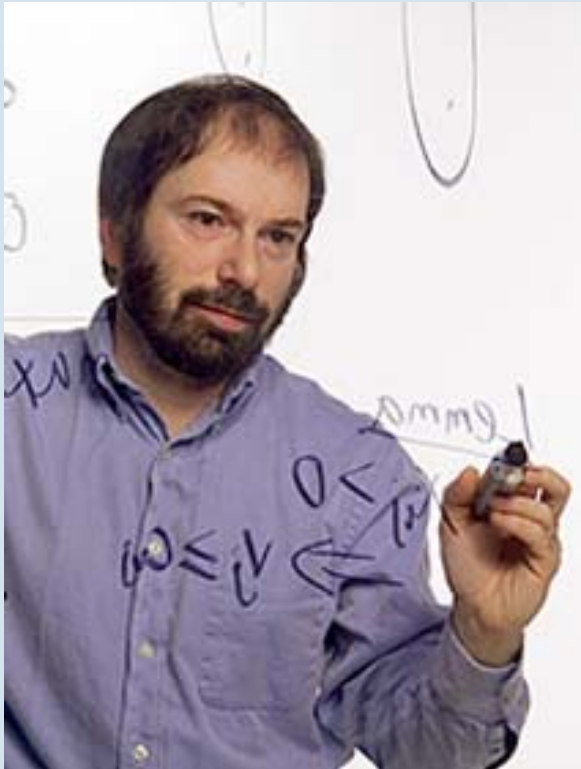
# Associate Dean for Undergraduate Programs



**Leslie Trotter**  
Associate Dean for  
Undergraduate Programs

- Joined Cornell in 1975.
- Professor of Operations Research and Information Engineering
- Memberships
  - Institute for Operations Research and the Management Sciences
  - Mathematical Programming Society
  - Society for Industrial and Applied Mathematics
- Former Associate Director of Undergraduate Studies, Director of the School and Director of Graduate Studies for ORIE.
- Degrees received
  - A.B. (Mathematics), Princeton University, 1965
  - M.S. (Industrial and Systems Engineering), Georgia Institute of Technology, 1971
  - Ph.D. (Operations Research), Cornell University, 1973
- Research Focus – Area of discrete and combinatorial optimization.

# Director of Operations Research and Information Engineering



**David Shmoys**

Director of Operations Research  
and Information Engineering

- Joined Cornell in 1989.
- Professor of Operations Research and Information Engineering, Acheson/Laibe Professor of Business Management and Leadership Studies
- Fellow of the ACM and SIAM
- Former Associate Director for both Graduate and Undergraduate Studies in ORIE
- Degrees received
  - B.S.E (Electrical Engineering and Computer Science), Princeton University, 1981
  - M.S. and Ph.D. (Computer Science), University of California, Berkley, 1984
- Research Focus - area of the design and analysis of efficient algorithms for discrete optimization problems

# Swanson Director of Engineering Student Project Teams

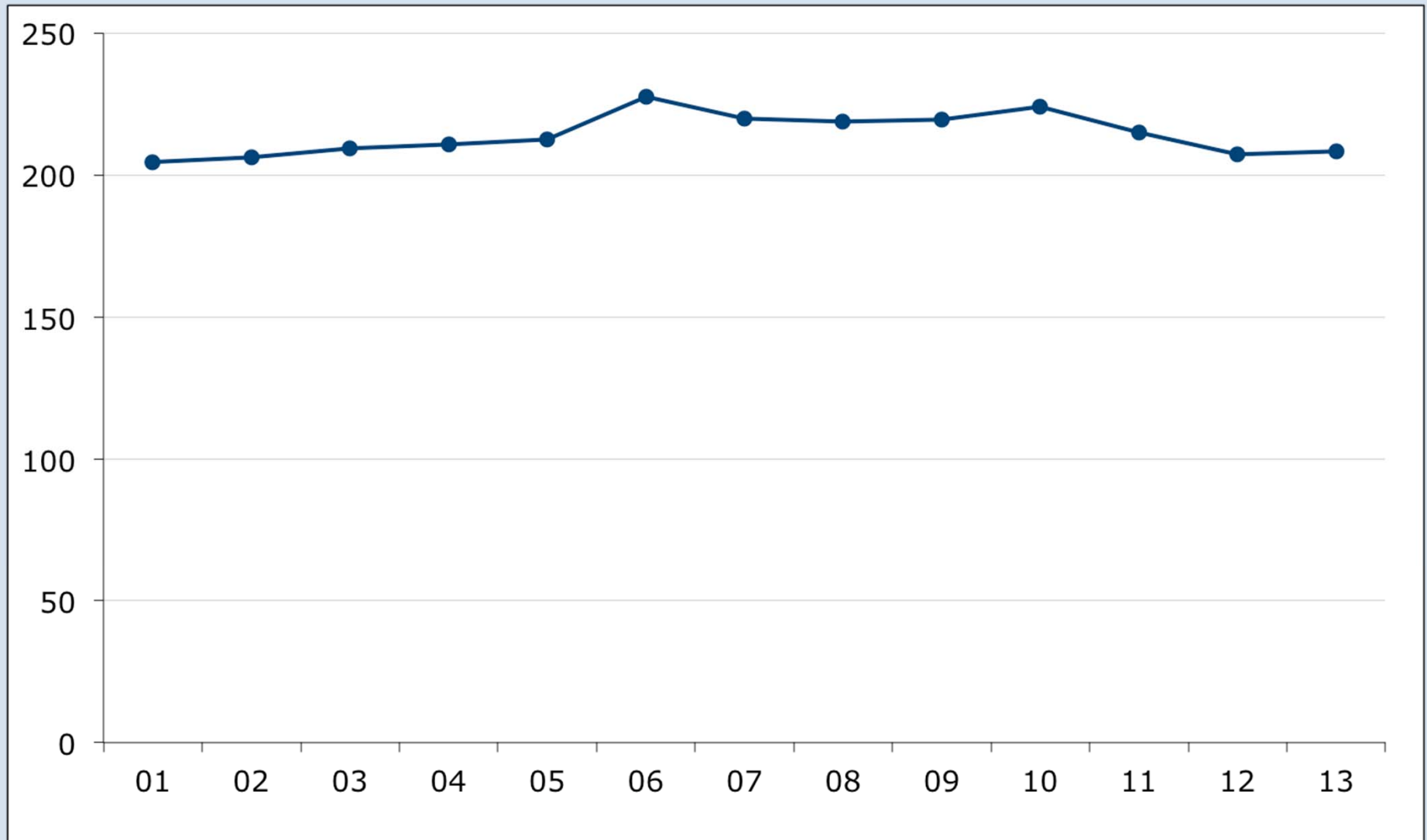


**Rebecca Macdonald**

Swanson Director of Engineering  
Student Project Teams

- Joined Cornell in August 2013
- Former Assistant Professor, Department of Construction Management, East Carolina University.
- Previously an engineer designing high voltage transmission lines by computer optimization and a senior pricing and structuring analyst for Dominion Power in Richmond, Virginia.
- Macdonald will work closely with an advisory group of faculty to determine strategic direction and provide much needed management support to the teams.
- Degrees received
  - Bachelor's (Civil Engineering), Georgia Institute of Technology, 2000
  - Master's (Economics), Virginia Commonwealth University, 2006
  - Master's (Civil Engineering), University of Alabama, 2010
  - Ph.D. (Civil Engineering), University of Alabama, 2013

# Faculty FTE

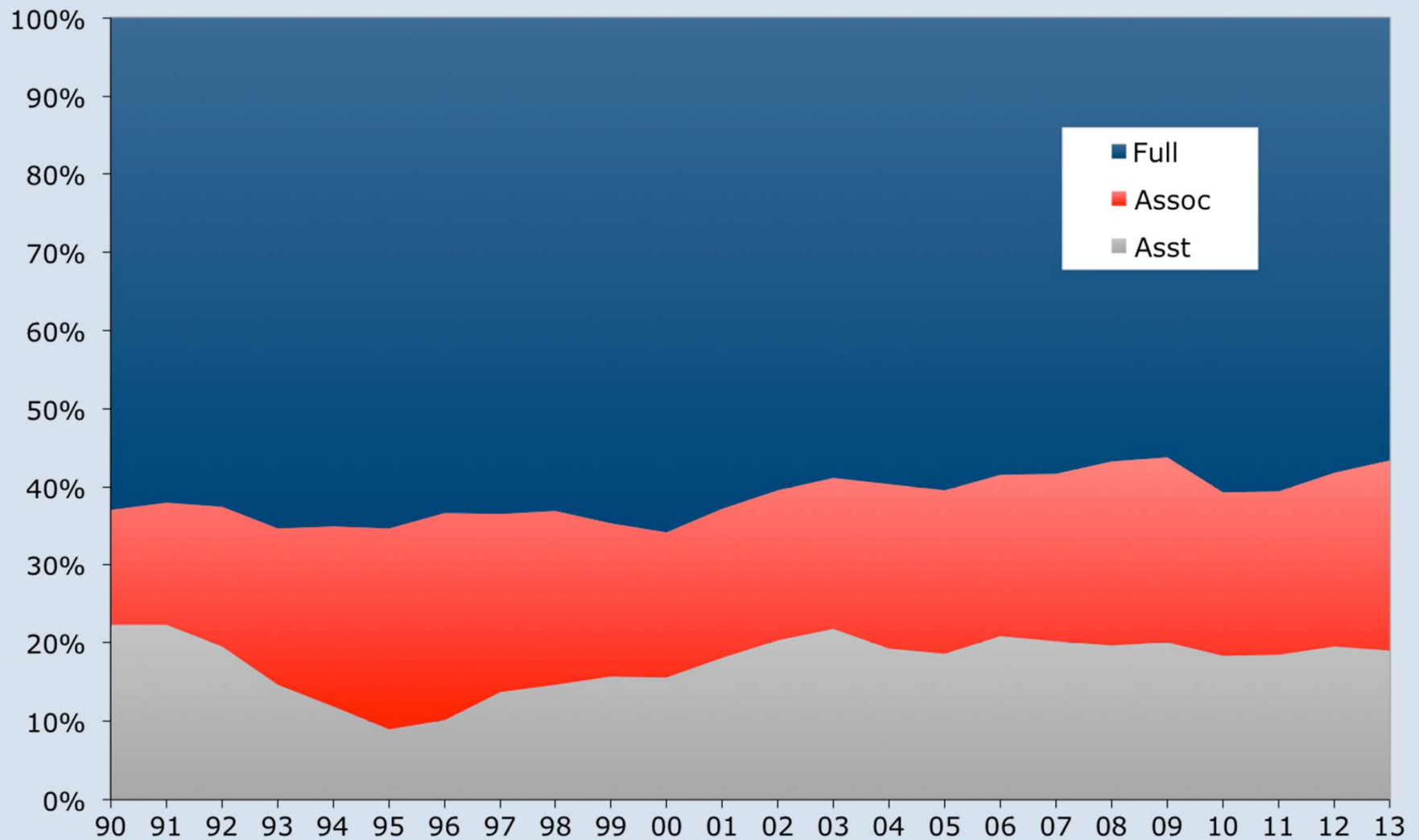


# College of Engineering Faculty Hires

URM

Department	AY 2009-10		AY 2010-11		AY 2011-12		AY 2012-13	
	<u>Men</u>	<u>Women</u>	<u>Men</u>	<u>Women</u>	<u>Men</u>	<u>Women</u>	<u>Men</u>	<u>Women</u>
AEP	0	0	1	1	0	0	0	0
BME	0.25	0	1	0	0	0	2	1
CEE	1	0	0	0	2	0	1	0
CBE	1	0	0	1	0	0	1+1	0
CS	0	0	1	0	1	1	1	0
EAS	0	0	0	0	1	0	1	1
ECE	0	0	2	0	0	1	1	0
MSE	0	0	0	1	1	0	0	0
MAE	0.75	0	1	2	2	0	2	2
ORIE	0	0	0	1	3	0	1	0
<b>Total</b>	<b>3</b>	<b>0</b>	<b>6</b>	<b>6</b>	<b>10</b>	<b>2</b>	<b>11</b>	<b>4</b>

# Percentage of Faculty by Rank





# CoE Searches 2012-2013

Department	Searches	Status
AEP	1	2 declined offers
BEE	0	
BME	1	2 accepted offers, chair's search continues
CBE	1	2 accepted offers, 1 declined offer
CEE	2	1 accepted offer, 1 declined offer
CS	2	1 accepted offer (Dean)
EAS	1	2 accepted offers
ECE	2	1 accepted offer
MAE	2	4 accepted offers
MSE	0	
ORIE	1	1 accept offer, 3 declined offers

# New Faculty

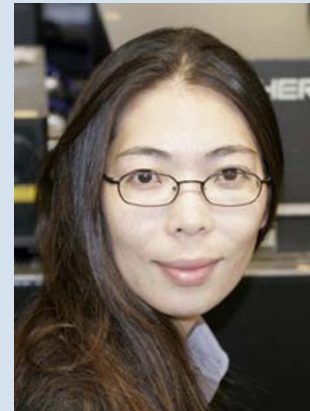
(Arrivals January 2013 – June 2014)



**Lena Fitting Kourkoutis**  
*Asst. Professor, AEP*



**Steven Adie**  
*Asst. Professor, BME*



**Nozomi Nishimura**  
*Asst. Professor, BME*



**Pierre Patie**  
*Asst. Professor, BME*



**Christopher Alabi**  
*Asst. Professor, CBE*



**Matt Paszek**  
*Asst. Professor, CBE*



**Roseanna Zia**  
*Asst. Professor, CBE*



**Pat Reed**  
*Asst. Professor, CEE*

# New Faculty

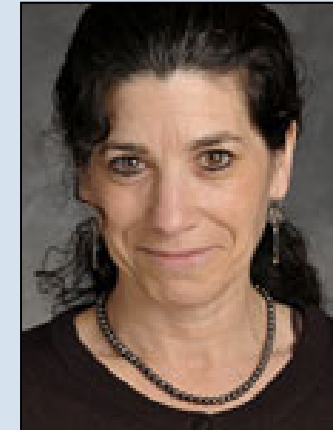
(Arrivals January 2013 – June 2014)



**Damian Helbling**  
*Asst. Professor, CEE*



**Haym Hirsh**  
*Professor & Dean CIS*



**Deborah Estrin**  
*Cornell NYC Professor, CS*



**Kathleen Keranen**  
*Asst. Professor, EAS*



**Maryam Shanchi**  
*Asst. Professor, ECE*



**Christoph Studer**  
*Asst. Professor, ECE*

# New Faculty

(Arrivals January 2013 – June 2014)



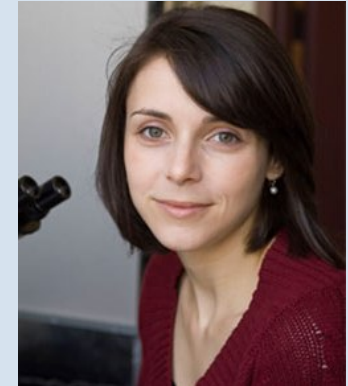
**Robert Shepherd**  
*Asst. Professor, MAE*



**Meredith Silberstein**  
*Asst. Professor, MAE*



**Ankur Singh**  
*Asst. Professor, MAE*



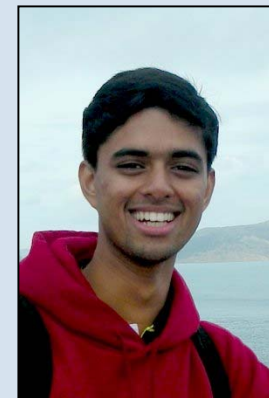
**Dana Weinstein**  
*Asst. Professor, MAE*



**Jin Suntivitch**  
*Asst. Professor, MSE*



**Jim Dai**  
*Professor, ORIE*



**Krishnamurthy Iyer**  
*Asst. Professor, ORIE*

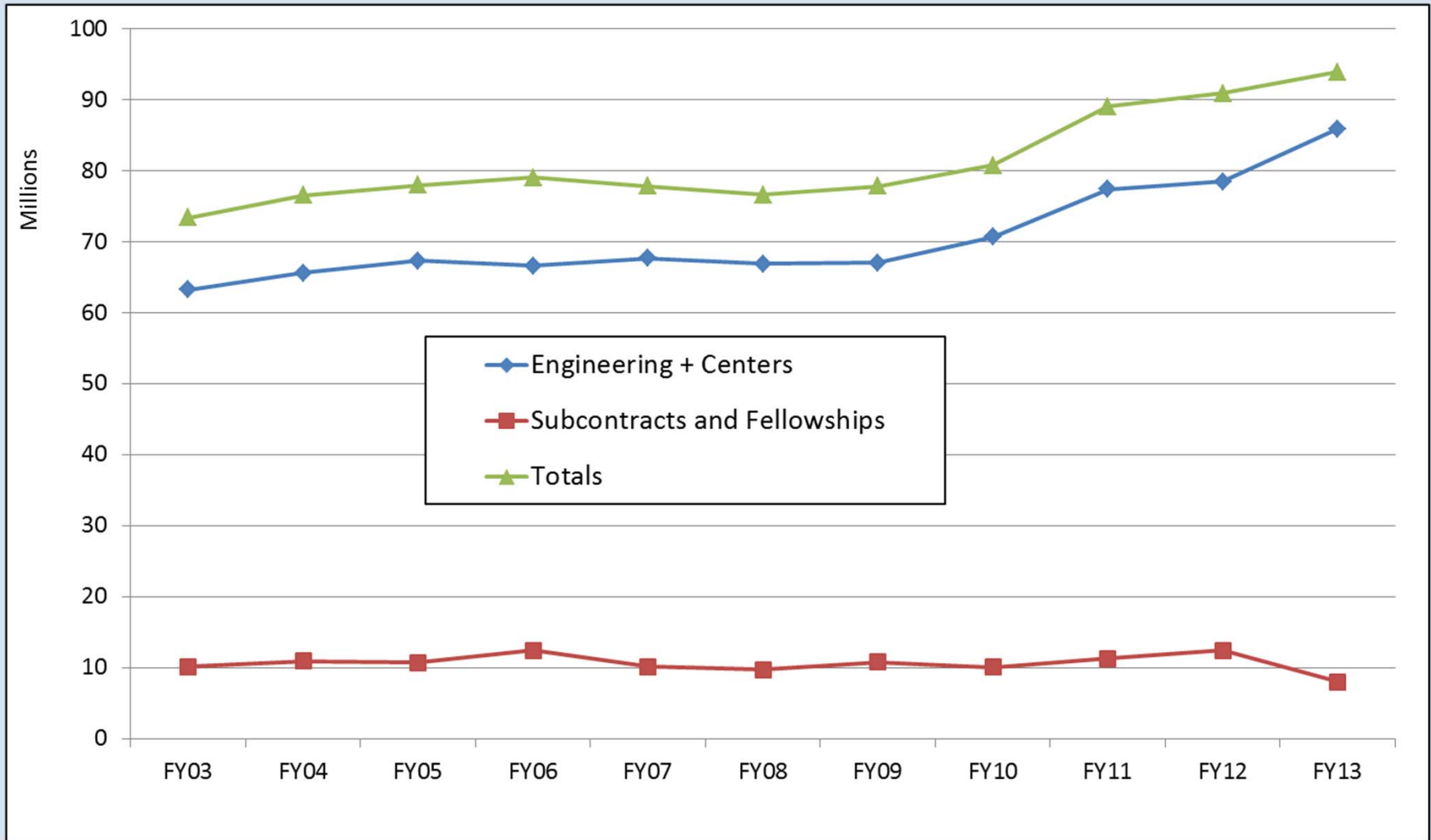
# Major Faculty Awards

- MacArthur Fellow
  - Craig Fennie (AEP)
- National Academy of Science
  - Eva Tardos (CS)
  - Juris Hartmanis (CS)
- 2013 Office of Naval Research Young Investigator Award
  - Julius Lucks (CBE)
- Faculty Early Career Development Award, National Science Foundation
  - Ricardo Daziano (CEE)
  - Gregory Fuchs (AEP)
  - Ashutosh Saxena (CS)
- Presidential Early Career Awards for Scientists and Engineers
  - Kevin Tang (ECE)
  - Craig Fennie (AEP)

