

# Cornell Engineering Update

Lance R. Collins  
Dean of Engineering

October 26-27, 2017

Cornell Engineering



## Agenda

- General updates
  - College Leadership Updates
  - New Faculty, Awards
  - Research and Graduate Studies Highlights
  - Admissions Highlights
  - Diversity Highlights
  - Engineering Career Center Highlights
- Brand Update
- Facilities Update
- Cornell Tech Dedication
- Fiscal Year '18 Giving Update

Cornell Engineering



## College Leadership and Faculty Updates October 2017

CornellEngineering



### Associate Dean for Student Services



**Miranda Swanson**  
Associate Dean for  
Student Services

- Joining Cornell in December 2017.
- Associate Dean for Student Services – will oversee offices of undergraduate admissions, advising, engineering learning initiatives, the registrar and the career center.
- Currently Dean of Students at the University of Chicago's Physical Sciences Division where she has 16 years of experience in student services. She oversees services for about 1,300 students, including recruitment, admissions, registrar, financial aid, crisis management, disciplinary affairs and student programming.
- Degrees received:
  - M.A. in Humanities, University of Chicago, 2001
  - B.F.A. in Studio Art, University of Nebraska, 1997

CornellEngineering



## Director of Earth and Atmospheric Sciences



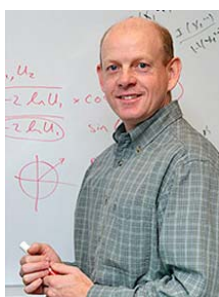
**David Hysell**  
Director of Earth and  
Atmospheric Sciences

- Joined Cornell in 2002.
- Professor of Earth and Atmospheric Sciences
- Selected Awards and Honors
  - Sonny Yau Excellence in Teaching Award, Cornell University, 2006
  - CEDAR Prize Lecture Award, 1999
  - URSI Young Scientist Award, 1996
- Degrees received
  - B.S. (Electrical & Communication Engineering), Penn State University, 1987
  - Ph.D. (Electrical & Communications Engineering), Cornell University, 1992
- Research Focus – Radar studies of ionospheric irregularities in middle and low latitudes; rocket investigation of convective storms at the equator.

**CornellEngineering**



## Director of Operations Research and Information Engineering



**Shane Henderson**  
Director of Operations Research  
and Information Engineering

- Joined Cornell in 2001.
- Professor of Operations Research and Information Engineering
- Selected Awards and Honors:
  - Tau Beta Pi Engineering Honor Society Professor of the Year 2016
  - NSF CAREER Award (NSF) 1999
  - Sonny Yau '72 Excellence in Teaching Award (Cornell University) 2014.
- Degrees received
  - B.Sc. (Mathematics), University of Auckland, 1992
  - M.S. (Statistics), Stanford University, 1995
  - Ph.D. (Operations Research), Stanford University, 1997
- Research Focus – Interplay between optimization and simulation.

**CornellEngineering**



## Emmanuel Giannelis named Vice Provost for Research



**Emmanuel Giannelis**  
Walter R. Read Professor of Engineering  
Vice Provost for Research

- Joined Cornell in 1987.
- Professor of Materials Science and Engineering
- Served as:
  - Associate Dean for Research and Graduate Studies (2014-2017)
  - Director, Department of Materials Science and Engineering (2004-2012)
  - Co-Director KAUST-Cornell Center for Energy and Sustainability (2008-2015)
- Selected Awards and Honors:
  - B.F. Dodge Distinguished Lecture (Yale University) 2009
  - Dow-Karabatsos & Distinguished Alumni Leadership (MSU) 2005
  - Associates Award in Applied Polymer Chemistry (PEL) 1999
  - Dean's Prize for Excellence in Teaching (Cornell University) 1994
  - Top 25 in Nanotechnology Citations (ISI)
- Degrees received
  - B.S. (Chemistry), University of Athens, 1980
  - Ph.D. (Inorganic Chemistry), Michigan State University, 1985
- Research Focus – Field of polymer nanocomposites.

**CornellEngineering**



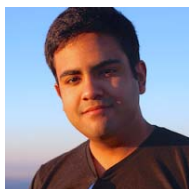
## New Faculty (Arrivals Fall 2017)



*Yadong Wang*  
*Professor, BME*



*Esteban Gazel*  
*Assoc. Professor, BME*



*Christopher DeSa*  
*Asst. Professor, CS*



*Bharath Hariharan*  
*Asst. Professor, CS*

**CornellEngineering**



## New Faculty

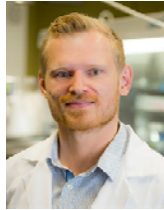
(Arrivals Fall 2017)



*Lorenzo Alvizi*  
Professor, CS



*Mahsa Shoaran*  
Asst. Professor, ECE



*Andrej Singer*  
Asst. Professor, MSE



*David Goldberg*  
Assoc. Professor, ORIE

**Cornell**Engineering



## Major Faculty Awards

- **American Academy of Arts and Sciences**
  - Fred Schneider (CS)
- **Mexican National Academy of Engineering**
  - Thomas O'Rourke (CEE)
- **Simon Ramo Founders Award, National Academy of Engineering**
  - John Hopcroft (CS)
- **Society for Industrial and Applied Mathematics Fellow**
  - James Renegar (ORIE)
- **American Society of Mechanical Engineers Fellow**
  - Christopher Hernandez (BME/MAE)

**Cornell**Engineering



## Major Faculty Awards

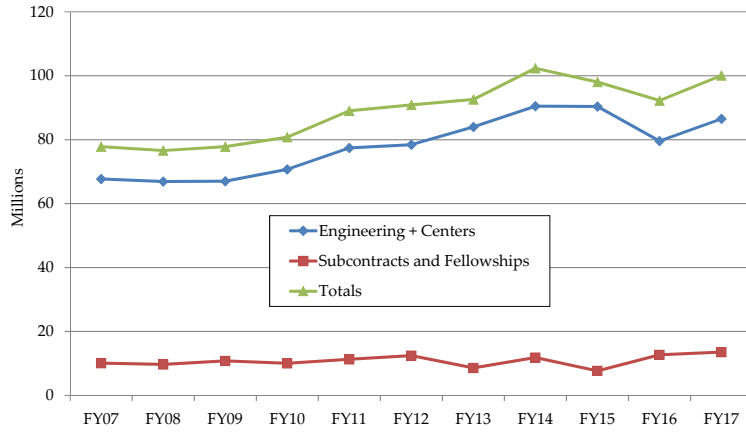
- **Institute for Operations Research Fellow**
  - Shane Henderson (ORIE)
- **Packard Fellowship for Science and Engineering**
  - Ilana Brito (BME)
- **2017 Environmental Division Early Career Award from AIChE**
  - Fengqi You (CBE)



