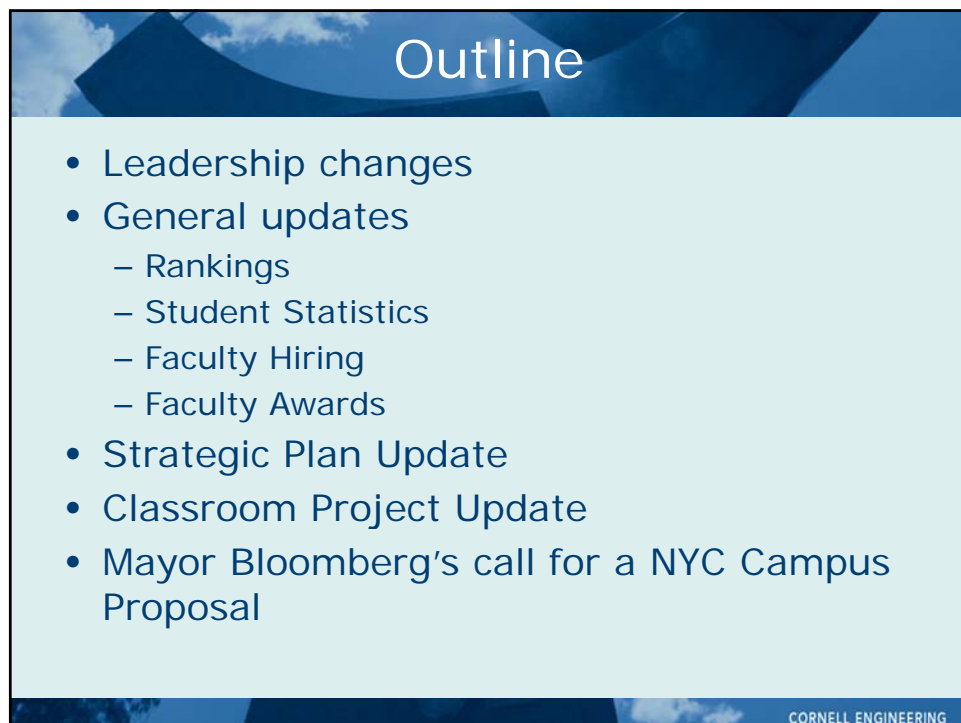



**ENG**  
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# College of Engineering Update

March 31, 2011  
Lance R. Collins  
Joseph Silbert Dean of Engineering



## Outline

- Leadership changes
- General updates
  - Rankings
  - Student Statistics
  - Faculty Hiring
  - Faculty Awards
- Strategic Plan Update
- Classroom Project Update
- Mayor Bloomberg's call for a NYC Campus Proposal

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## Associate Dean for Undergraduate Programs



Charlie Seyler  
Professor, ECE

Degrees received in Plasma Physics:  
BA U. South Florida 1970  
MA U. South Florida 1972  
PhD U. Iowa 1975  
Postdoc at Courant Institute  
Staff Scientist at Los Alamos National Lab