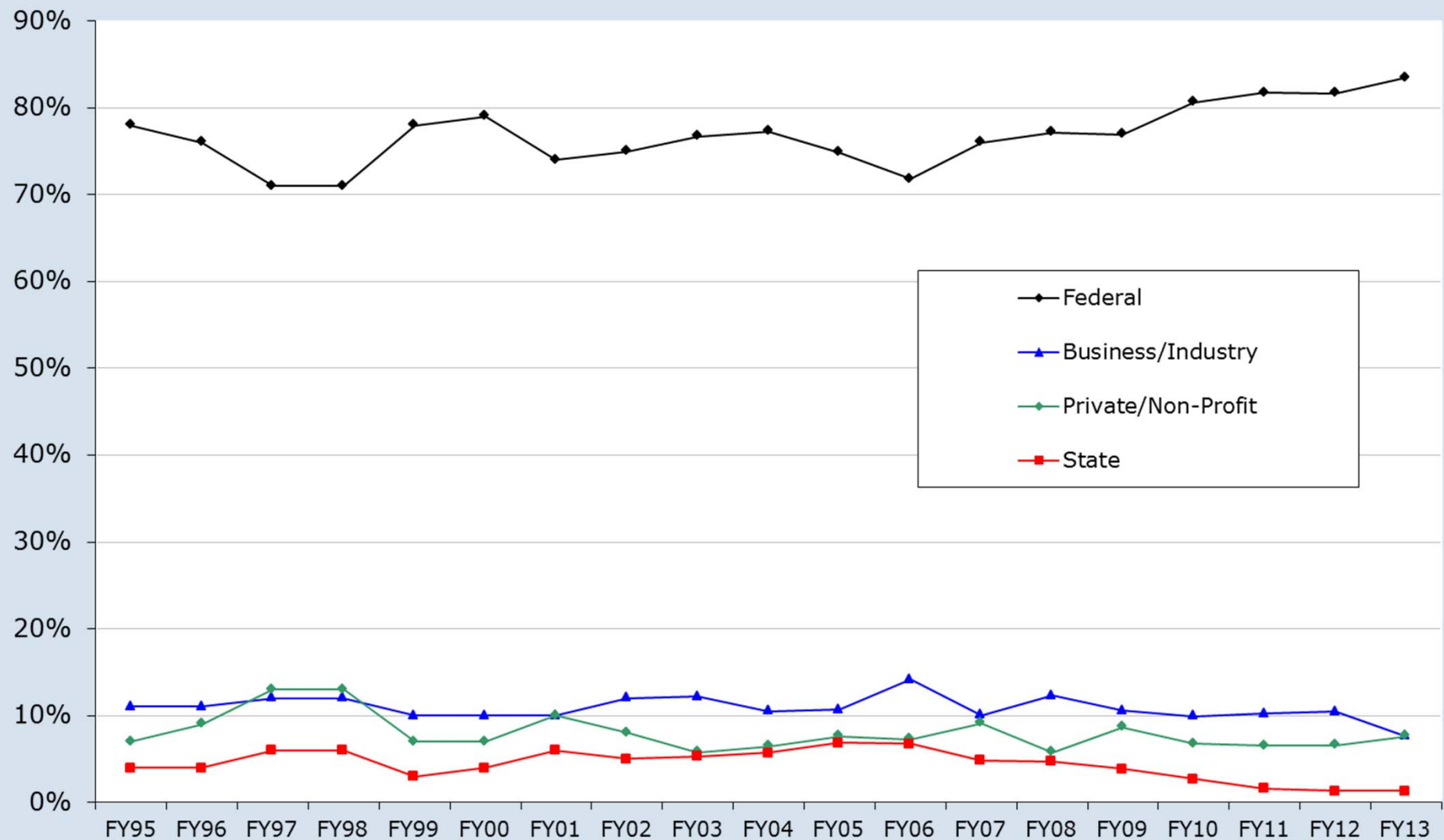
# Major Faculty Awards

- Fellow, Microscopy Society of America
  - David Muller (AEP)
- Fellow, Association for the Advancement of Artificial Intelligence
  - Lillian Lee (CS)
- Fellow, American Geophysical Union
  - Natalie Mahowald (EAS)
- 2013 ACM SIGKDD Innovation Award
  - Jon Kleinberg (CS)
- Zellman Warhaft Commitment to Diversity, Faculty Award
  - Richard Allmendinger (EAS)

# Research Expenditures

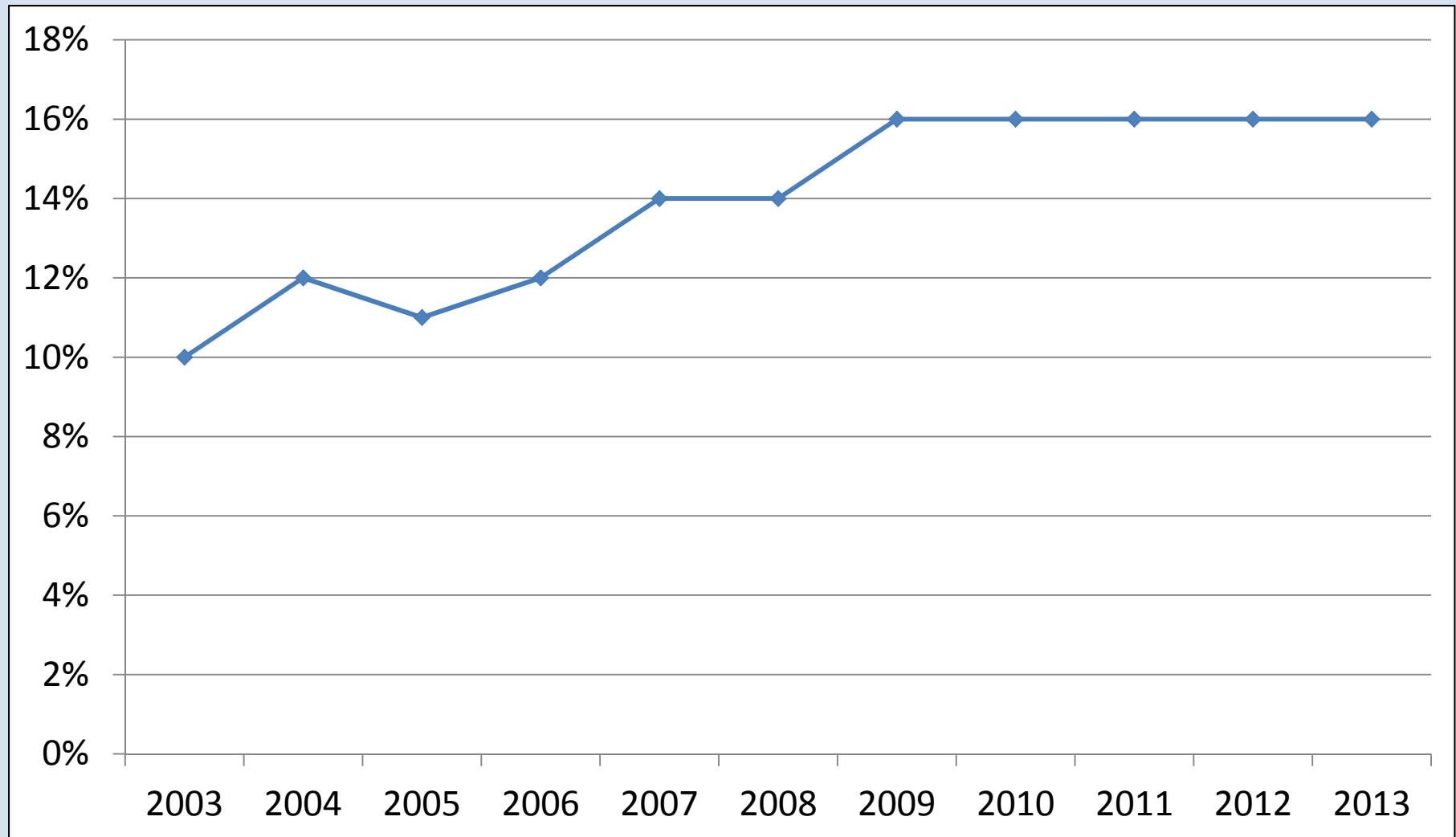


# Percent Distribution of Research Expenditures



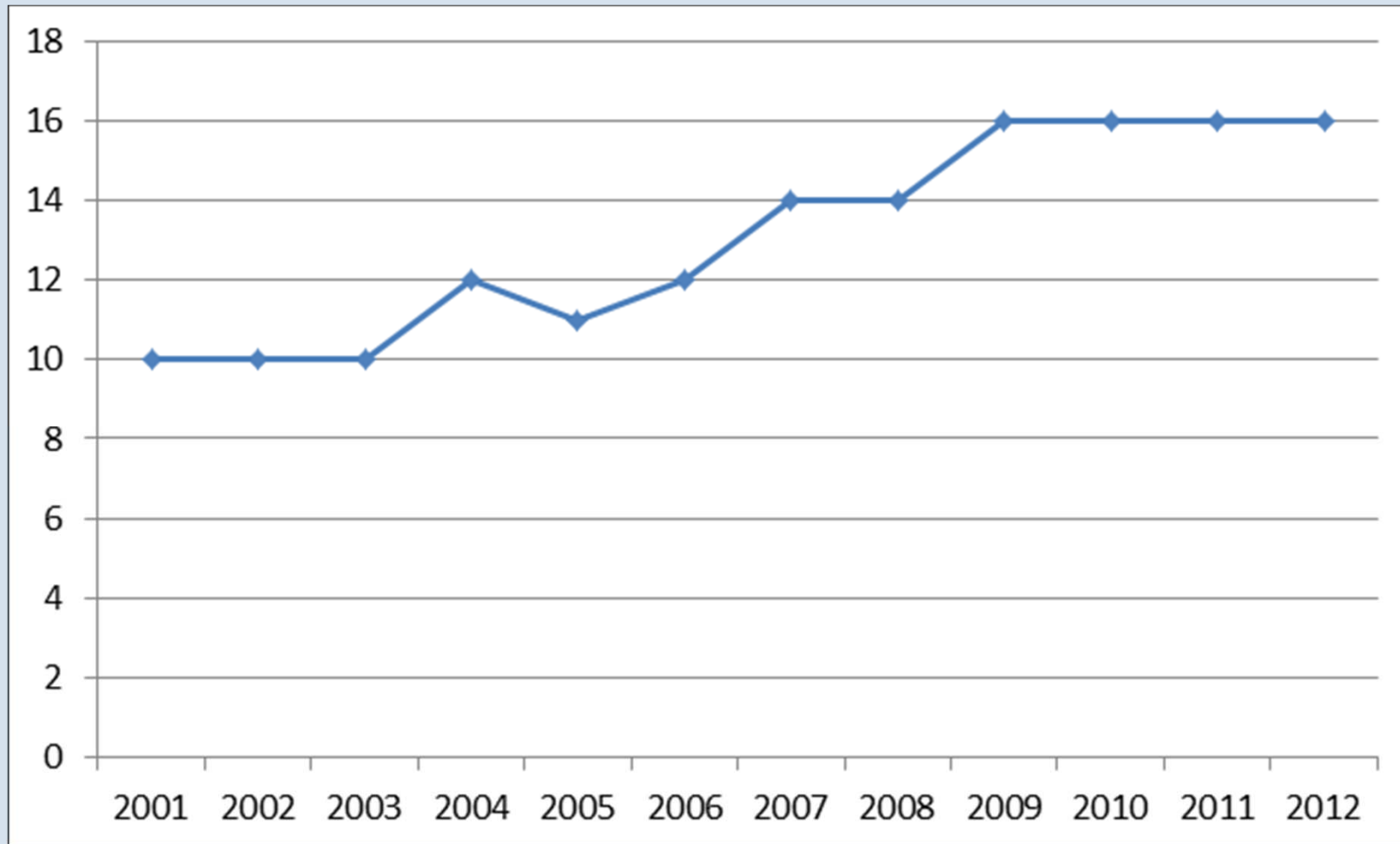


# Industry Funded Research as a Percent of Total Research



# Industry Funding Ranking

Cornell: ranking among top 20 Engineering Colleges (latest US News) in terms of % research supported by industrial funding



# Towards New Destinations

- Institutional diversity planning initiative
- Developed by the University Diversity Council
- Started 2012-2013, now in 2<sup>nd</sup> year
- Each college and unit selects five annual initiatives that best match their particular contexts and goals.
- These become areas of focused effort.
- Each unit reports annually on progress.

# Organizing Rubric

- The framework is structured according to four core principles:
  - **COMPOSITION**
  - **ENGAGEMENT**
  - **INCLUSION**
  - **ACHIEVEMENT**
- Composition refers to the demographic make-up
- Engagement reflects personal, social, and professional commitment to institutional goals and activities; retention
- Inclusion comprises climate and interpersonal relations; climate
- Achievement reflects levels of attainment for underrepresented individuals or groups; opportunities

# 2012-13 TND Plan & Highlights

- **Faculty Composition**
  - 15 hires, 4 women, 2 URM.
- **Undergrad composition**
  - Class of 2017 is about 42% women, 15% URM (about same as class of 2016).
- **Leadership program**
  - Reached 50% of freshmen, 220 students in students' advisory group served to test pilot programs.
- **Respect @ Cornell**
  - Working on getting staff to 100% completion.
- **Communications Plan**
  - Dean and Assoc Dean met with each department. Email message to college community in winter 2013. Diversity messaging woven into COE web pages.

# 2013-14 TND Plan

Communications plan is now a wrapper around all TND plans

- **Faculty composition**

- Carried over from 2012-13 with little change

- **Graduate student composition, engagement and achievement**

- Sloan foundation funded minority Ph.D. program: fellowships, leadership, professional development, community building

- **Undergraduate achievement**

- NSF funded CUES Program

- **Staff inclusion**

- College wide messaging at departmental staff meetings, college wide staff meeting with Ordinary People, followed by discussion and social event

- **Men of Color in STEM and EWISE Conferences**

- Partnerships with other university units. Men of Color conference in Feb 2013, EWISE May 2014.

# DPE Highlights - Undergraduate

- Cornell University Engineering Success (CUES) program funded by NSF – focus on retention of URM and first generation undergraduate students. \$910k award.
- Upstate Louis Stokes Alliance for Minority Participation renewed by NSF – foci are the Scholars and Summer Research Programs.
- The Ryan Scholars Program completed its second full year. Two graduate students hired to help support the Ryan Scholars. Trustee Bob Ryan visited with the scholars this fall.
- Cornell Hosted the Upstate NY GEM GRAD (Getting Ready for Advanced Degrees) Lab with a record attendance of 100+ participants from across the region, Kansas, and Florida.
- Supported over 80 students to attend the national conferences for NSBE, SASE, SHPE, & SWE.
- Supported the launch of ACSU-W, a new undergraduate student group focused on women in computing.

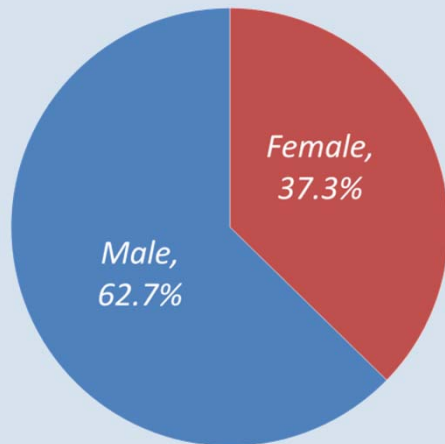
# DPE Highlights - Graduate

- Cornell named a University Center of Exemplary Mentoring (UCEM) by the Sloan Foundation - \$1.2M award provides support for nine 3-year fellowships each year for entering URM Ph.D. students.
- Five Cornell Sloan/Colman Fellows were awarded NSF Graduate Research Fellowships in Spring 2013 – 22 total URM Engineering Ph.D. students have NSF Graduate Research Fellowships.
- The Sloan Foundation allocated five additional scholarships to Cornell in 2012-13.
- Collaborating with the Graduate School and Engineering DGSs to expand best practices in recruitment of URM and women graduate students.