## Research and Graduate Studies Highlights October 2017



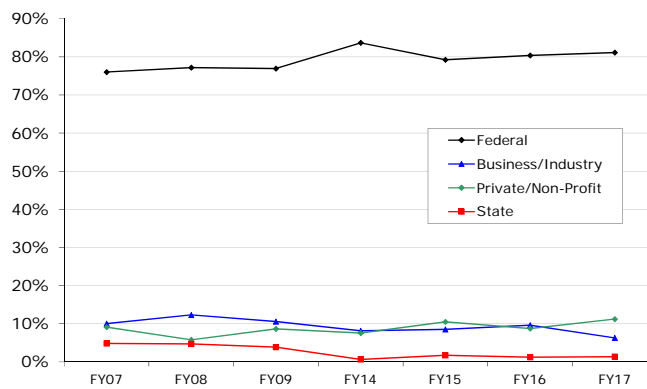
## Research Expenditures



CornellEngineering



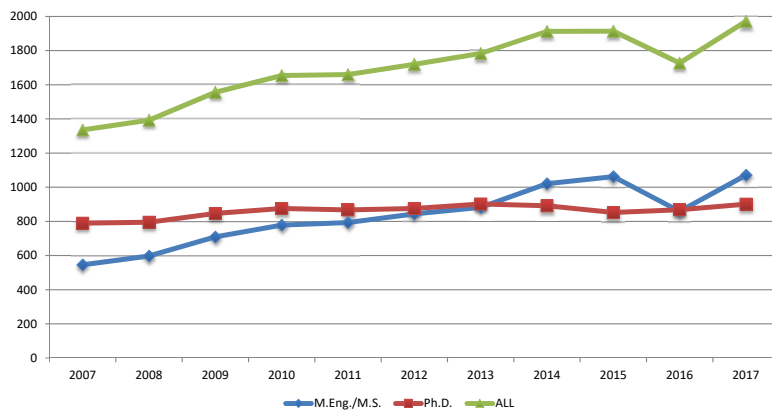
## Percent Distribution of Research Expenditures



CornellEngineering



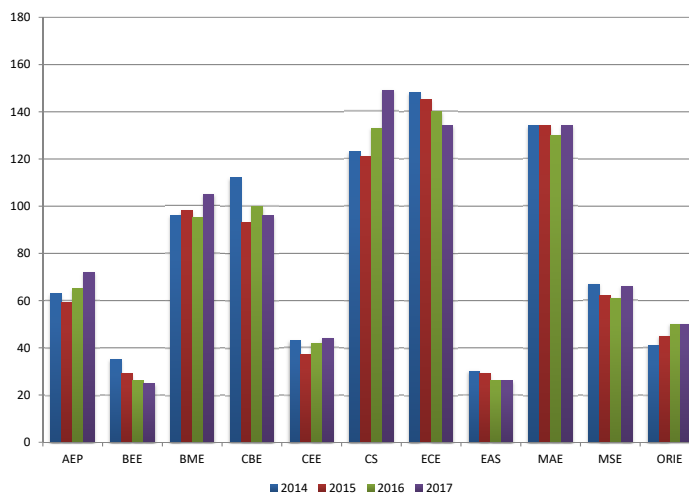
## Graduate Student Enrollment



CornellEngineering



## Ph.D. Enrollment by Field

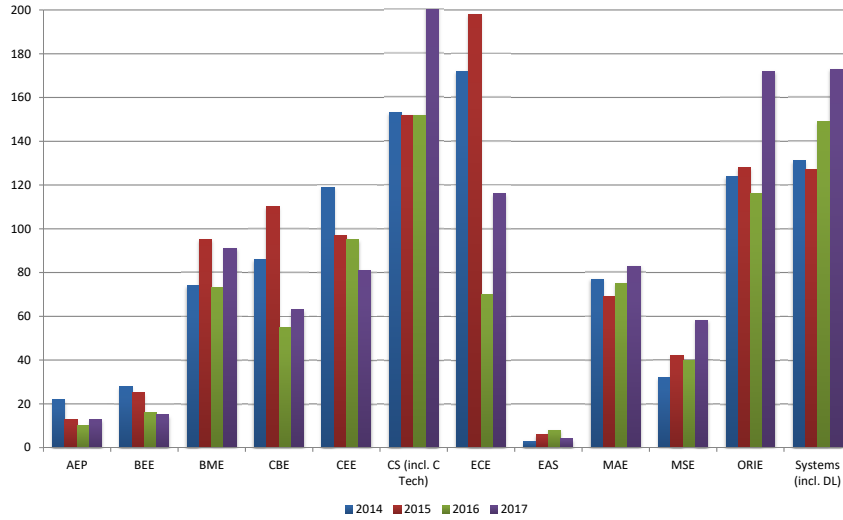


CornellEngineering





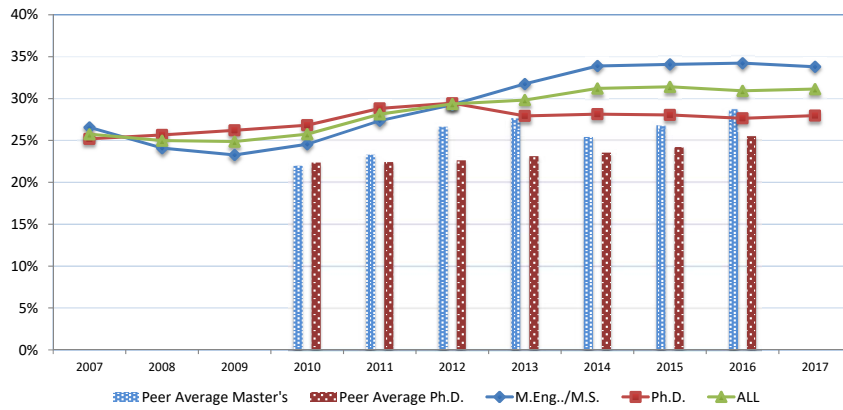
## M.Eng./M.S. Enrollment by Field



CornellEngineering



## Graduate Student Enrollment Women

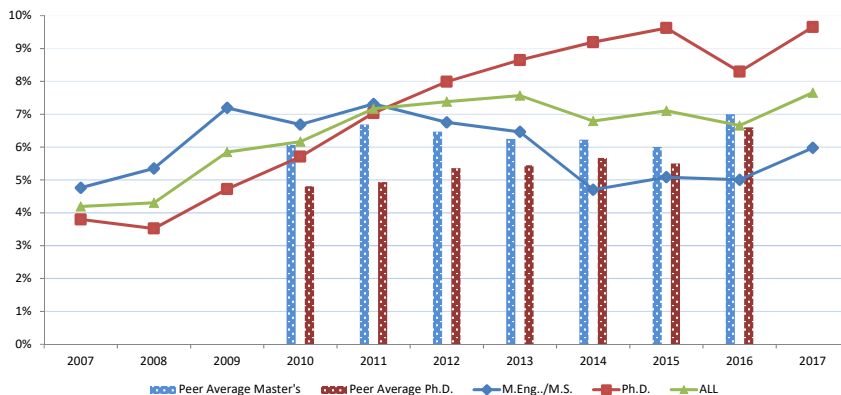


\* Peers: Carnegie, Columbia, Georgia Tech, MIT, Princeton, Purdue, Stanford, UT Austin, Berkeley, UI-Urbana Champaign, Michigan  
 Source for peer data: ASEE data mining tool