- Joined Cornell faculty in 1981

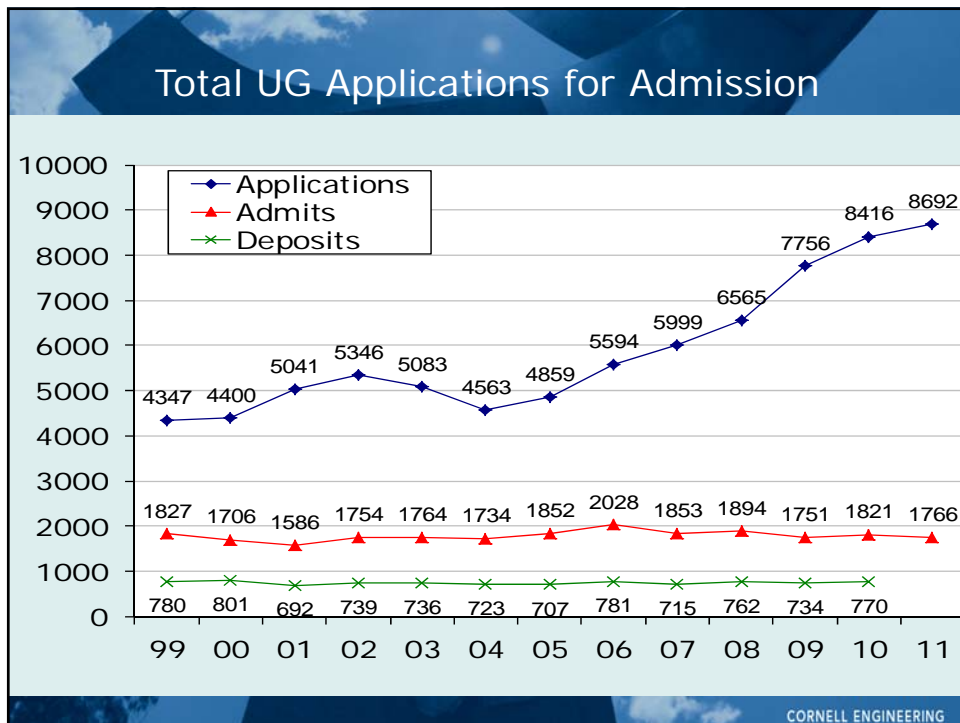
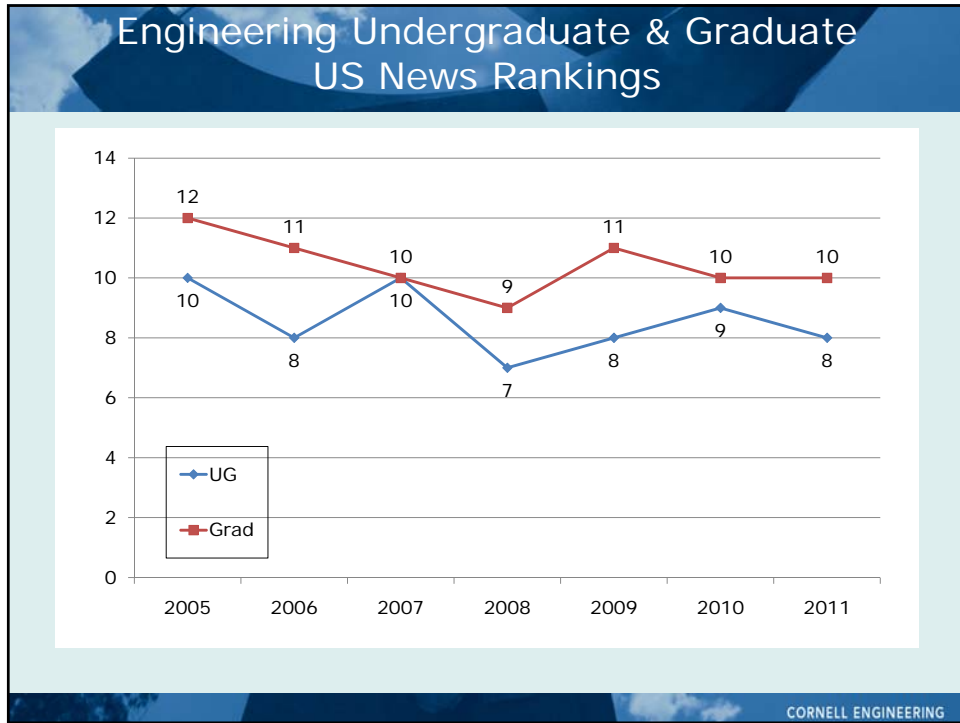
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