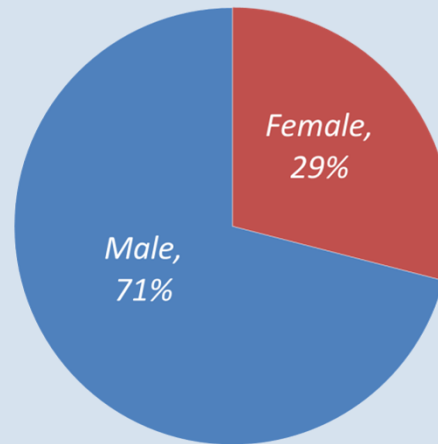


# Gender Demographics:

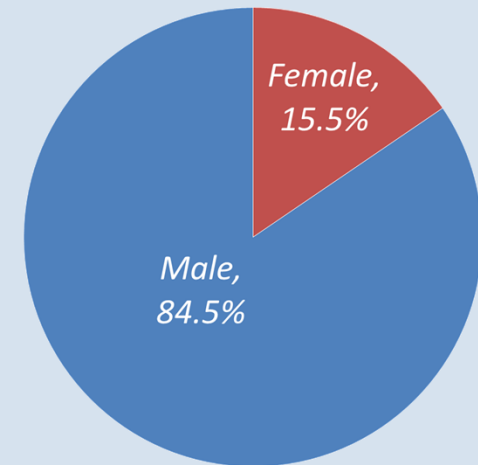
Undergraduate



Graduate



Faculty



Representation of Women – National Averages:

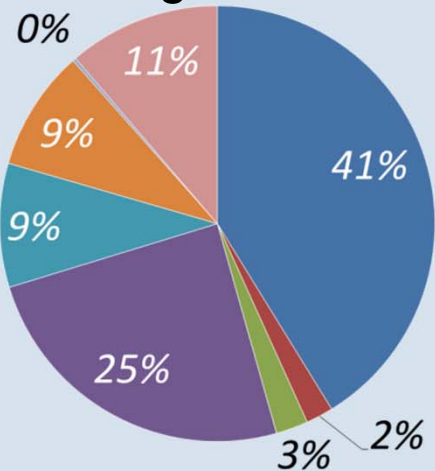
Undergraduate: 18%

Graduate: 23%

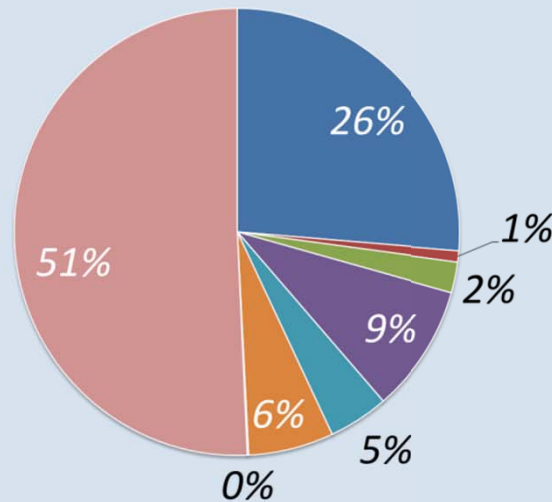
Faculty: 14%

# Race/Ethnicity Demographics:

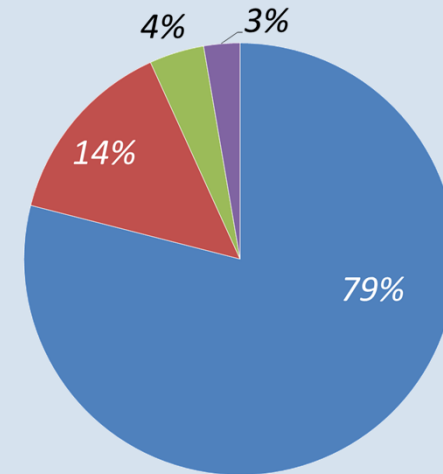
## Undergraduate



## Graduate



## Faculty



- White
- Asian American
- Native American
- Multi-URM
- Hispanic
- International
- Black
- Other

## Underrepresented Minorities (URM) – Cornell and National Averages:

	Undergraduates	Graduates	Faculty
Cornell:	14%	7%	7%
National:	16%	7%	6%

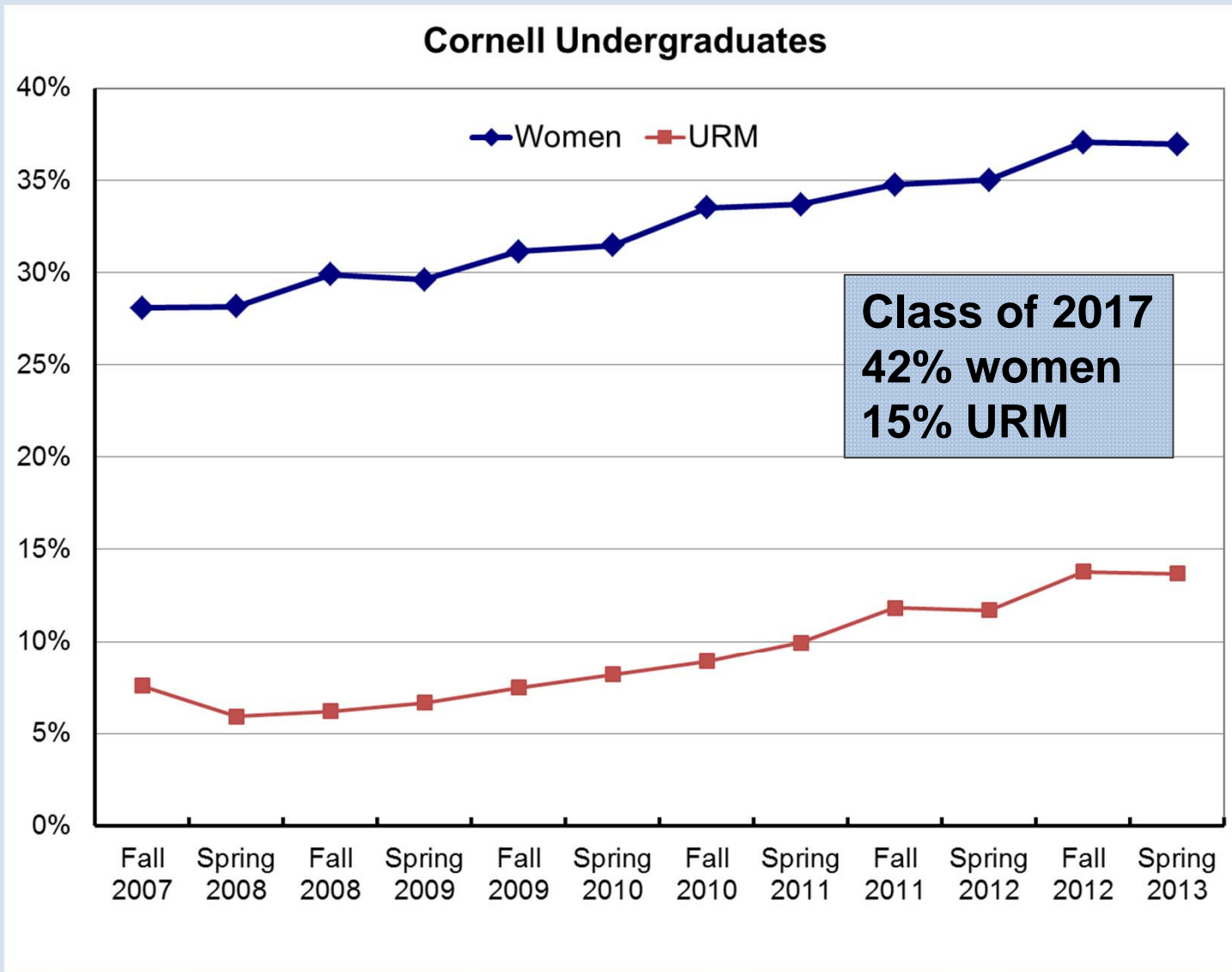
# Overall Composition

<b>Student Composition:</b>					
	<b>Cornell: Enrolled</b>	<b>Cornell: Degrees</b>	<b>National Average: Enrolled</b>	<b>National Average: Degrees</b>	<b>USNWR Top 20: Degrees</b>
<b>Women:</b>					
B.S.	37%	34%	19%	19%	23%
M.Eng.	28%	32%	23%	23%	24%
Ph.D.	30%	26%	23%	22%	22%
<b>URM:</b>					
B.S.	14%	12%	17%	13%	11%
M.Eng.	7.4%	7.7%	14%	12%	5.2%
Ph.D.	7.0%	2.8%	10%	8.2%	3.5%

<b>Faculty Composition:</b>			
	<b>Cornell</b>	<b>National Average</b>	<b>USNWR Top 20</b>
<b>Women</b>	15.5%	14%	14%
<b>URM</b>	6.9%	6.6%	5.8%

\* USNWR = US News and World Report Top 20 Engineering Schools

# Undergraduate Diversity



# Undergraduate completions

Class entered in 2008.

Students entering College of Engineering and completing B.S. in Engineering, or bachelors anywhere at Cornell.

	<b>BS Engr</b>	<b>Bachelors Cornell</b>
<b>Men</b>	83.3%	87.0%
<b>Women</b>	79.9%	91.5%
<b>URM</b>	71.8%	80.3%
<b>International</b>	75.9%	81.2%
<b>Asian</b>	88.3%	95.4%
<b>White, non URM</b>	84.0%	93.7%
<b>Overall</b>	82.1%	90.3%

# How did we get here? Collaborations & Recruiting!

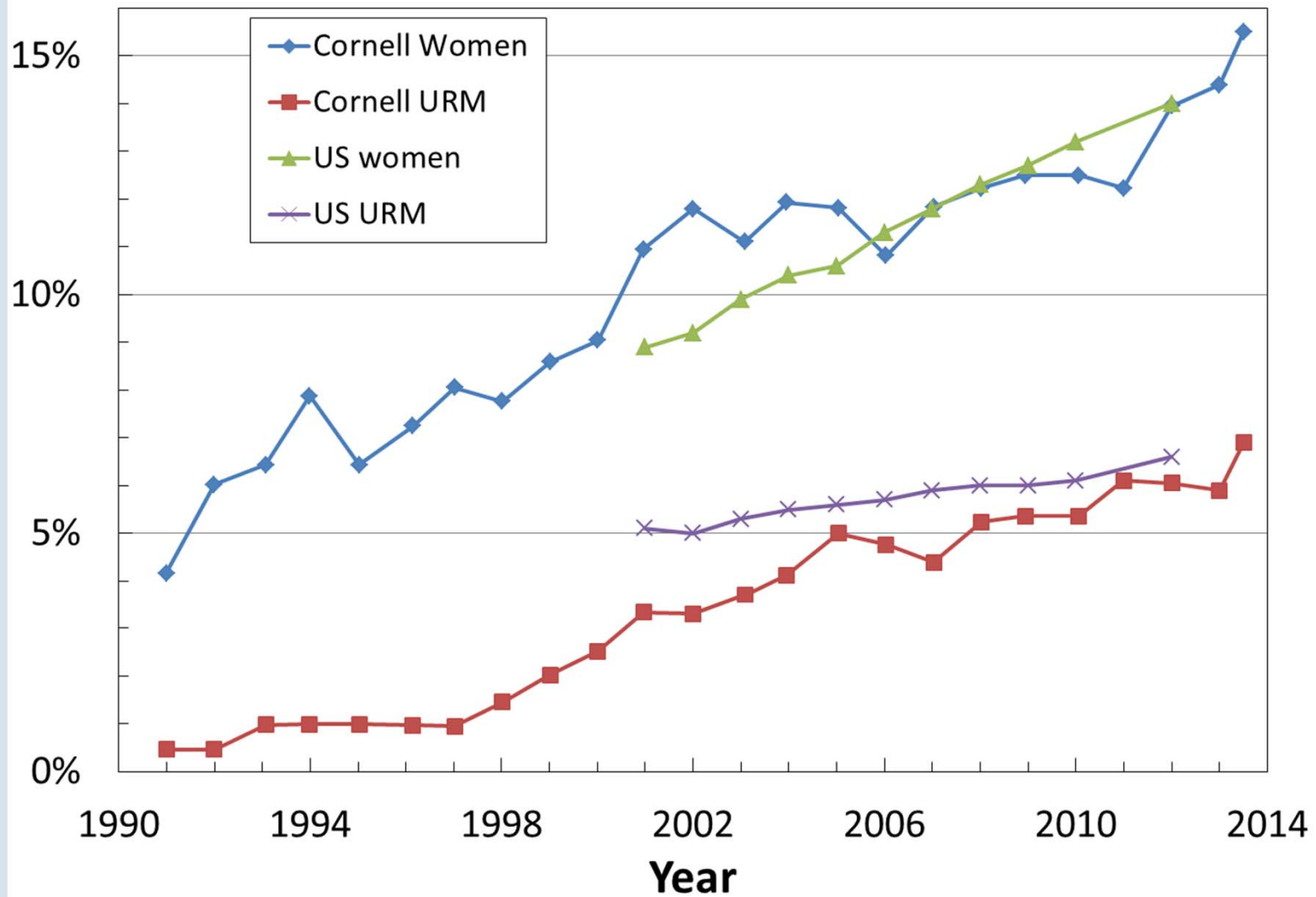
- Special initiatives for Women and URMs
  - Launch of a strategic communications plan targeting women and URMs focused upon building diversity within the college
  - Fall and Spring Diversity Hosting Weekends and Women in Engineering Visitation Programs
  - With shared support from CIS, hired Associate Director of Engineering Admissions with a focus on diversity recruitment and pipeline development
- On-campus Fall/Spring hosting programs
  - Women Hosting: Hosted 137 women overall (2011-12)
    - Spring program for admitted students: 76.5% yield rate (admit to matriculation); compared to 46% overall yield for women
  - Diversity Hosting: Hosted 121 URM students overall (2011-12)
    - Spring program for admitted students: 63.6% yield rate (admit to matriculation); compared to 40% overall yield for URM
  - Program Costs: \$60,000 for URM, \$25,000 for Women