CornellEngineering



## Graduate Student Enrollment Under-represented Minorities

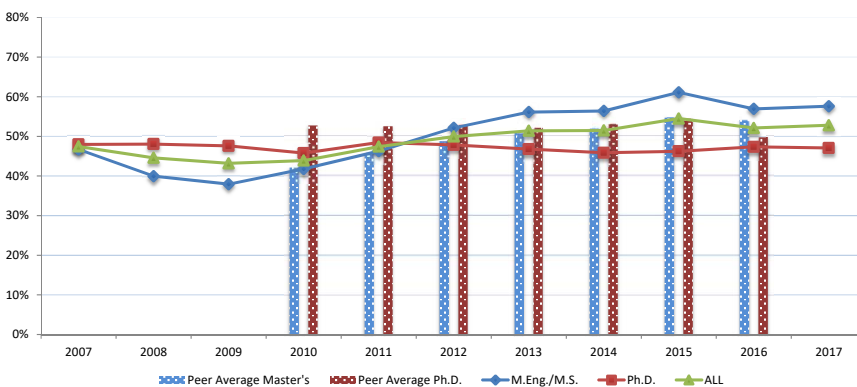


\* Peers: Carnegie, Columbia, Georgia Tech, MIT, Princeton, Purdue, Stanford, UT Austin, Berkeley, UI-Urbana Champaign, Michigan  
 Source for peer data: ASEE data mining tool

**CornellEngineering**



## 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

**CornellEngineering**



## Admissions Highlights October 2017

CornellEngineering

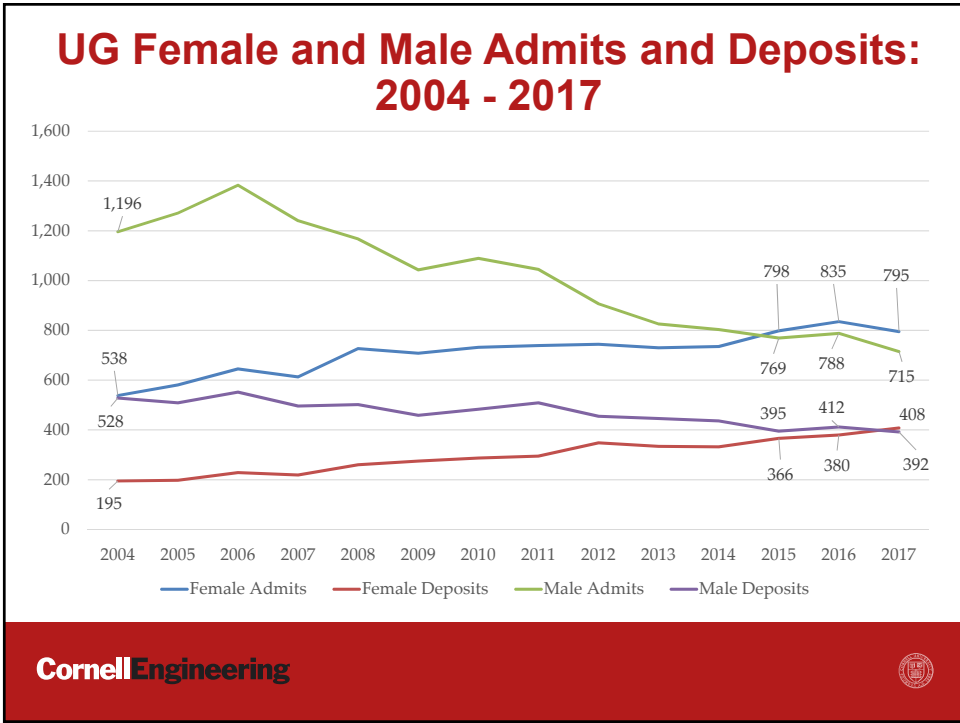
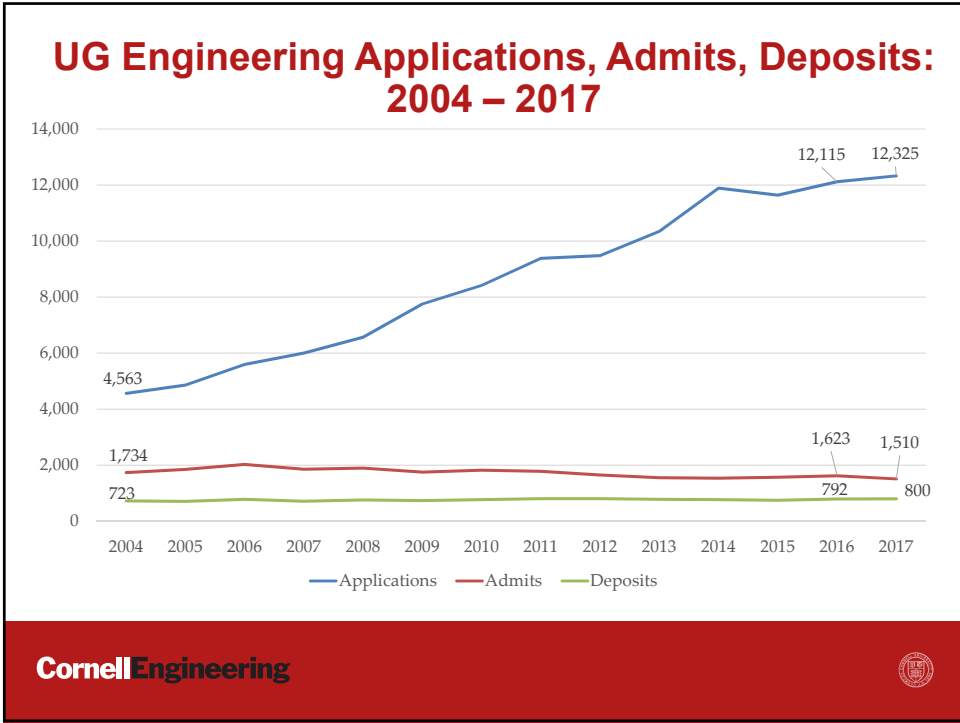