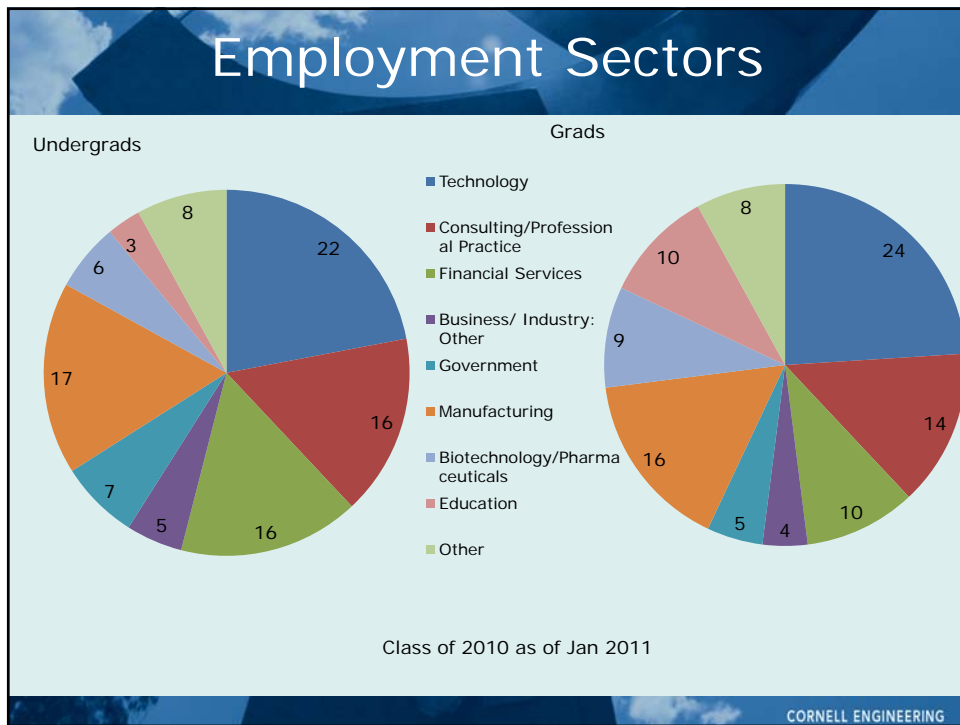
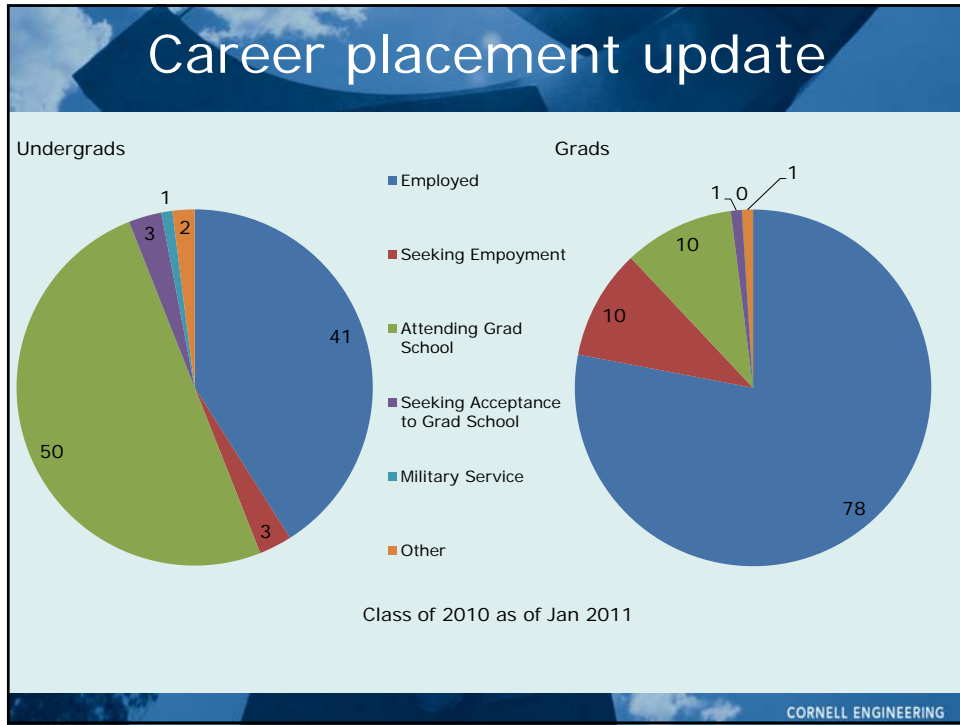
## Director, Marketing and Communications