*a key partnership between Engineering Admissions and DPE*

# Graduate Student Diversity

	2010	2011	2012
URM	6.5%	7.2%	7.1%
Women	26.3%	28.1%	29.0%

# Faculty Diversity



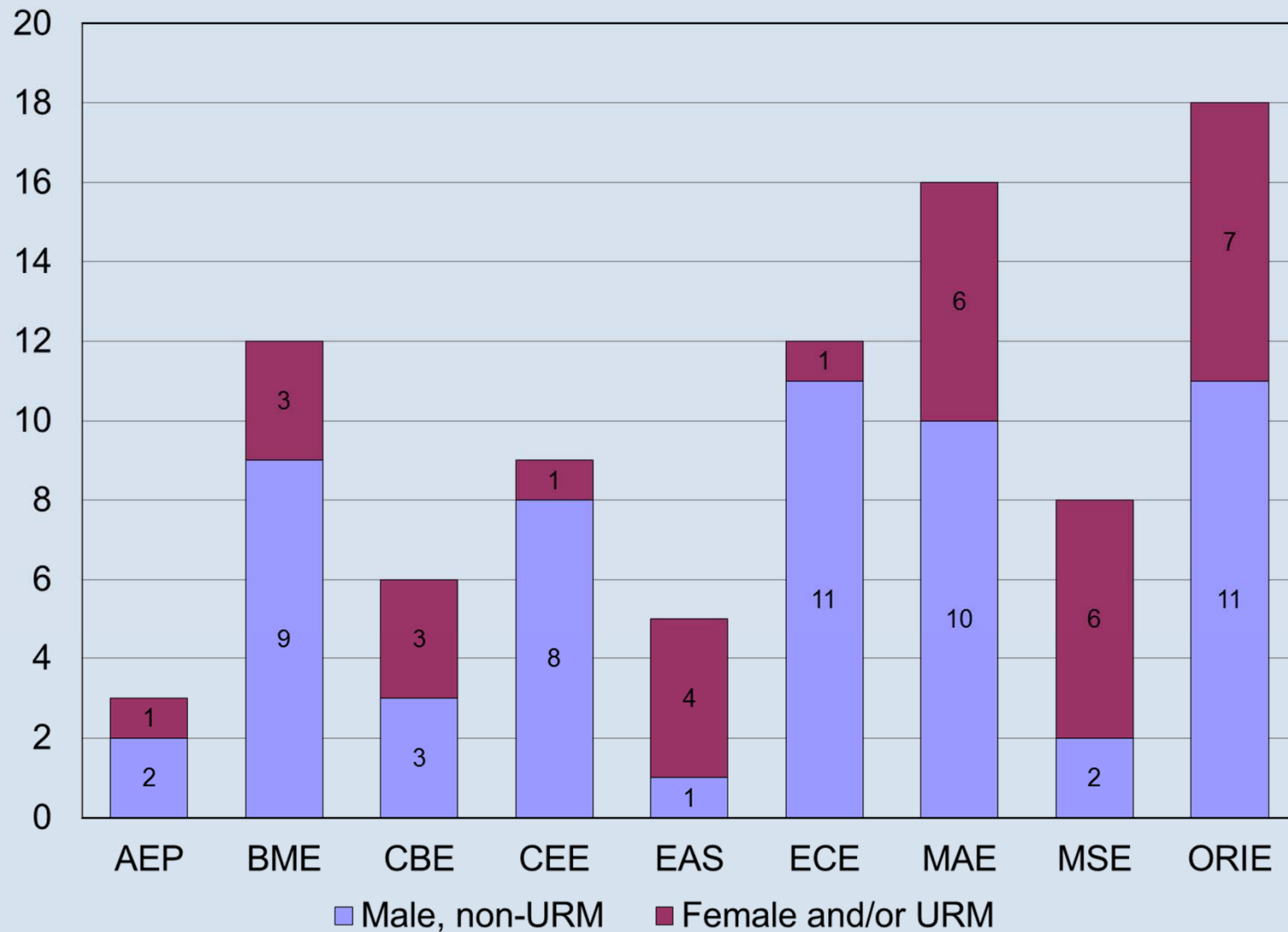


# Faculty Hiring by Year

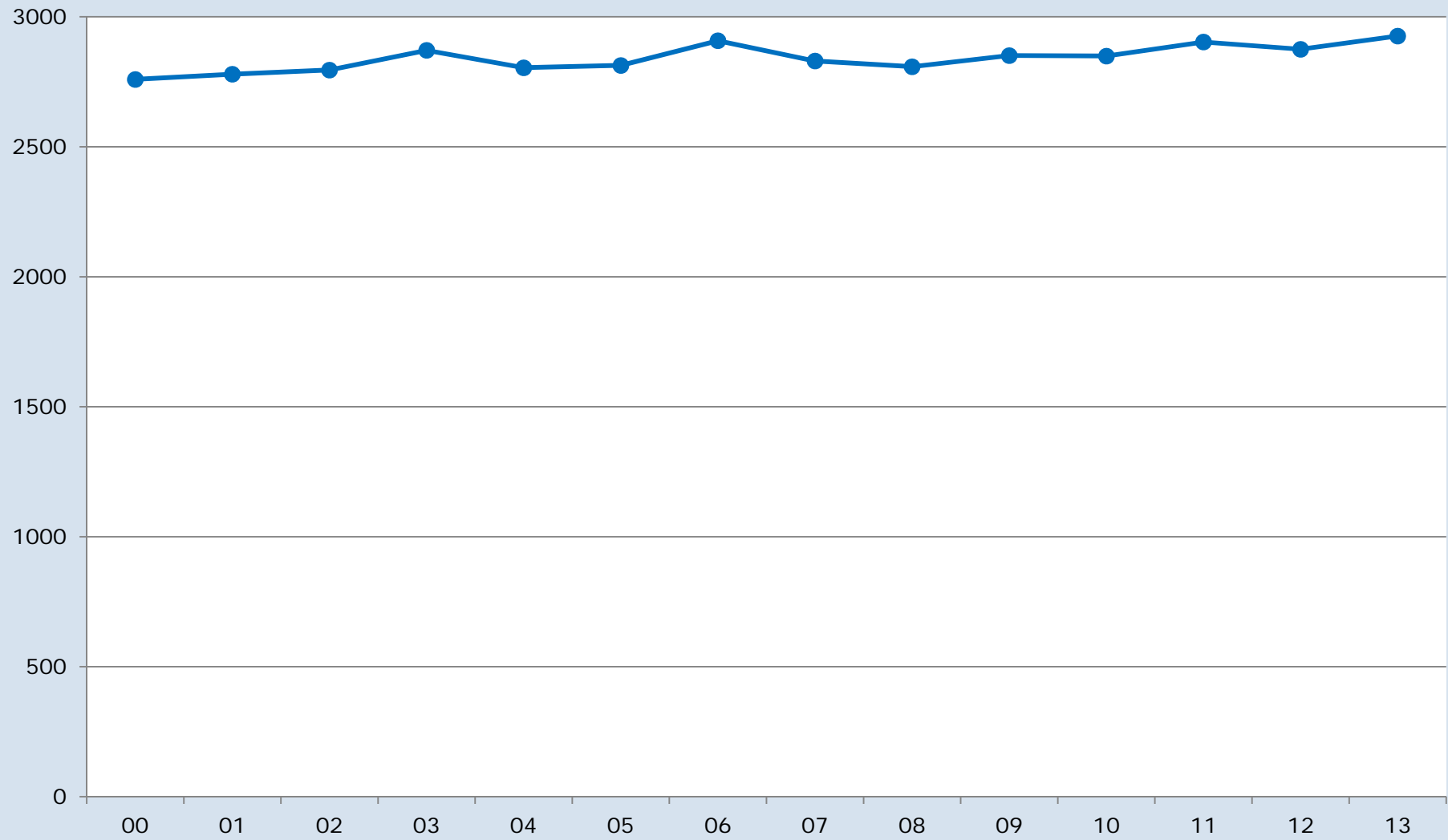
## College of Engineering Hiring by Year



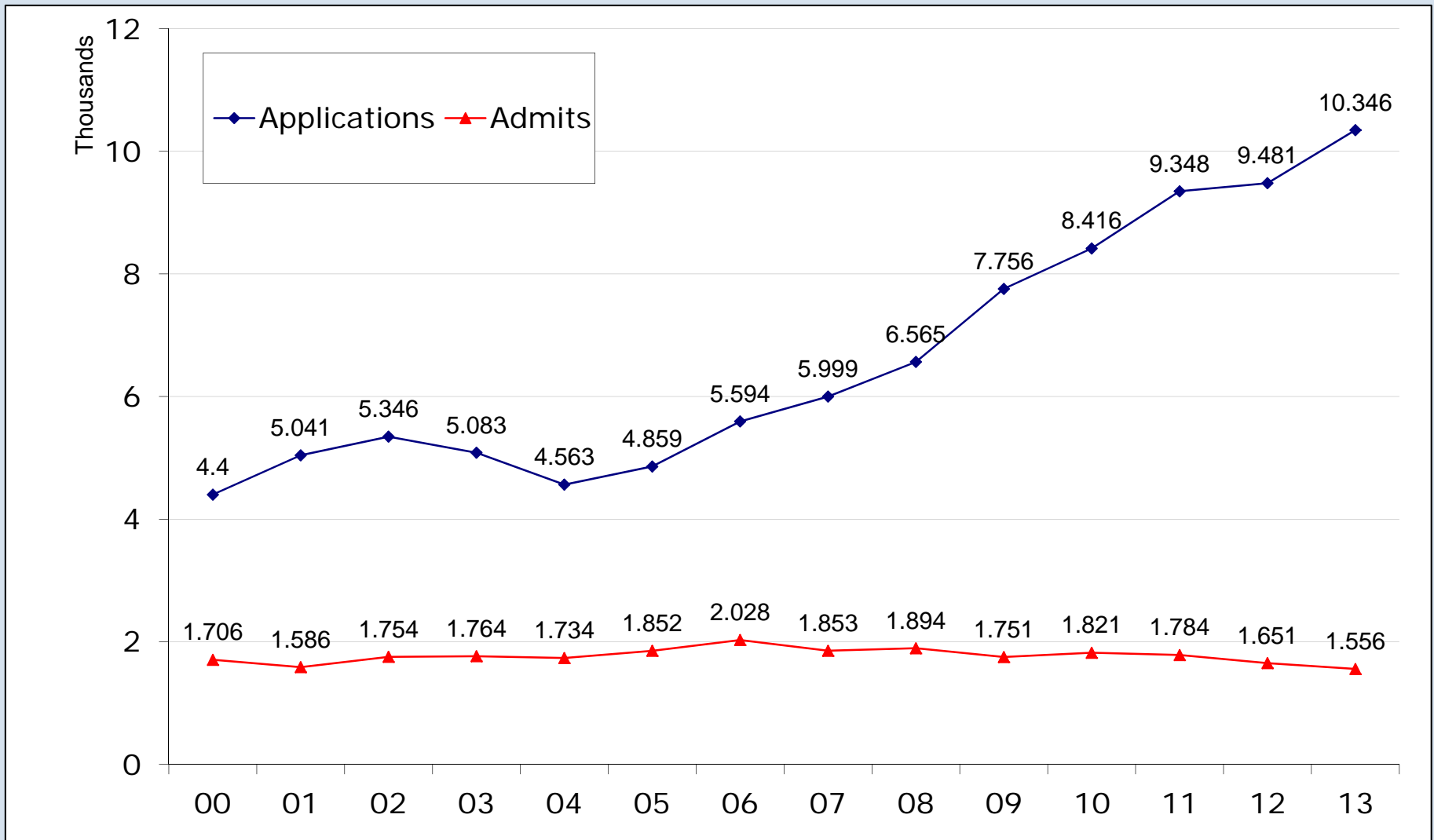
# Faculty Hiring by Department: Cumulative Over Past 9 years



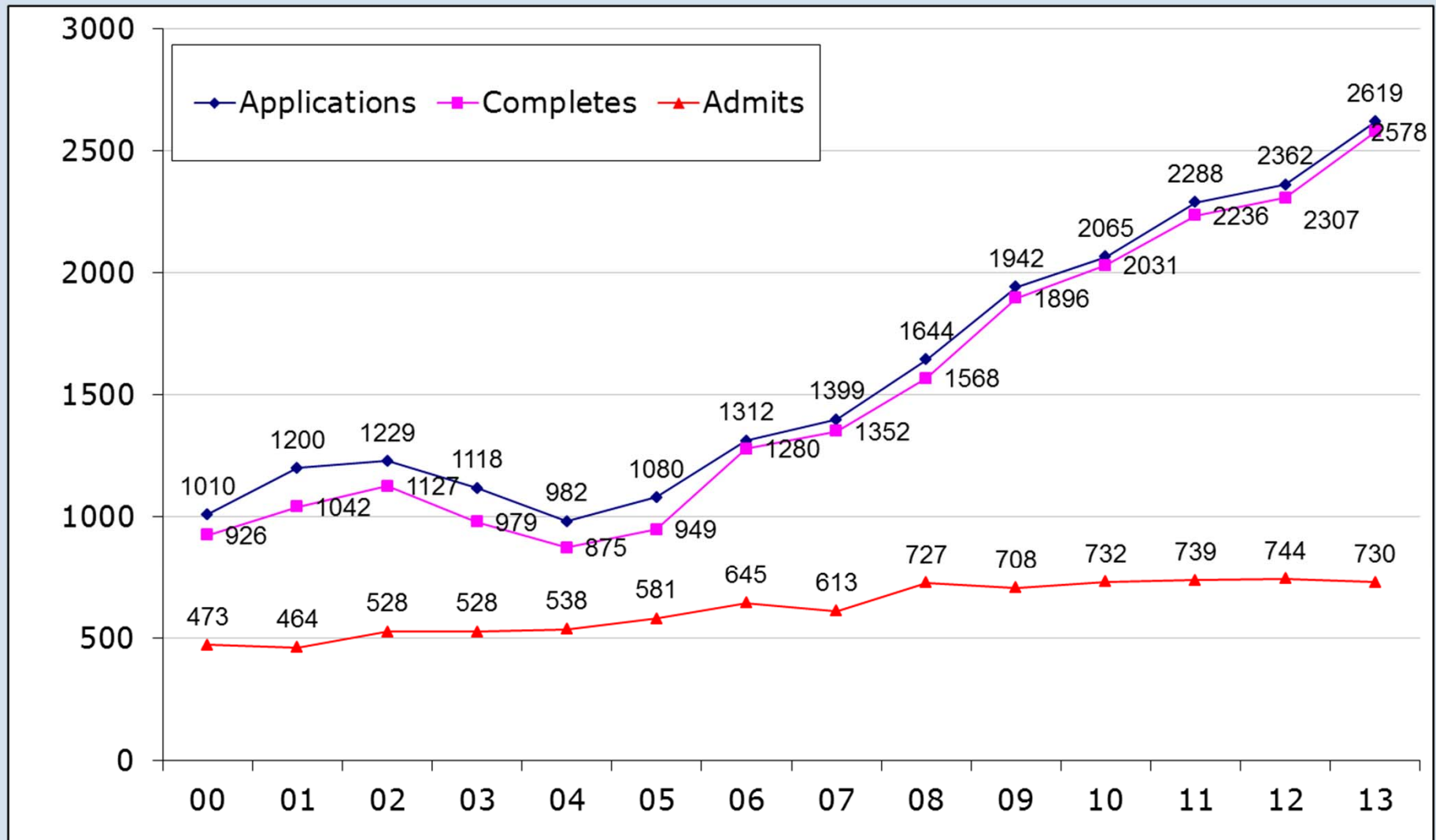
# Engineering Undergraduate Enrollment



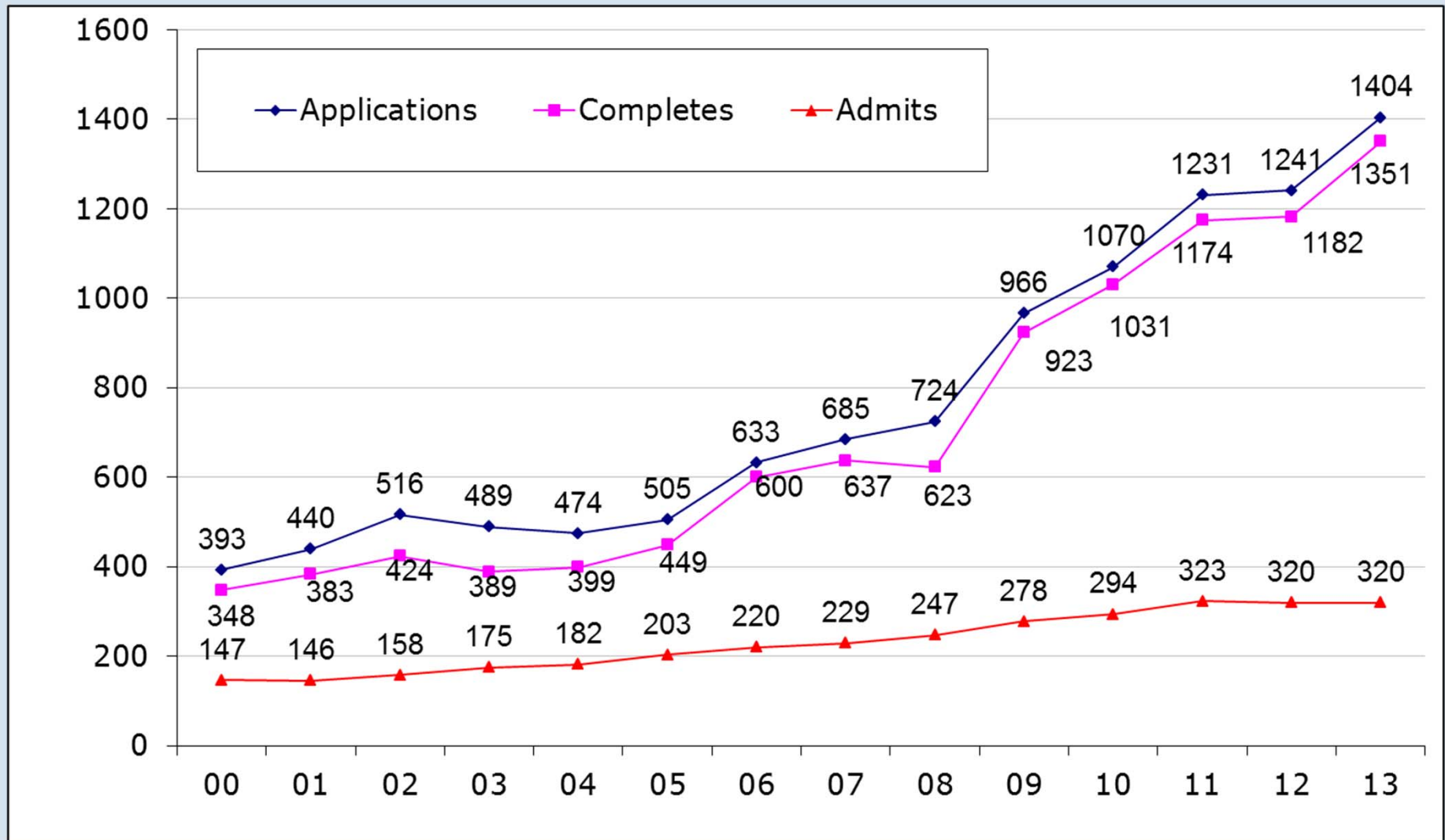
# Total Applications for Admission



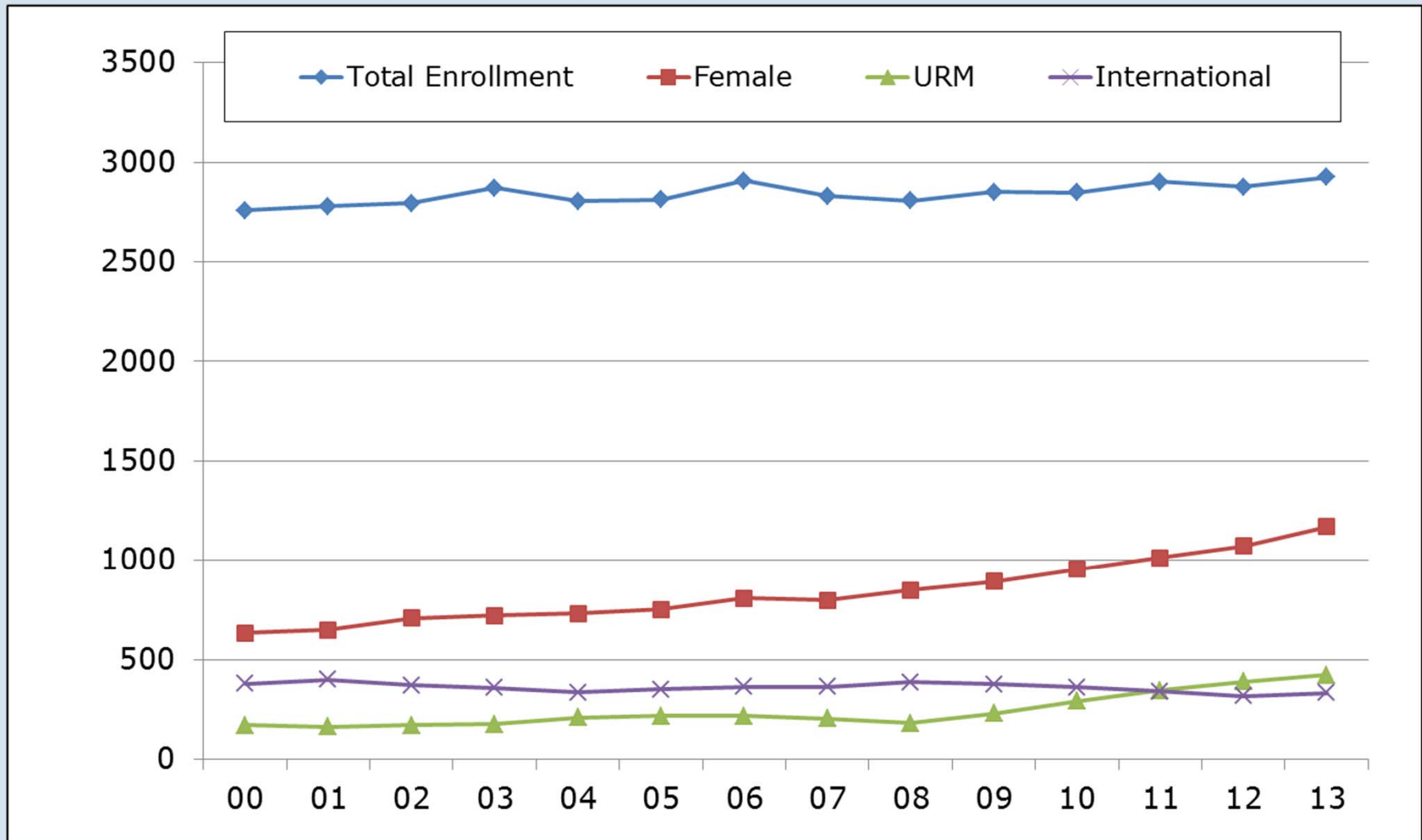
# Total UG Women Applications for Admission