## Admissions

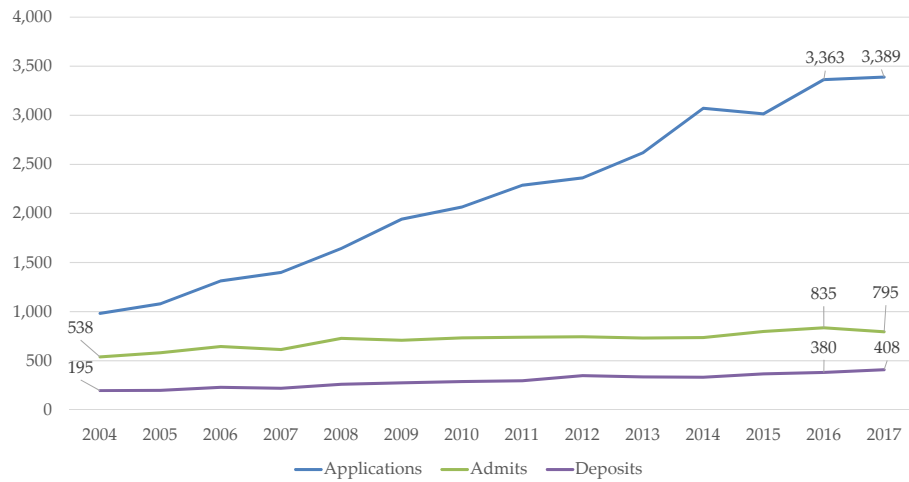
- 12,325 applications for freshman admission
- 1.8% more than last year's application total
- Admit rate was 12.3% (down from 13.4%)
- Admitted 6.5% international (down from 9.8%)
- Legacies: 11.4%

CornellEngineering





## UG Female Applications for Admission: 2004 - 2017



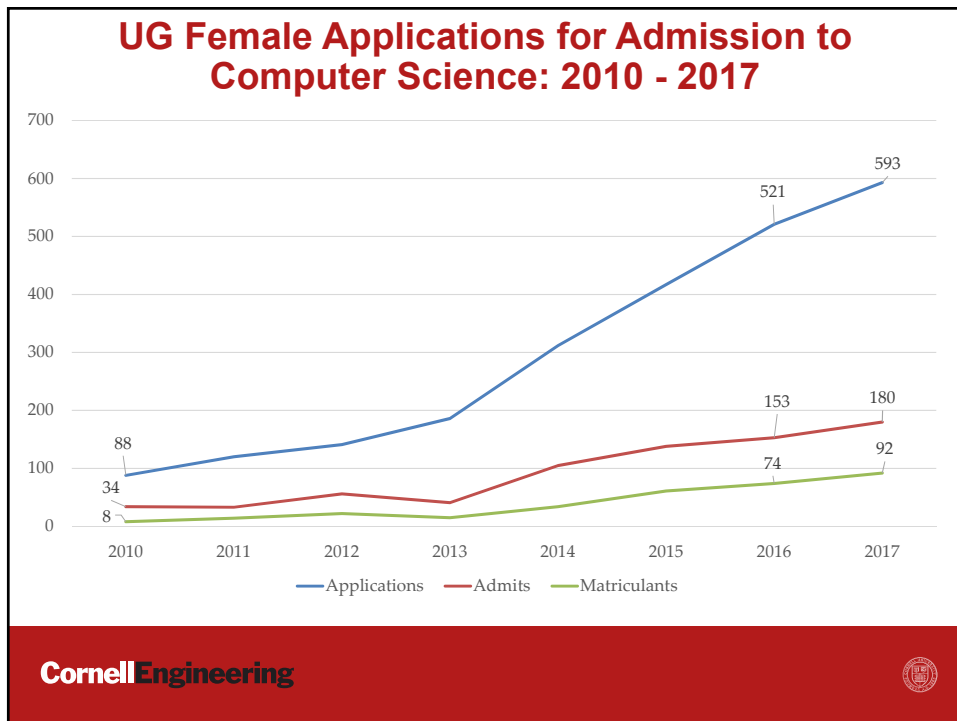
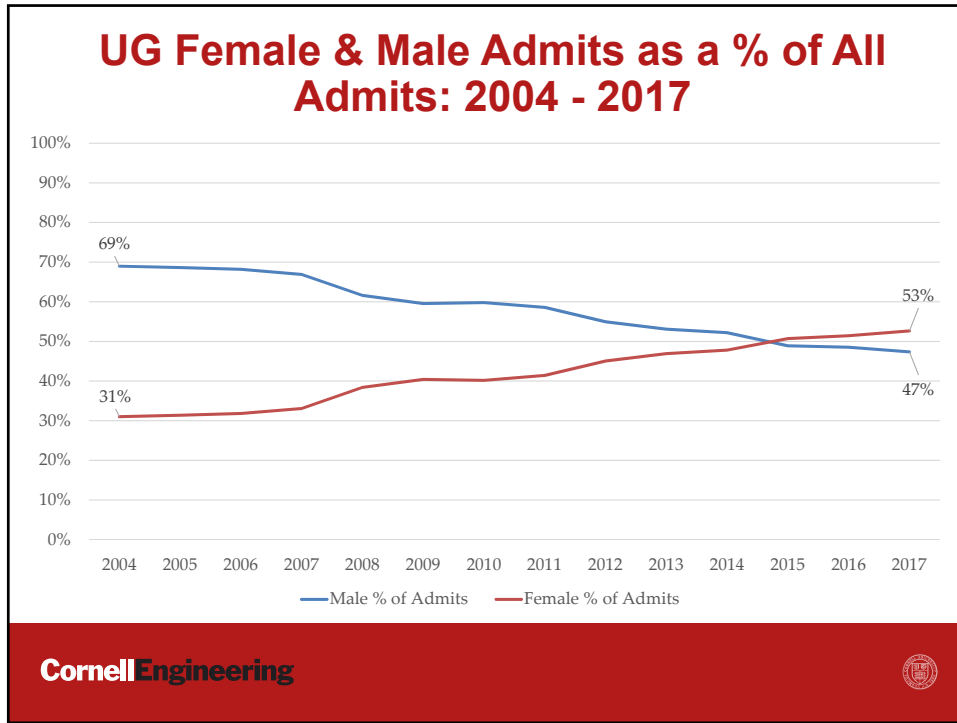
CornellEngineering

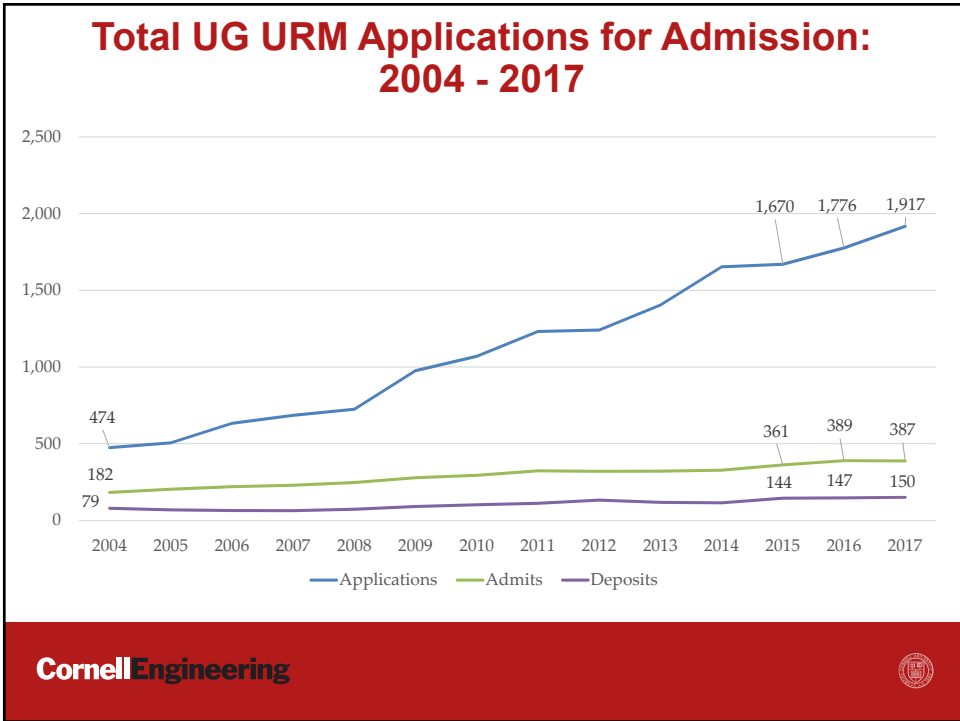
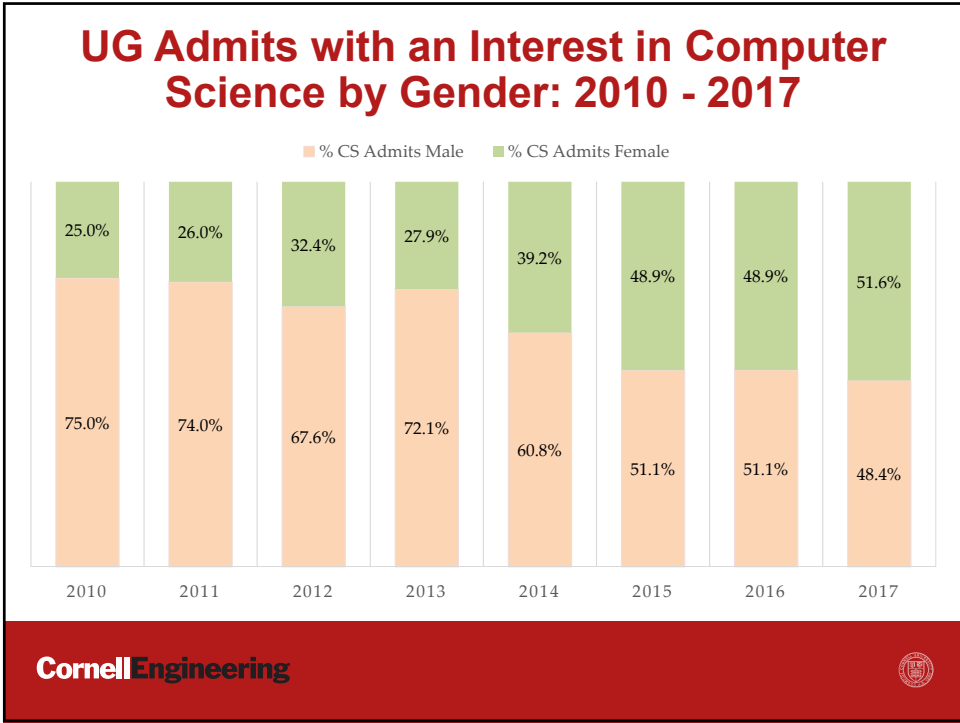


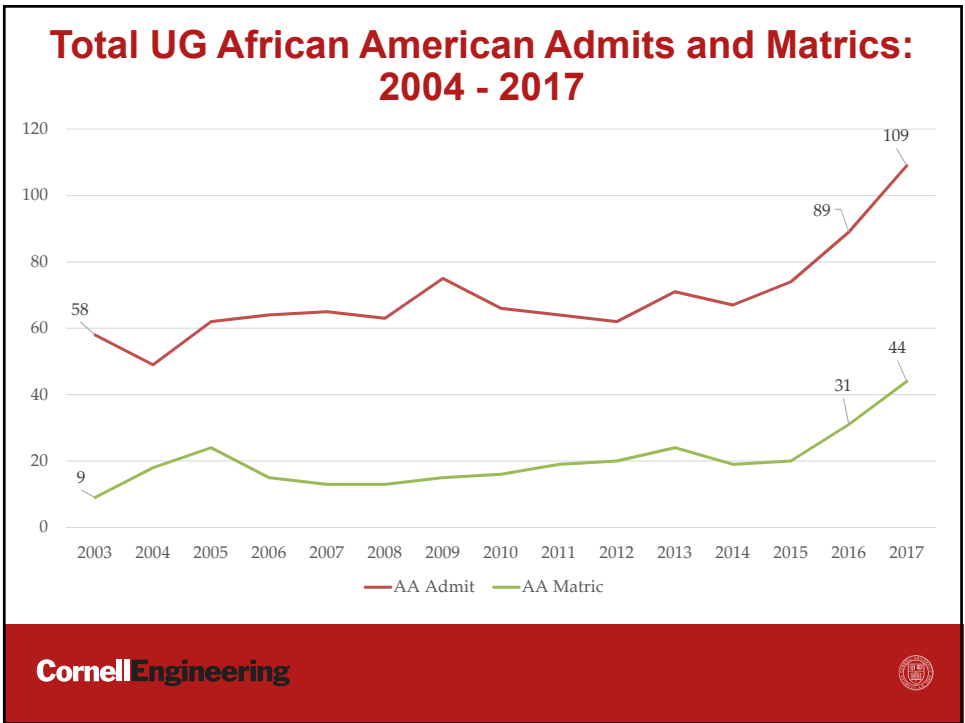
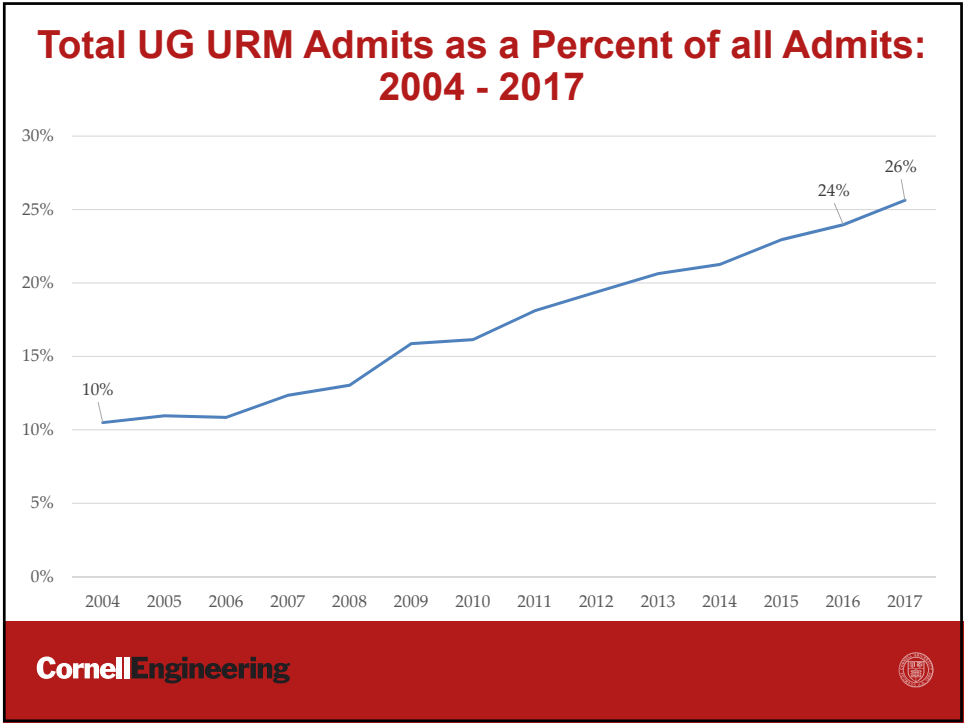
## Diversity Highlights October 2017