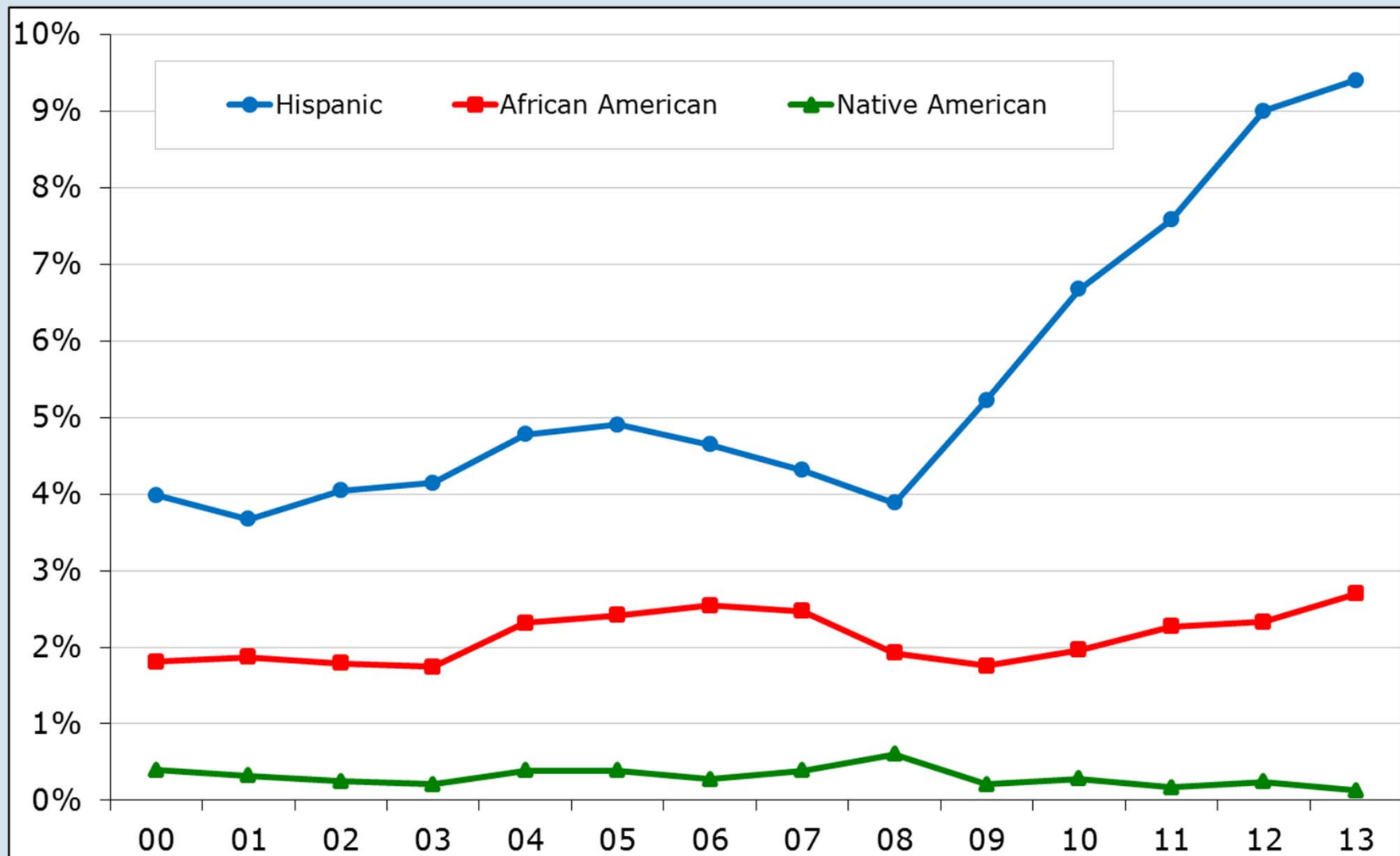
# Total UG URM Applications for Admission



# Undergraduate Women, Minorities and International



# Undergraduate URM Ethnicity

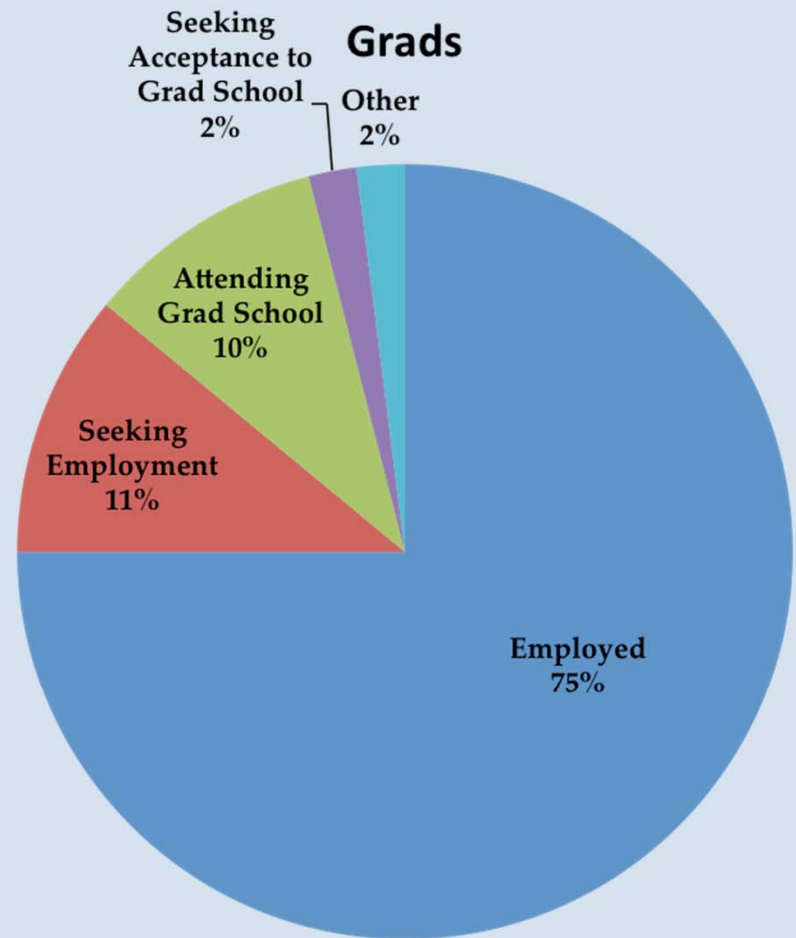
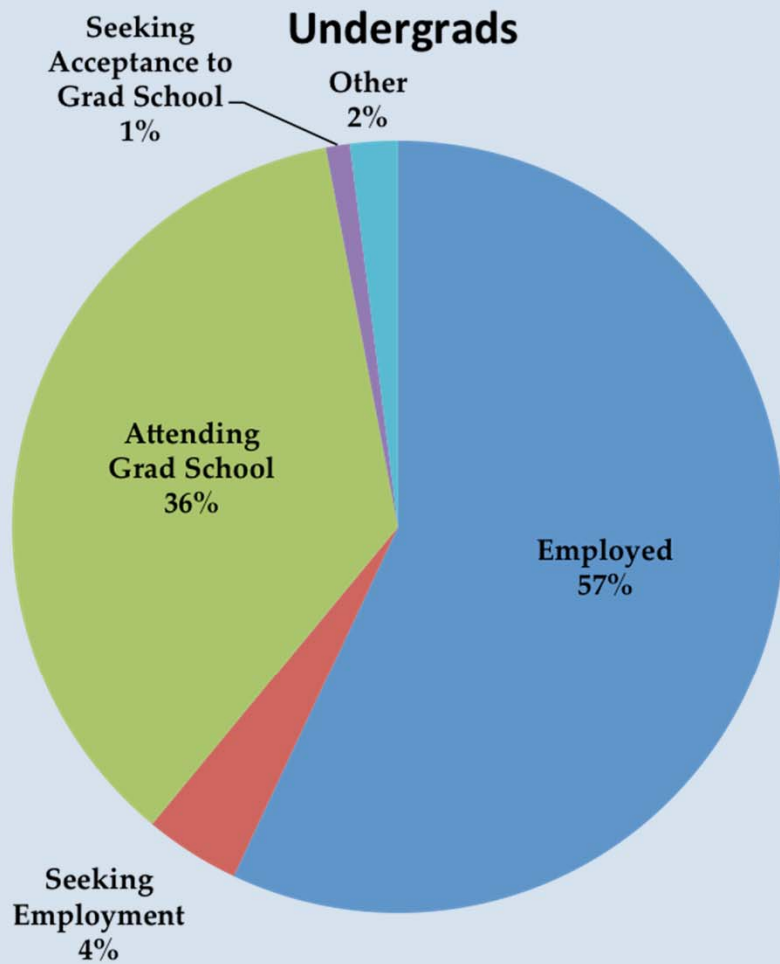




# ENGINEERING CO-OP & CAREER SERVICES INITIATIVES

- **Kessler Fellows Program:** Additional \$1M gift for Program Support
- **2013 Co-op Summer Courses** generated \$1.2M into College budget
- **BS Engineering Average Salaries** increased 8.4% to \$70,135 for 2012 Class
- **MENG Job Search Boot Camp** (with Research & Graduate Studies Office): 350 new MENG students attended Weekend Prep Seminars on Resumes, Interviewing, Job Search Strategies
- **280 Employers and 3,145 students** attended Engineering Career Fair in September 2013
- **New First Year Family Weekend Initiative:**
  - “Career Fair” of 30 Engineering Freshman Parents will discuss career paths with students
- **Serving on NY State Task Force** to design an online Career Development Course for use by STEM Students statewide (funded by SUNY)
- **Hosted CEO of GE China** to connect with 130 Chinese Nationals for jobs