CornellEngineering











## Diversity

- **Female Admits and Matriculated students are 51% of Freshman Class**
  - We are well above the national average of 21% (ASEE)
  - The overall undergraduate engineering population is now 47% (a full percentage point higher than MIT!)
- **URM Admits and Matriculated Students**
  - URM population is 18.8% of the Freshman class
  - Of particular note is the African American population, which is 5.5% up from 3.8%. We recruited aggressively, and the gift from the Robert F. Smith provided additional visibility



## Engineering Career Center October 2017



**Mission:** *We inspire and Empower Cornell Engineers to Create Lifelong Career Success*



**CornellEngineering**  
 Career Center  
**CU @ THE INTERSECTION**

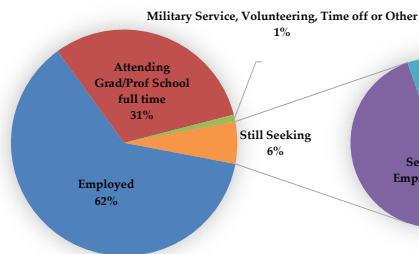
**CornellEngineering**



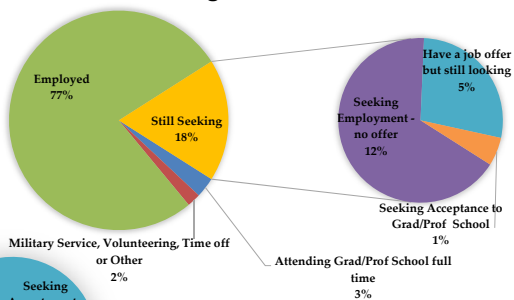
## Engineering Post Graduation Report – 2016

### Undergraduate Outcomes

**94%**  
 of Cornell Engineering Undergraduates indicate having secured a first destination as their primary status.



### M.Eng. Outcomes



**82%**  
 of Cornell Engineering M.Eng. Graduates indicate having secured a first destination as their primary status.

**CornellEngineering**



## Engineering Post Graduation Report – 2016

**Employers Hiring the Most Cornell Engineers**  
(Based on responses from Undergraduates)

Google	14	Intel Corp.	5
Amazon	11	EY (Ernst & Young)	5
Workday	9	Epic Systems	5
Microsoft	9	Deloitte Consulting	5
Goldman Sachs	9	BlackRock	5
Capital One	7		

**Employers Hiring the Most Cornell Engineers**  
(Based on responses from M.Eng. grads)

Oracle Corp.	28	BAE Systems	9
Amazon	23	Regeneron Pharmaceuticals	6
Google	18	IBM	6
Lockheed Martin	15	American Express	6
Microsoft	14	Citigroup	5
Facebook	10		

**Employers Hiring the Most Cornell Engineers**  
(Based on responses from all students (BS, M.Eng, MS, PhD))

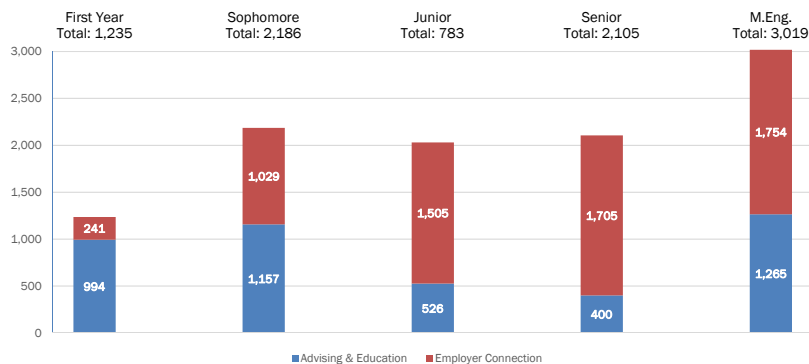
Amazon	35	Facebook	14	Capital One	9	Citigroup	8
Google	32	Workday	13	BAE Systems	9	Uber	7
Oracle Corp.	31	Cornell University	12	American Express	9	SpaceX	7
Microsoft	25	Goldman Sachs	11	Wayfair	8	MITRE Corporation	7
Lockheed Martin	16	EY (Ernst & Young)	11	Regeneron Pharmaceuticals	8	Deloitte	7
Intel Corp.	14	IBM	10	Epic	8	Bloomberg	7

**CornellEngineering**



## Campus Impact and Office Services

Connections with Engineering Career Center (ECC)



**Number of Unique Students Connected with Career Center**

Year Level	Unique Students
First-Year	712
Sophomore	585
Junior	622
Senior	588
M.Eng.	677

**CornellEngineering**

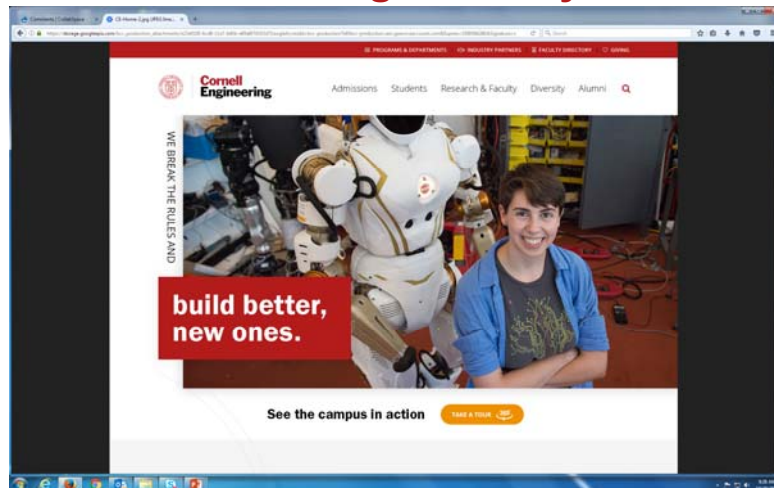


## Brand Update October 2017

CornellEngineering



## Website Redesign, New User Experience, New Content Management System



CornellEngineering



## Website Redesign, New User Experience, New Content Management System

- New engineering.cornell.edu website to be launched December 11.
- Did extensive User Experience testing prior to design. This ensures that the various audiences will be happy with how they can navigate the site and ensures they will be more likely able to find what they are typically looking for.
- Utilizing the new Drupal 8 Content Management System to run the sites.
- New departments sites will be launched in 2018.

CornellEngineering



## Social Media Overview

(July 2016 - June 2017)

The following are the topline results of Cornell Engineering's social media presence during the period of July 2016 through June 2017

### STATS:

- Total Followers: 37,109
- Total New Followers: 4,885
- Total Impressions: 4,283,840\*
- Total Engagements: 240,019
- Average Engagement Rate: 4.59%\*\*

\*Includes impressions from both organic and paid social media (Instagram had paid social media)

\*\*An average engagement of 2.2% is really good in Social Media terms, you may see higher engagement rates, in some cases it depends on which social media platform you use.

*Impressions is the number of times the social media post was viewed. Engagement is when they interacted with it, i.e. shared it, retweeted, reposted, commented,*

CornellEngineering



## Cornell Engineering Total Impact Social Media

(July 2016- June 2017)

Cornell Engineering Social Media (July 2016-June 2017)				
	Twitter	Facebook	LinkedIn*	Instagram
Impressions	1,456,100	1,868,672	492,086	769,932
Engagement	12,384	54,412	965	171,665
New Followers	1,202	1,574	721	1,336
Total Followers	<b>10,912</b>	<b>12,077</b>	<b>1,488</b>	<b>6,491</b>

\* LinkedIn merged two sites last year, therefore numbers are showing the final merged data.

**CornellEngineering**



## New Cornell Engineering M.Eng. LinkedIn

Launched June 28, 2017

KEY STATS YEAR TO DATE\*:

Total Followers: 24  
 Impressions: 2,234  
 Engagements: 10  
 Average Engagement Rate: .45%

TOP POST:

Impressions: 18  
 Engagements: 1  
 Engagement Rate: 5.56%



**CornellEngineering**



## New Cornell Engineering M.Eng. Facebook

Launched June 28, 2017

### KEY STATS YEAR TO DATE:

Total Likes: 59  
 Impressions: 20,530  
 Engagements: 280  
 Engagement Rate: 2.14%  
 Adjusted Engagements: 625  
 Adjusted Engagement Rate: 4.54%

### TOP POST:

Impressions: 428  
 Engagements: 36  
 Engagement Rate: 8.41%



**Cornell**Engineering



## Public Relations Update

October 1, 2013-October 1, 2014  
 7,331 media hits

October 1, 2014-October 1, 2015  
 10,502 media hits

October 1, 2015-Oct 1, 2016  
 11,013 media hits

October 1, 2016-Oct 1, 2017  
**11,183 media hits**

*Quality of media is reflected in highlights (next)*

**Cornell**Engineering



## Public Relations Highlights

### [Treasures of the Earth: Metals](#)

Rob Shepherd, associate professor (MAE), will be featured in the Nov. 9 episode of the [PBS show, Treasure of the Earth](#), examining the special properties of metals.

### [Nasa May Upend Space Travel With Experimental Research](#)

Mason Peck, associate professor (MAE), authors this [Newsweek](#) opinion piece on NASA's EM drive and the value of experimental research

### [Behold A Robot Hand With A Soft Touch](#)

[NPR's All Tech Considered](#) features a robotic hand developed in the lab of Rob Shepherd, assistant professor (MAE), that is able to sense shape and texture.

### [From Alaska to Georgia, Why 6 Scientists Will March on Washington](#)

Chris Schaffer, associate professor (BME), is featured in this piece from the [Chronicle of Higher Education](#) about the March for Science.

### [Even Big Data Starts Small](#)

The EyesOnALZ citizen Science project and research by Chris Schaffer, associate professor (BME) and Nozomi Nishimura, assistant professor (BME), was featured on [PBS stations](#) across the country as part of the multi-episode documentary The Crowd & The Cloud. The project is featured at the 28:30 mark of Episode 1.

**CornellEngineering**



## Public Relations Highlights

### [Running delivery trucks on trolley wires isn't as crazy as it sounds](#)

Max Zhang, associate professor (MAE), is quoted in this [Wired](#) story about reducing carbon emissions via electric trucks.

### [How Your Food Waste Could Eventually Power Your Home](#)

Research into converting food waste into energy, led by Roy Posmanik, postdoctoral researcher (CBE), is featured by [Time](#). An accompanying video also features Jeff Tester, professor (CBE).

### ['Smishing' Is Internet Scammers' New Favorite Trick](#)

Steve Wicker, professor (ECE), is quoted in this [Fortune](#) piece about avoiding texting scams.

### [Building Block for 'Vinyl Life' Found on Saturn's Moon Titan](#)

A molecule first theorized by a team led by Paulette Clancy, the Samuel W. and M. Diane Bodman Professor (CBE), has been discovered on Titan and could be the basis for a new type of life, reports [National Geographic](#).

### [Bitcoin divides to rule](#)

Emin Gun Sirer, associate professor (CS), is quoted in this [Economist](#) piece about Bitcoin forking into a second cryptocurrency.

### [It sounds futuristic, but it's not sci-fi: Human organs-on-a-chip](#)

Michael Shuler, the Samuel B. Eckert Professor of Engineering (BME), is credited with coining the term "animal-on-a-chip" in this [CNBC](#) feature about organs-on-a-chip.