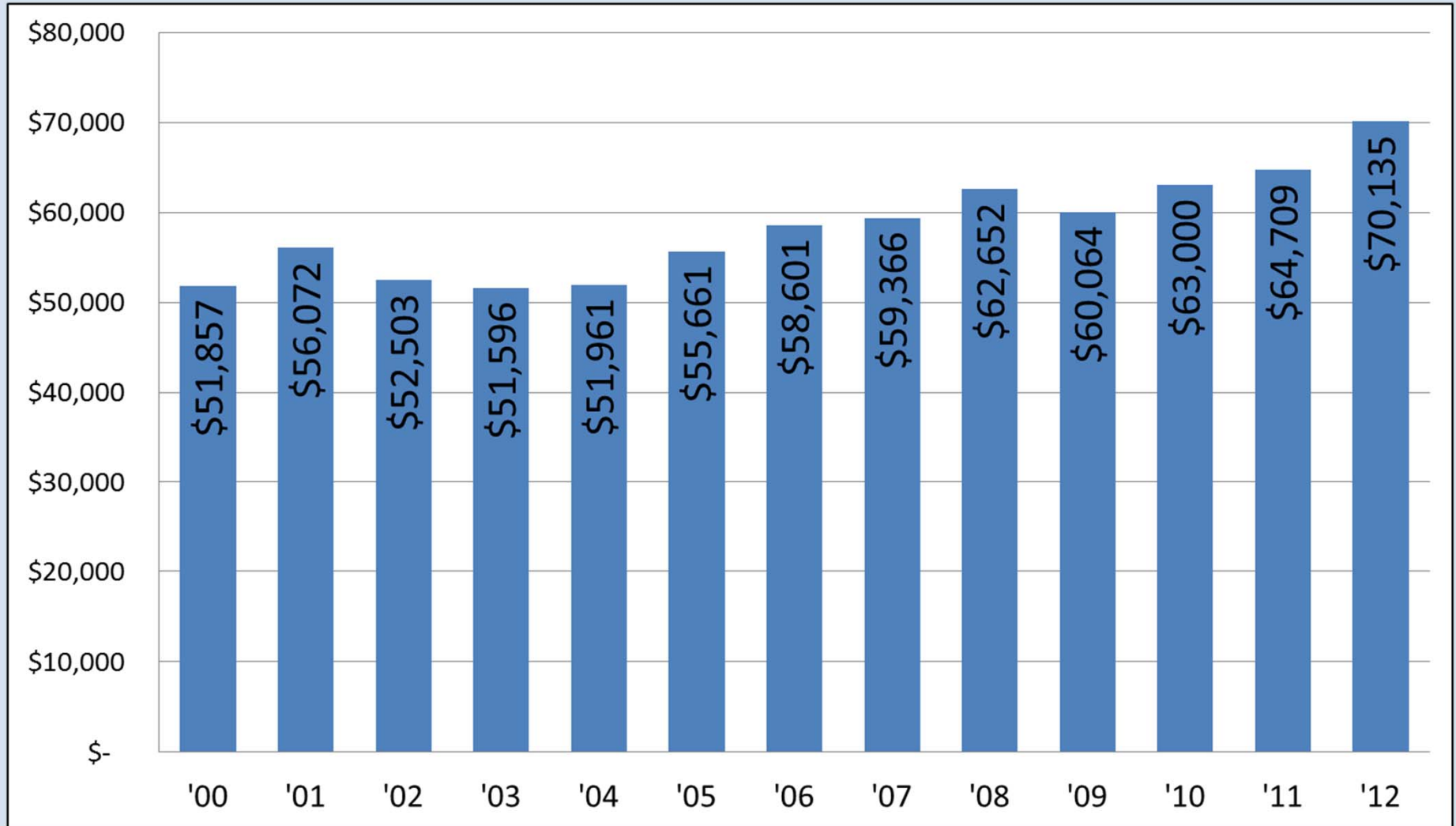
# Career Placement Update



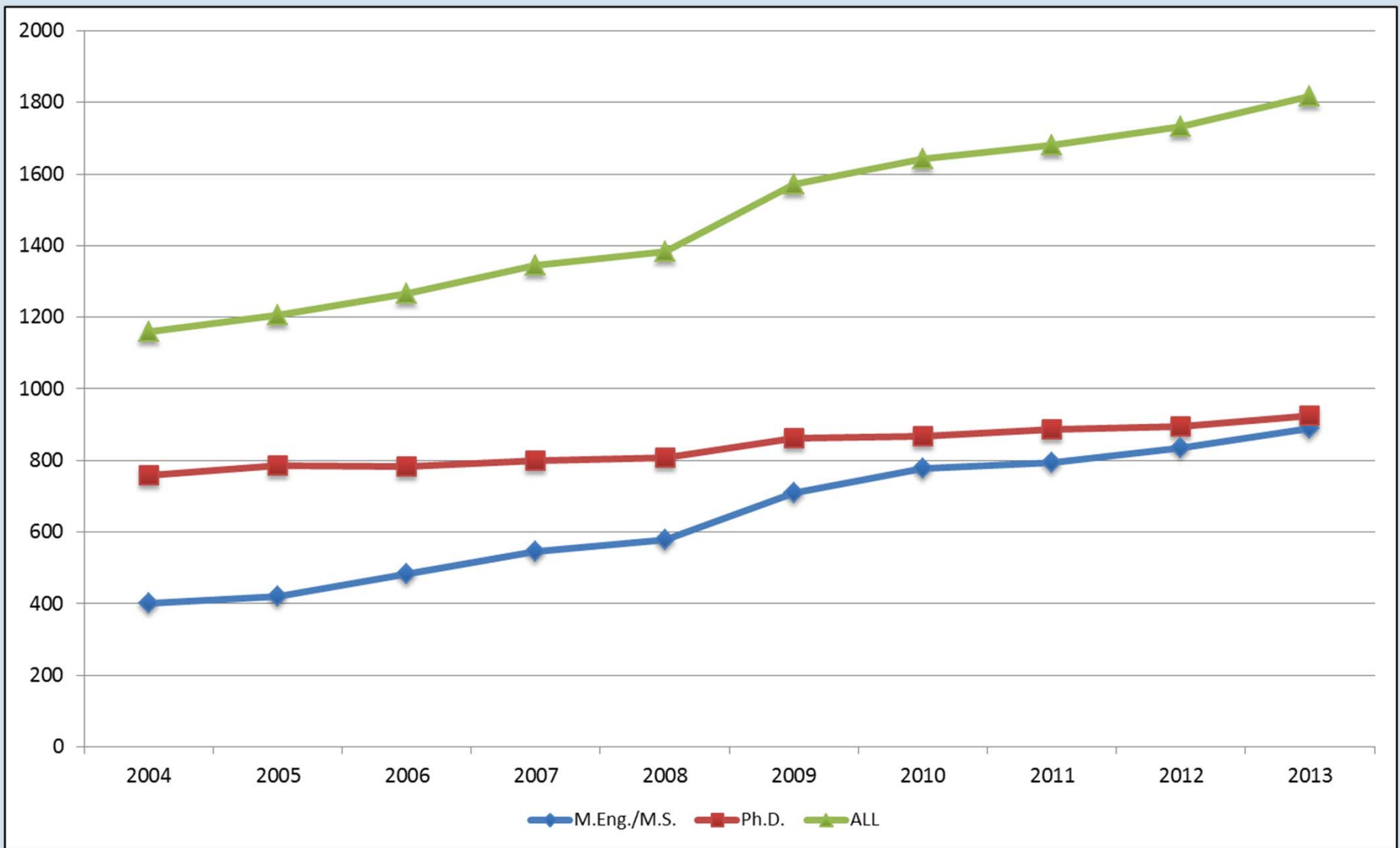
Class of 2012 as of Feb 2013

# Average Undergraduate Salaries

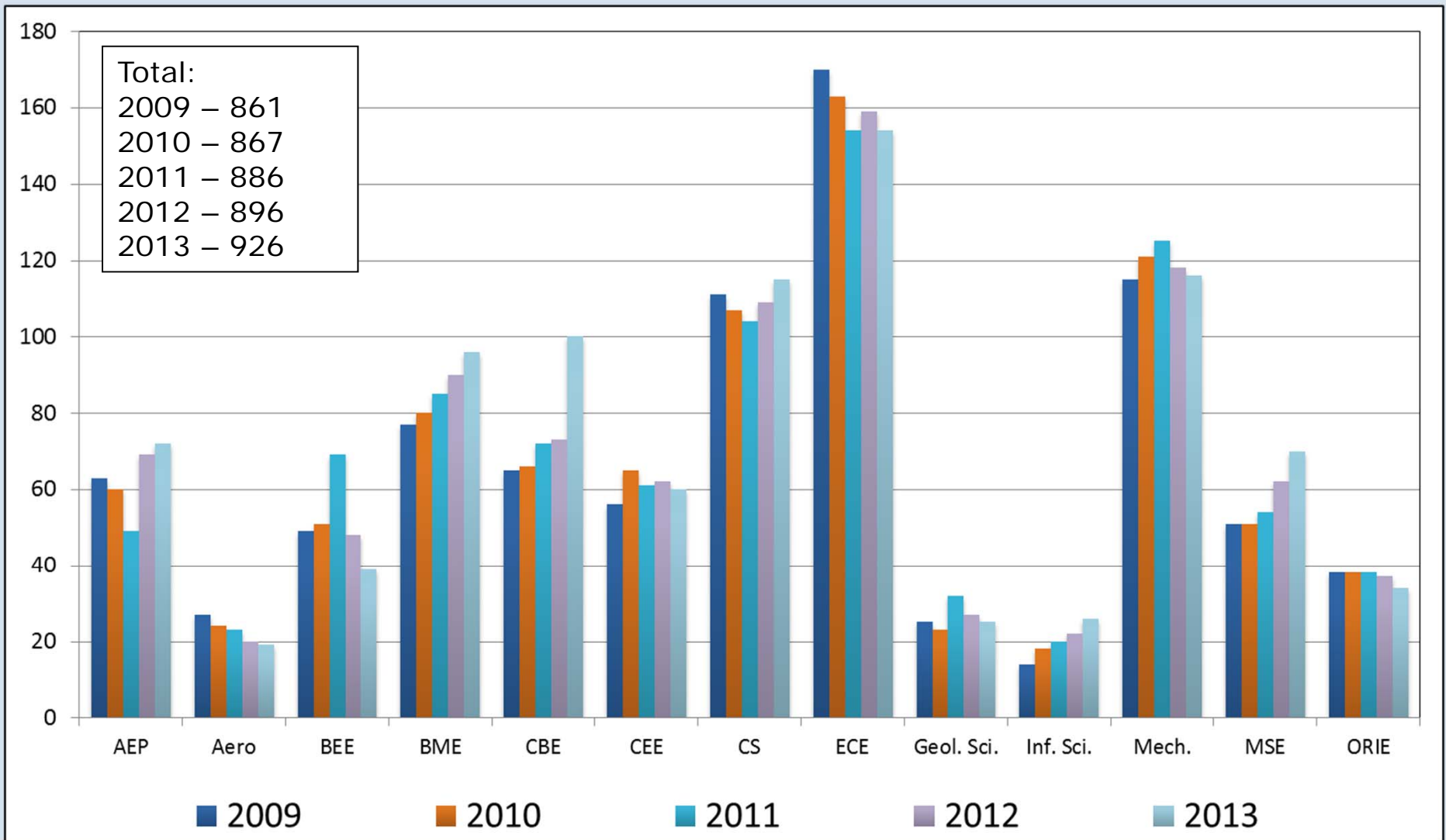
Cornell placed 7<sup>th</sup> on Forbes "10 Best Colleges for your Bank Account"



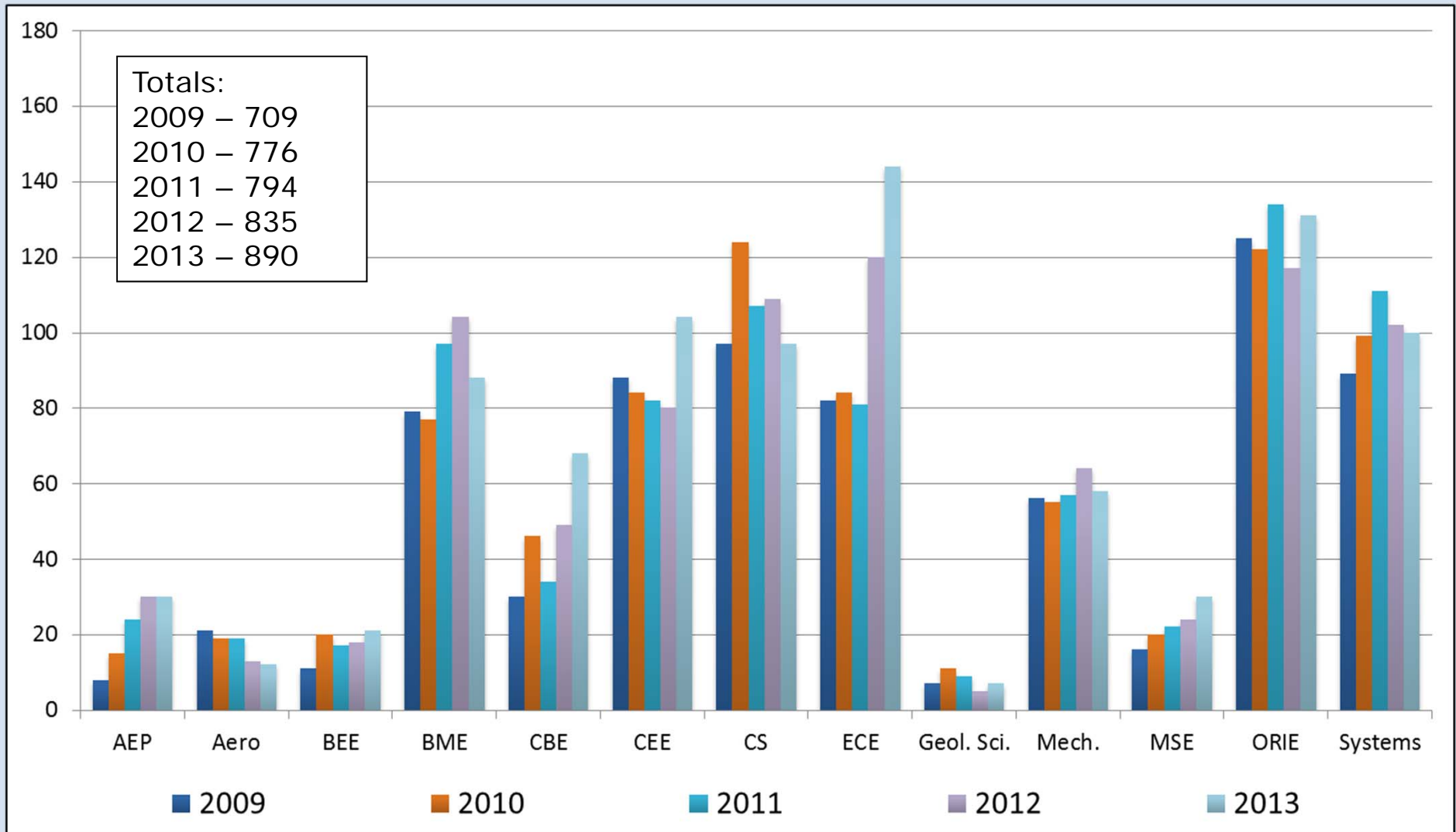
# Graduate Student Enrollment



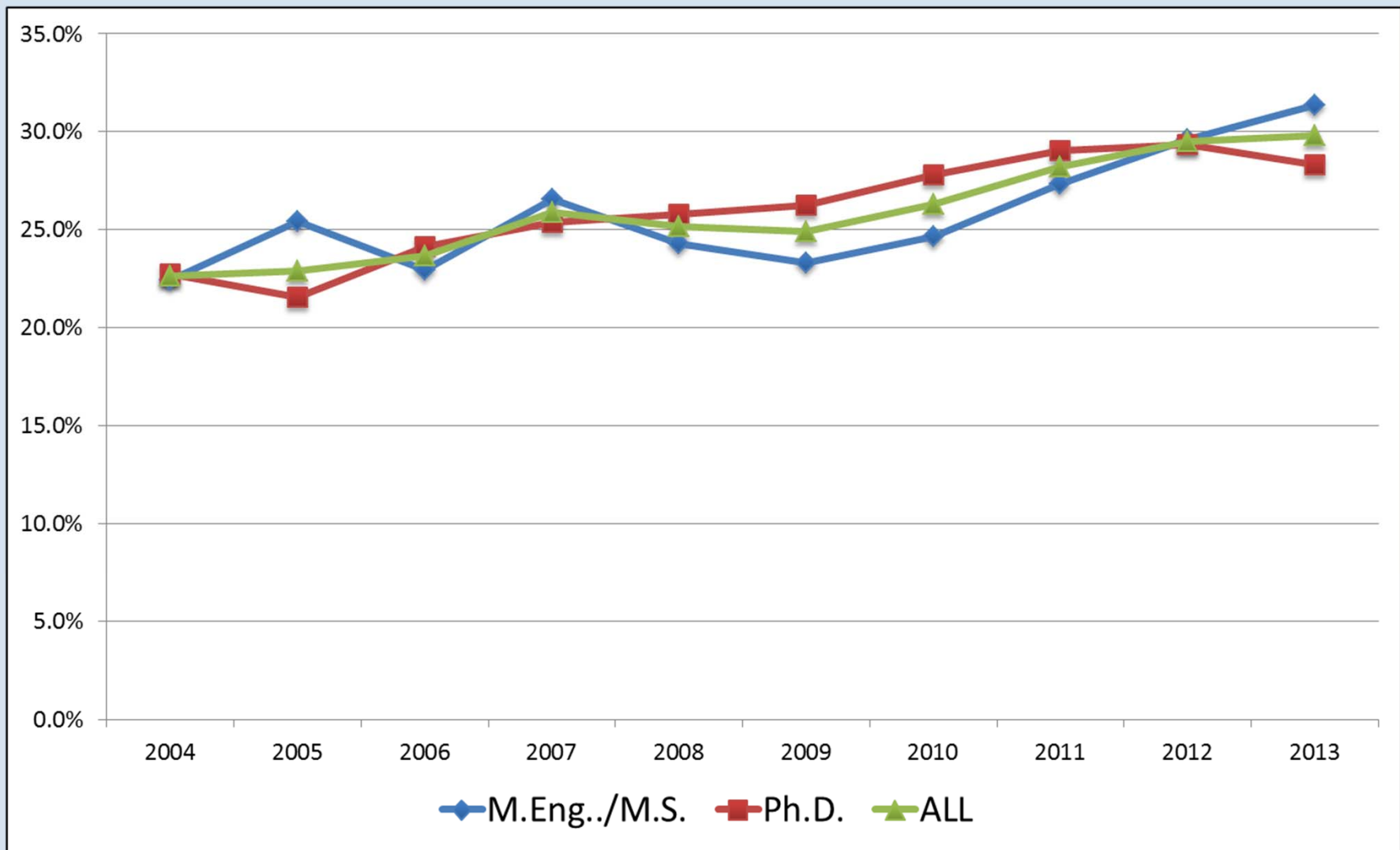
# PhD Enrollment by Field



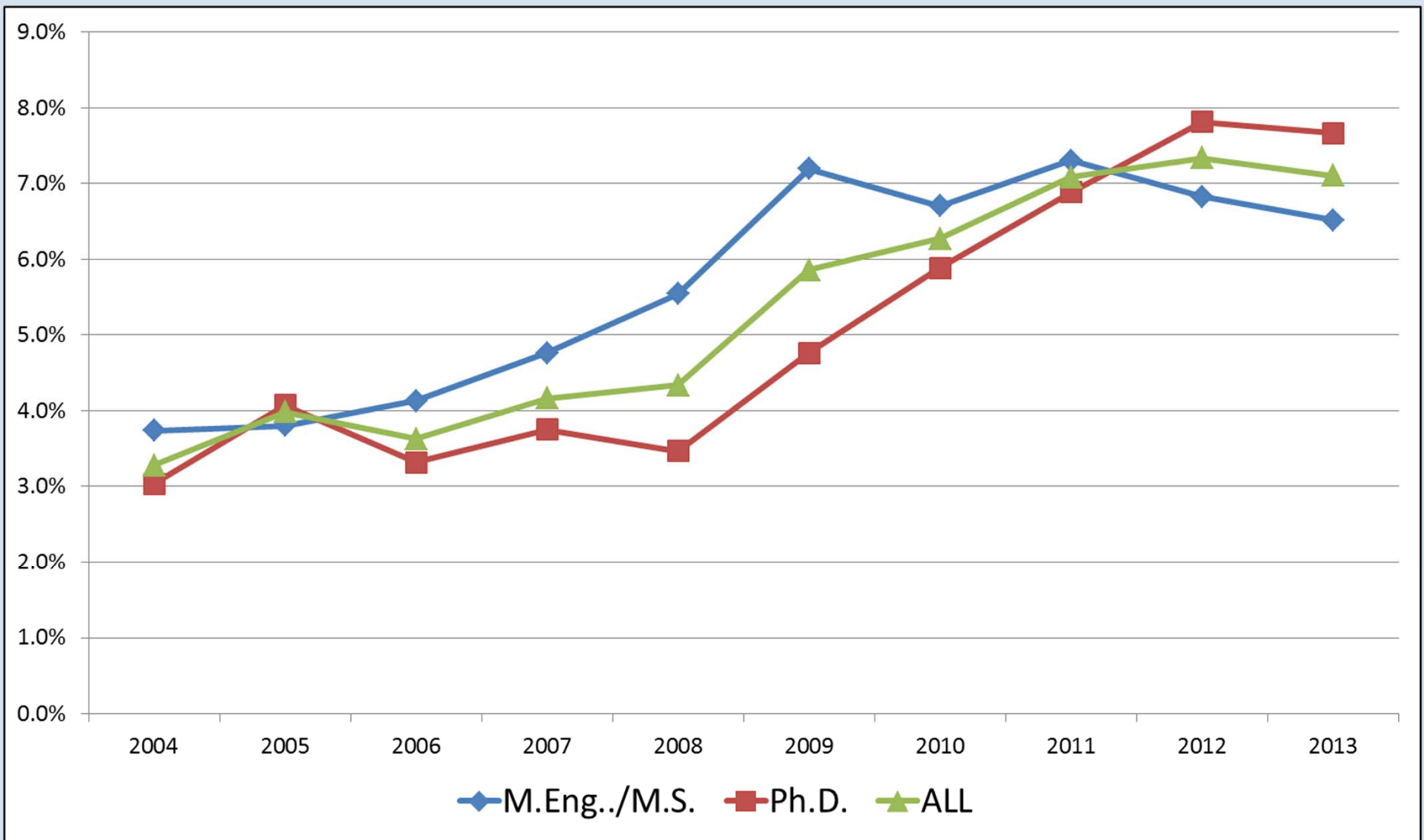
# M.Eng/MS Enrollment by Field



# Graduate Student Enrollment Women

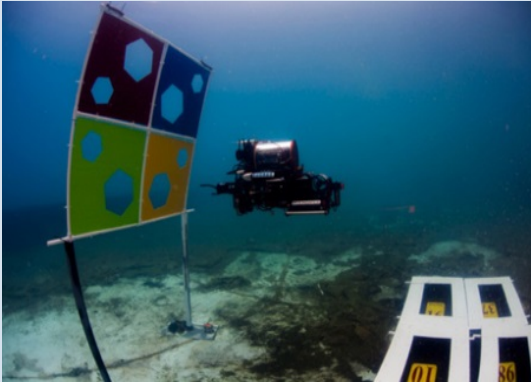


# Graduate Student Enrollment Underrepresented Minorities





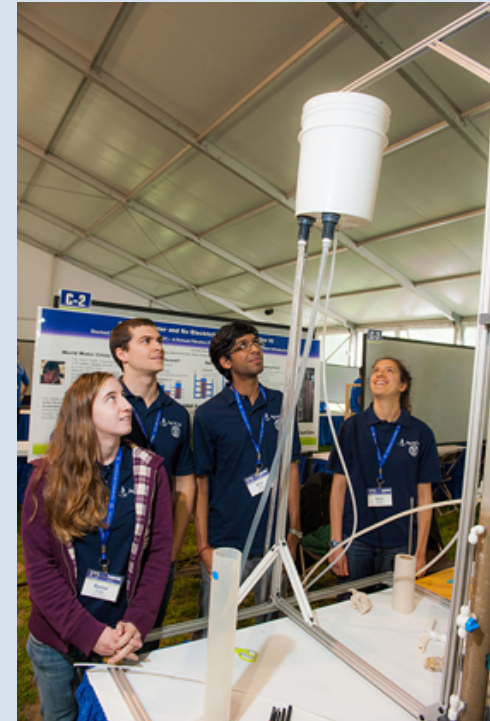
# Student Project Teams



Cornell's Autonomous Underwater Vehicle project team wins 1<sup>st</sup> place in RoboSub student competition for second consecutive year.