**CornellEngineering**





## Public Relations Highlights

[The revolutionary invention that provides drinking water to thousands of people in Honduras](#)  
[BBC Mundo](#) features the AguaClara program and quotes Monroe Weber-Shirk, senior lecturer (CEE).

[World's Smallest Spacecraft Is Prelude to Enormous Voyage](#)  
 This [NBC News](#) article features the Sprite spacecrafts developed in the lab of Mason Peck, associate professor (MAE).

[New York should change how electricity is billed](#)  
 Todd Cowen, professor (CEE), authors this [Albany Times-Union](#) op-ed arguing for New York to consider time-of-use rates for electricity.

[Deep-ultraviolet gallium nitride quantum dots in aluminium nitride](#)  
[Semiconductor Today](#) reports that professors Debdeep Jenna and Grace Xing (ECE, MSE) have achieved more than two times the highest reported value of internal quantum efficiency for AlGaIn QW-based heterostructures at comparable short deep-UV wavelengths.

[Cornell tests 'smart,' resilient underground infrastructure](#)  
 Cornell's Geotechnical Lifelines Large-Scale Testing Facility was featured during the September 28, 2017 episode of Discovery Channel Canada's DailyPlanet. [Click here to view the video](#). The segment begins at 4:08.

**CornellEngineering**



## Brand Update: Questions?

**CollabSpace:** Please see provided video.

**Website:** Questions on User Experience and Information Architecture?

### Social Media

Are you engaged on Social Media?

Are you following us?

What do you like?

What do you think we should add?

### Public Relations

Have you noticed the increased in media relations?

What other media would you like to see Cornell Engineering featured?

*Email me questions: [dsm263@cornell.edu](mailto:dsm263@cornell.edu)*

**CornellEngineering**



50

## College Facilities Update October 2017



**Cornell**Engineering



## Facilities: Infrastructure that Supports the Strategic Vision

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

**Cornell**Engineering



## Master Plan Status

- **BME Expansion for New Undergraduate Program**
  - University plan using existing spaces and additions
  - Focusing on Weill Hall renovation and Comstock Hall addition and renovation
  - Weill department hub/labs construction nearly completed
  - Comstock Hall design initiated
- **Upton Hall Full Renovation**
  - Construction complete and building fully occupied
  - Floors B-2 : team space, teaching space, Emerson Lab
- **Research, Infrastructure, and Public Space Projects**
  - PARADIM in Duffield Hall – construction nearly complete
  - Research Spaces (Robotics, BME, Civil) renovated for new faculty
- **Facility Master Plan Update Completed**
  - Focus: replace Hollister Hall N, renovate Hollister S
  - Renovate Olin Hall to create CBE labs
  - Renovate Rhodes Hall first floor

CornellEngineering



## Upton Hall Full Renovation Complete

- **Teaching labs, tech-enhanced classroom, team space**



CornellEngineering



## Research and Public Space Projects

- **Duffield –PARADIM** Research Center final phase of construction



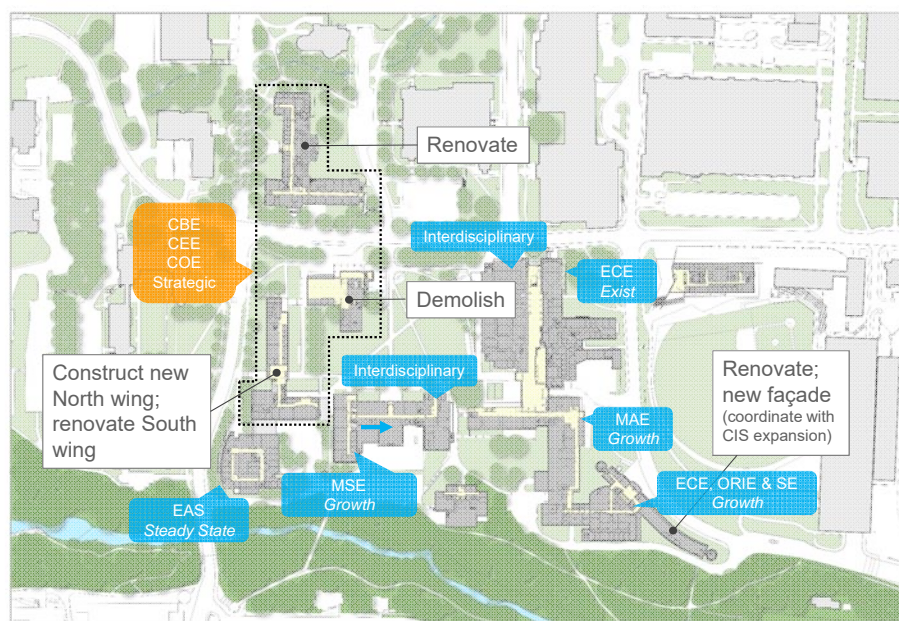
- **Research labs for new faculty**



**Cornell**Engineering



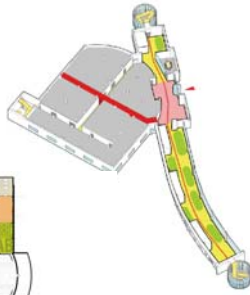
## Master Plan Update – Hollister, Olin, Rhodes



## Master Plan - Olin, Rhodes, New Building expands on Hollister



Rhodes 1<sup>st</sup> Floor Revitalization



New Building Replaces Hollister North Wing

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



Olin High Density Research Labs

**Cornell**Engineering



**Cornell**Engineering



## Cornell Tech Dedication September 13, 2017

CornellEngineering



## Cornell Tech Dedication: September 13, 2017



Lance Collins, the Joseph Silbert Dean of the College of Engineering, Cornell President Martha E. Pollack and Dan Huttenlocher, the Jack and Rilla Neafsey Dean of Cornell Tech, at the dedication ceremony.

CornellEngineering



## Cornell Tech Dedication: September 13, 2017



Former Mayor Michael Bloomberg, Mayor de Blasio, Governor Cuomo, and other elected officials and university representatives gathered for the campus' dedication ceremony



**CornellEngineering**



## College of Engineering Fiscal Year '18 Giving Update

**October 2017**

**CornellEngineering**



## Giving Totals for Fiscal Year '18

Fiscal Year 2018 NG&C Goal	\$ 50,000,000
Fiscal Year 2018 NG&C Total	\$ 4,810,000
Fiscal Year 2018 Annual Fund Goal	\$ 2,250,000
Fiscal Year 2018 Annual Fund Total	\$ 296,337
ECC Member Participation	11.11%

*As of 10/20/17: 6 donors out of 54 active ECC members*

**CornellEngineering**



# Thank you!

**Lance R. Collins**  
Dean of Engineering

October 26-27, 2017

**CornellEngineering**