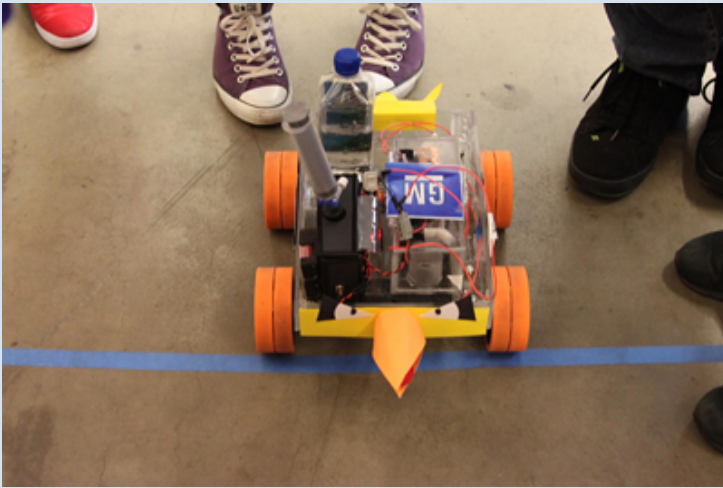


Cornell Baja SAE Racing Team wins 1<sup>st</sup> Place Overall at 2013 Baja SAE International Competition



Agua Clara Team wins EPA's prestigious People, Prosperity and Planet Award for their "Stacked Rapid Sand Filtration – A Robust Filtration Process for Sustainable Drinking Water Infrastructure" project.

# Student Project Teams

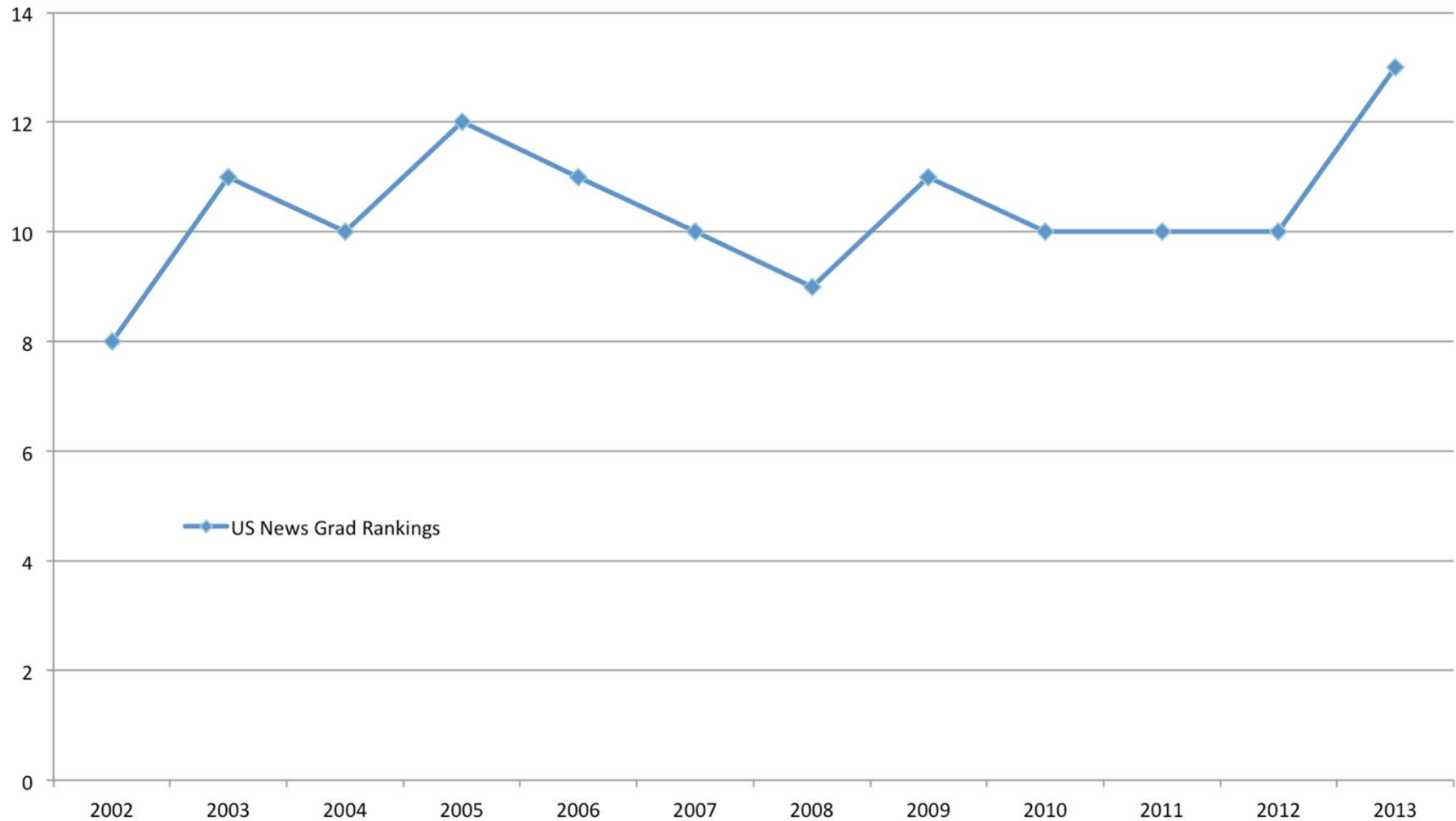


ChemE car 'Zapdos' takes 1<sup>st</sup> place at nationals in November 2012.



CU Air (Cornell University Unmanned Air Systems) team wins 2013 competition for first time.

# Cornell Engineering Graduate Rank in U.S. News 2002-2012



# Cornell Engineering Graduate Program Specialty Rankings 2010 - 2013

Year Rankings Released	2010	2011	2012	2013
<b>College of Engineering</b>	<b>10</b>	<b>10</b>	<b>10</b>	<b>13</b>
Aerospace	12	11	11	11
Bio/Agriculture	4	4	3	3
Biomedical	20	20	15	20
Chemical	13	13	17	16
Civil	10	10	8	10
Computer Engineering	NR	8	9	5
Electrical	9	9	9	7
Environmental	14	14	12	11
Industrial	8	8	10	7
Materials	8	8	10	7
Mechanical	8	8	9	9

# Cornell Engineering Undergraduate Program Specialty Rankings 2009 - 2013

Data Ranking Released	Sept. '09	Sept. '10	Sept. '11	Sept. '12	Sept. '13
<b>Edition</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>
<b>Program</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>
<b>College of Engineering</b>	<b>11</b>	<b>10</b>	<b>10</b>	<b>10</b>	<b>7</b>
Aerospace	11	12	11	11	13
Bio/Agriculture	1	4	4	3	9
Biomedical	27	20	20	15	20
Chemical	16	13	13	17	14
Civil	10	10	10	8	9
Computer Engineering	9	NR	8	9	9
Computer Science	NR	5	NR	NR	NR
Electrical	9	9	9	9	10
Engineering Physics	NR	3	2	1	2
Environmental	16	14	14	12	9
Earth Sciences	NR	13	NR	NR	NR
Industrial	8	8	8	10	12
Materials	11	8	8	10	8
Mechanical	9	8	8	9	10

# Status of Budget

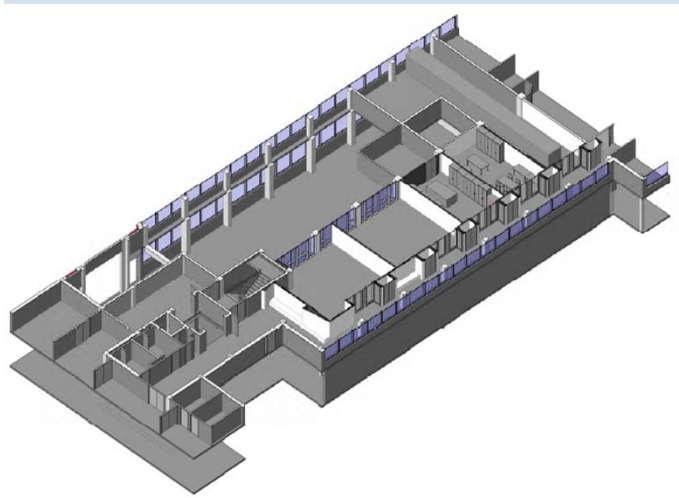
- University implemented new budget model
  - Hybrid model implemented in FY 2014
    - Combination of: (i) activity based distribution of revenues/expense (formulaic); and (ii) central allocation
  - Provost subvention smoothed transition for FY 2014
  - Minimal impact to CoE this fiscal year
- Implementation at college level
  - University level model will not “flow down” to departments
  - CoE established committee to develop model for college
  - CoE model implementation in FY 2015
- New budget model continuous improvement for 2015
  - Provost and Deans revisiting assumptions (tweaking)
  - Central allocation process for colleges and administrative units
  - Oversight to manage spending on administrative functions

# Facilities

- With the assistance of the architectural firm Payette, we have updated the College Facilities Master Plan
  - University guidelines require 100% funding before construction
  - Cost of renovation is 50% of the cost of new construction
- Planned major renovations across the quad
  - Kimball Hall (house BME growth short term, MSE long term)
  - Upson Hall (MAE and ECE)
  - Hollister Hall (CEE, particularly environmental research)
  - Looking at “reskinning” all 1950’s vintage buildings to improve environmental efficiency and the overall look of the quad
  - Carpenter Hall to house all of student services (frees Olin Hall)
- New construction to house growth of BME
  - Site selection process

# FACILITIES

- Kimball Renovation
  - For Interim BME; MAE, MSE, ECE
  - Cost - \$14.6M
  - Schedule – Jan Bid; Complete Dec '14
  - Status –Construction Drawings Started
  - CDs for Upson Swing Space in Review



Kimball Wet Labs

Upson Mezzanine  
Swing Space

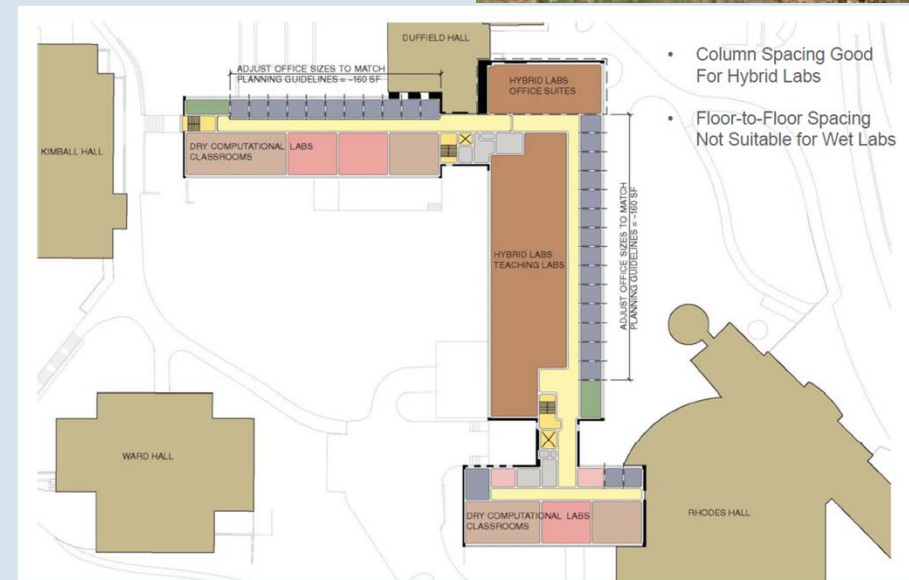




# FACILITIES

- Full Renewal of Upson

- Use CIS Space Vacated in Gates Move
- Addresses Non-BME Program Needs
- Hybrid Labs, Modern Classrooms
- Better Department Identities
- Extends Building Life/Reclad Exterior
- Cost - \$68.4M
- Schedule – Phased
- Design Completion Apr ' 16
- Status – First PAR Approved
- Architect Selection Begun



# FACILITIES

- BME Building

- Wet Labs
- Dept. Home
- Student Space
- Supports UG Program
- Requires Philanthropy
- Status - Site Selection Through Jan 2014



- Other Current Projects

- Hollister Environmental Lab Upgrade Completed
- Snee Trace Geochemistry Cleanroom in Design

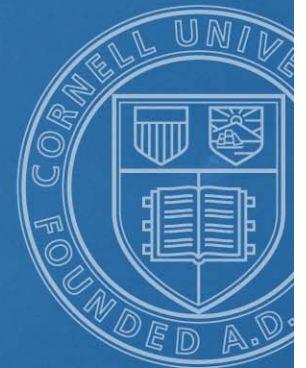
The background of the slide is a blue-tinted photograph of a large, dark, curved architectural structure, possibly a bridge or a sculpture, set against a bright blue sky with scattered white clouds. In the upper right, the word "ENGINEERING" is written in large, light blue, semi-transparent capital letters. Below it, the text "CORNELL ENGINEERING" is written in smaller, white, all-caps sans-serif font.

**CORNELL ENGINEERING**

# **College of Engineering Cornell Now Campaign Update**

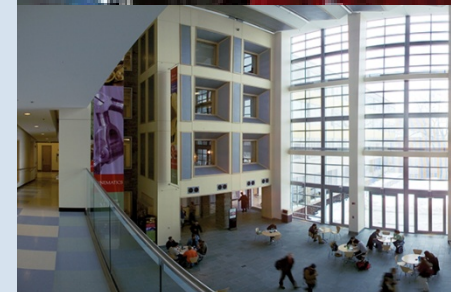
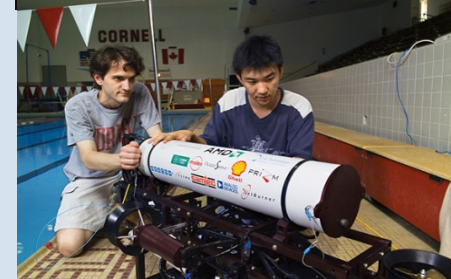
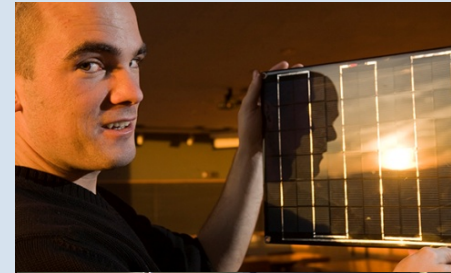
**Kathi Dantley Warren, Assistant Dean  
Alumni Affairs & Development**

**October, 2013**



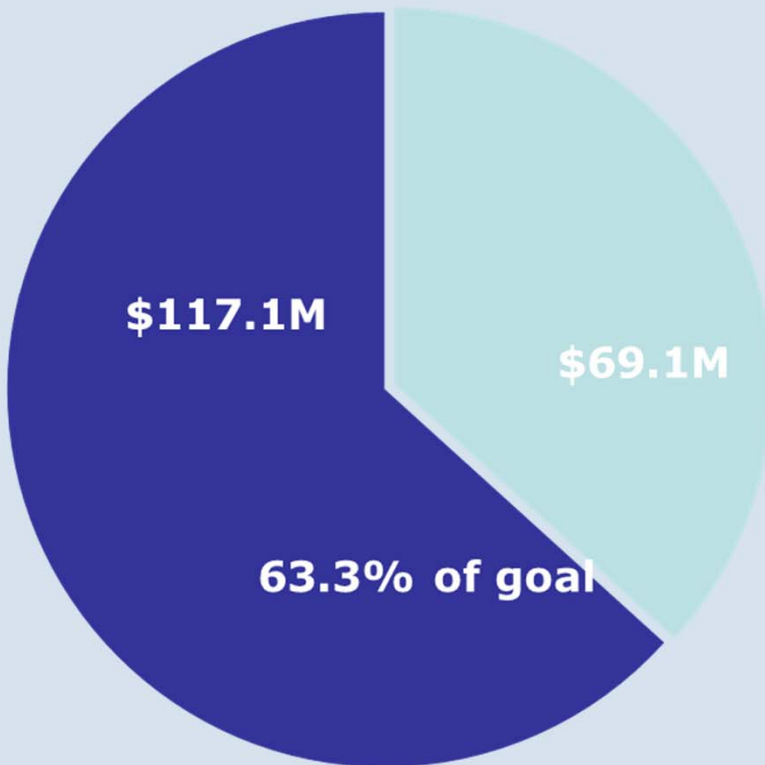
# College of Engineering Campaign Priorities

❖ Bioengineering/BME	\$35M
❖ Graduate Fellowships	\$30M
❖ UG Scholarships	\$11.75M
❖ Experiential and Entrepreneurial Learning	\$10M
❖ Faculty Lines	\$9M
❖ Faculty Renewal	\$7.5M
❖ Energy & Sustainable Development	\$9M
❖ Faculty Diversity	\$1M
❖ Physical Sciences Bldg	\$1.25M



# Campaign Progress to Date

## College of Engineering Campaign



- To be raised
- Raised to date

### Highlights:

- Exceeded FY12 goal – **1<sup>st</sup> time since 2008**
- FY13 - **\$56.9M** raised on \$36M goal
- College-embedded fundraisers contributing **30%** of goal

**Goal = \$185M**

# FY14 Goals

- Raise \$40M for CoE
- Achieve or surpass \$1.7M for the Engineering Annual Fund
- Launch “mini-campaign” for BME building and faculty positions

# FY13 Advisory Council Giving

## FY 2013 Advisory Council Donor Participation As of 7/30/13

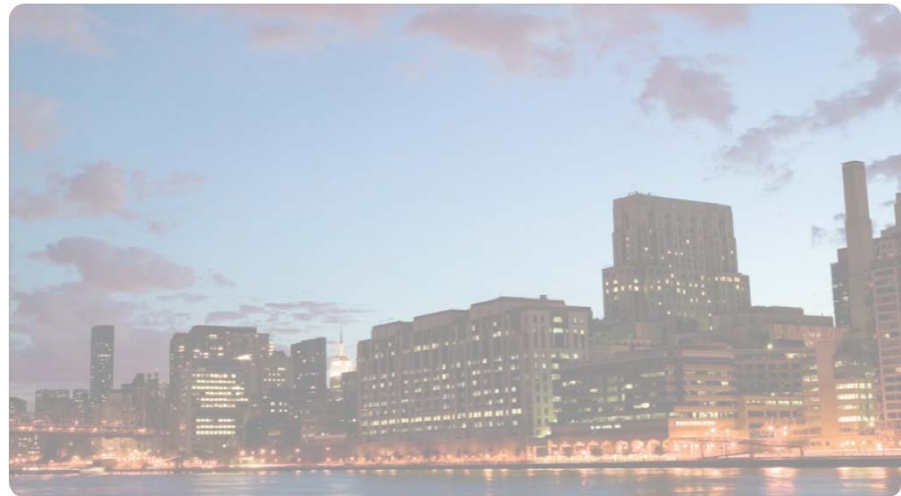
Advisory Council	# of Members	% C/U AF Donors	% C/U Overall Donors	% Overall AF Donors	% Overall Cornell Donors
A&S	57	77.2%	82.5%	84.2%	87.7%
AAP	28	71.4%	92.9%	71.4%	100.0%
ALS	38	76.3%	84.2%	78.9%	97.4%
ATHLETICS	57	29.8%	91.2%	66.7%	98.2%
CIS	10	0.0%	40.0%	20.0%	60.0%
ENG	26	61.5%	69.2%	80.8%	84.6%
HOTEL	41	43.1%	80.5%	41.5%	82.5%
HUMEC	30	70.0%	90.0%	76.7%	93.3%
ILR	40	80.0%	95.0%	80.0%	97.5%
Johnson	44	81.8%	93.2%	84.1%	93.2%
LAB of O*	27	74.1%	77.8%	74.1%	81.5%
LAW	58	66.1%	88.1%	66.1%	86.4%
LIBRARY	30	43.3%	90.0%	60.0%	90.0%
MUSEUM	45	80.0%	84.4%	82.2%	84.4%
PLANTATIONS	24	83.3%	95.8%	87.5%	95.8%
SAS**	101	16.8%	24.8%	64.4%	87.1%
VET	15	66.7%	80.0%	53.3%	93.3%
Board of Trustees				100.0%	100.0%
University Council				53.3%	81.8%
Cornell Alumni Association				69.6%	89.3%

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NYC**TECH**

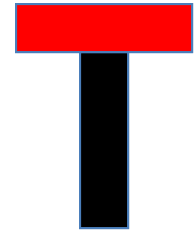


# Cornell NYC Tech Campus: Vision

- Attract best and brightest faculty and grad students from global pool
- Create a new tech center for a new century, global and urban
  - Accelerate existing sectors of city's economy: media, finance, medicine, design and other information-intensive industries
  - Drive formation of new technology businesses through close ties to customers, unique domain knowledge, and education of Masters/ Ph.D. students
- Serve as focal point of NYC's tech ecosystem



## What We're Addressing



- Core problem: persistent shortage of tech talent, with depth in CS, ECE, IS, ORIE, ...
  - Major risk to information economy
  - Tech expertise alone increasingly insufficient, but interdisciplinary programs often sacrifice depth
- Related problem: academic-industry gap
  - Collaboration beyond recruiting not effective
  - Handoff rather than co-development approaches
  - High overhead compared to value – “friction”

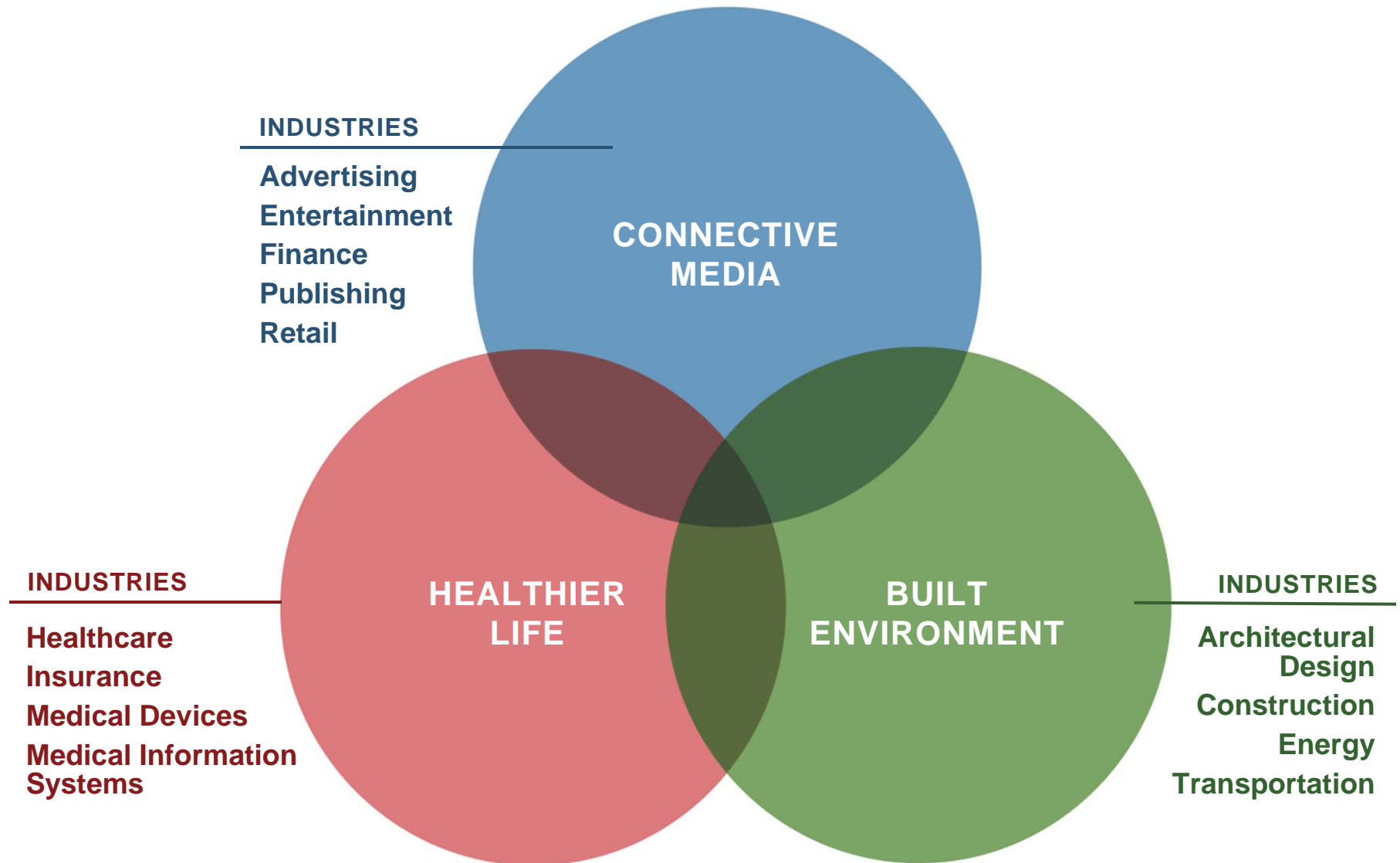
## Our Approach

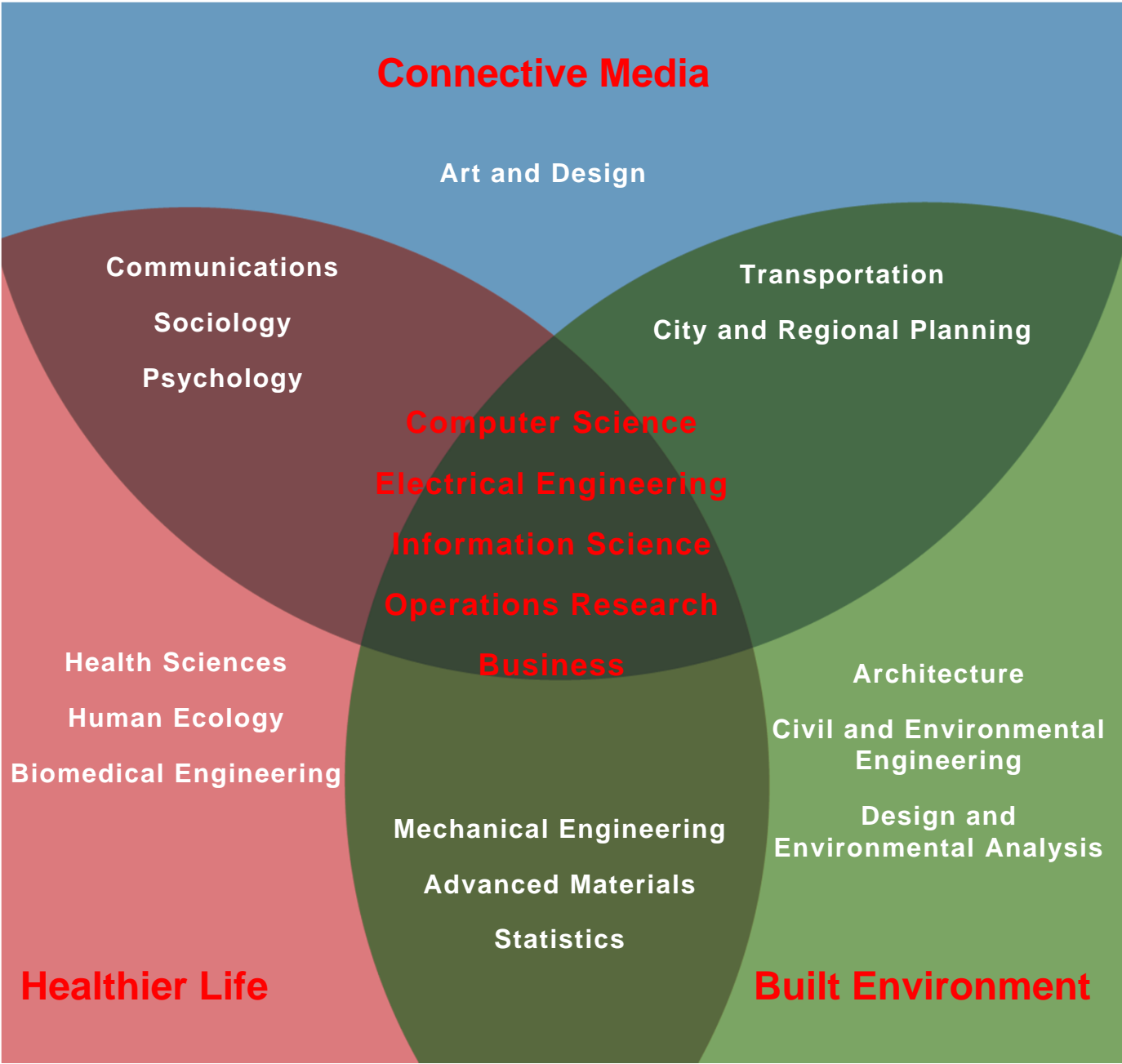
- A new culture of technical depth coupled with active real-world engagement
  - Matrix structure around core disciplines and multi-disciplinary “hubs”, everyday engagement
- A new curriculum combining aspects of engineering, business and design programs
  - On-campus, apprenticeship-style
  - CS/Engineering depth combined with practical skills and exposure to real problems

# Joan and Irwin Jacobs Technion-Cornell Innovation Institute (JTCII)

- Joan and Irwin Jacobs donate \$133M to name the Technion-Cornell Innovation Institute
- JTCII a centerpiece of the campus
  - Emphasizing interdisciplinary work with strong commercial potential
  - Focus on three initial “hub” areas: Connective Media, Healthier Life, Built Environment
  - Novel dual degree interdisciplinary MS
- Scale of JTCII about 1/3 of campus
  - Half JTCII faculty from each school

# Hubs Tied to NYC Industry Sectors





# Academic Programs at Cornell Tech

- Graduate degrees only related to the tech sector
- Cornell Masters of Engineering/Professional Studies (1 year)
  - CS, ECE, IS, ORIE
  - Required business and entrepreneurship classes
  - Project and advisor from industry
- Masters of Science through JTCII
  - 2-year dual degree from the Technion and Cornell
  - Concentration in one of the hubs
  - Broader focus on domain expertise
- Masters of Business Administration (MBA)
- Doctorate (PhD) degrees in traditional fields (Ithaca based degree)
- Eventually look for opportunities for undergraduates (e.g., internships, Co-op)
- Eventually develop K-12 programming (reach 10,000 students)

# Cornell Tech Update

- Currently located in Google Building (8<sup>th</sup> and 9<sup>th</sup> avenues, 15<sup>th</sup> and 16<sup>th</sup> streets)
- Dan Huttenlocher Dean and Vice Provost
- Cathy Dove Vice President
- Six faculty hired (not counting administration)
- Greg Pass (former CTO Twitter) Entrepreneurial Officer
- First enrolled class, Jan 2013 in Computer Science
- 23 MEng students; 10 PhD students
- Cornell NYC Tech partners with Commerce Department to innovate on how to facilitate commercialization

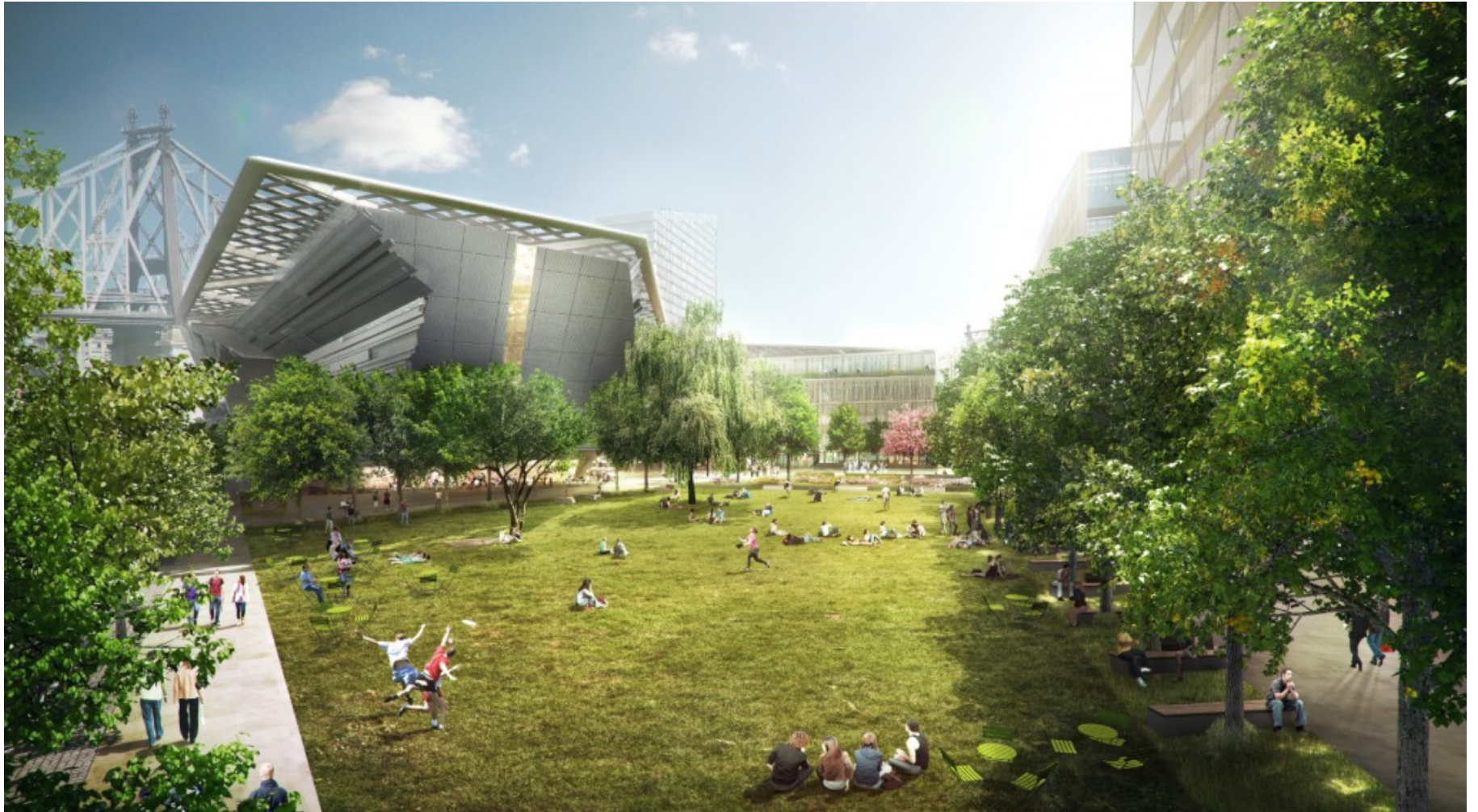


# Timeline

- City decision announced December 19, 2011
- Cornell opened Summer 2012 in Google space
- CS MEng degree initiated January 2013
- JTCII dual MS degree in “Connective Media” will start Fall 2014
- MBA degree (JGSM) will start Fall 2014
- First academic building on Roosevelt Island in 2017
  - 50+ NYC based faculty, 300+ full-time students, 300K+ SF space
- Full build by approximately 2040
  - 250+ faculty, 2000+ students, 2M+ SF space



# Cornell Tech



# Cornell Tech



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**Thank You!**

**October, 2013  
Lance R. Collins  
Dean of Engineering**