- Dawn McWilliams, Director, Marketing and Communications
- Joined Cornell March 2011
- Degrees received
  - Rochester Institute of Technology BFA '85, MBA '00
- Previously at the Simon Graduate School of Business, University of Rochester
- Focus – branding and increasing awareness through traditional and digital media

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## New Hire and Current Searches



Ricardo Daziano  
Assistant Professor, CEE

### Faculty Searches Underway

Department	Searches	Status
AEP	2	1 accept, 1 offer
BEE	1	1 offer
BME	1 + 1 (?)	1 offer
CBE	0 + 1	
CEE	1 + 1	
CS	3	
EAS	0 + 1	
ECE	3	1 offer
MAE	2	
MSE	1 + 1	1 offer
ORIE	2	1 accept, 1 offer

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## National Academy of Engineering



Fred Schneider  
Samuel B. Eckert Professor  
of Computer Science  
Elected NAE 2011

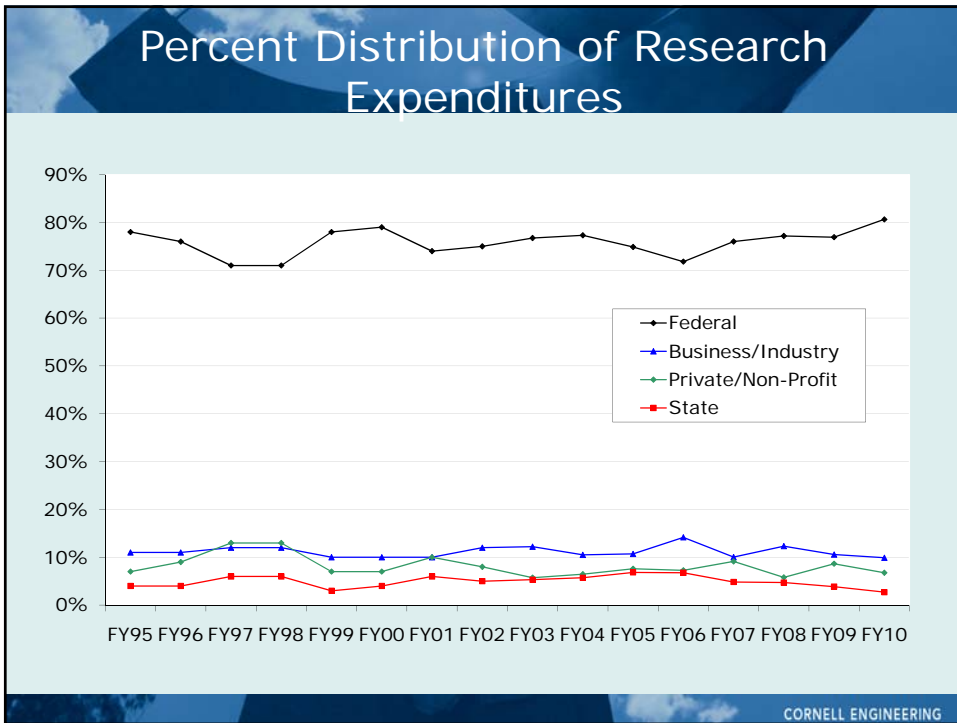
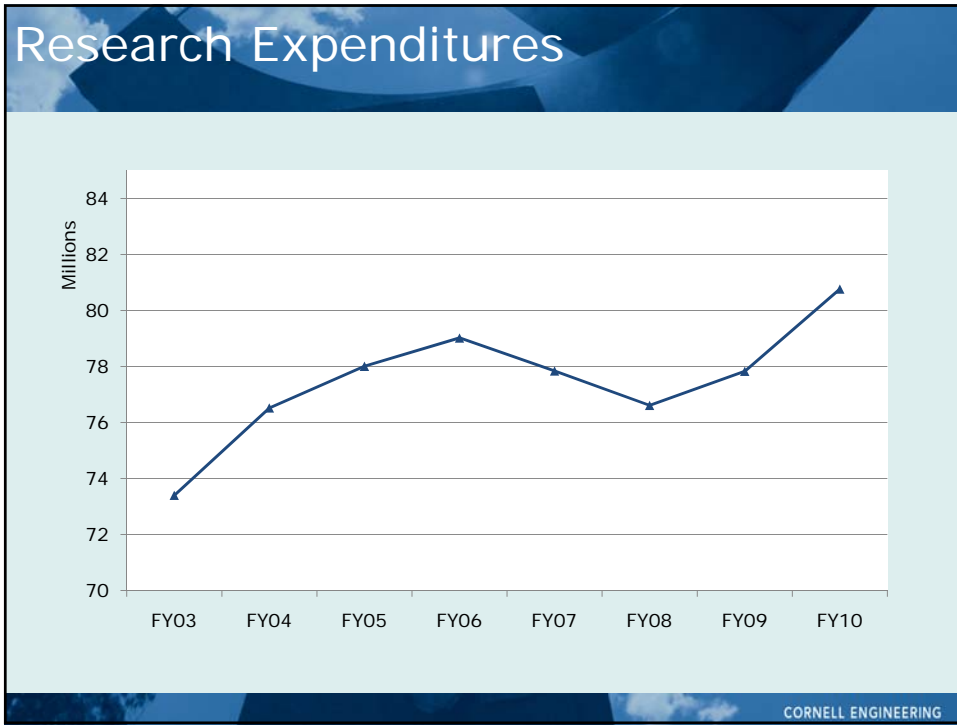
### Degrees received:

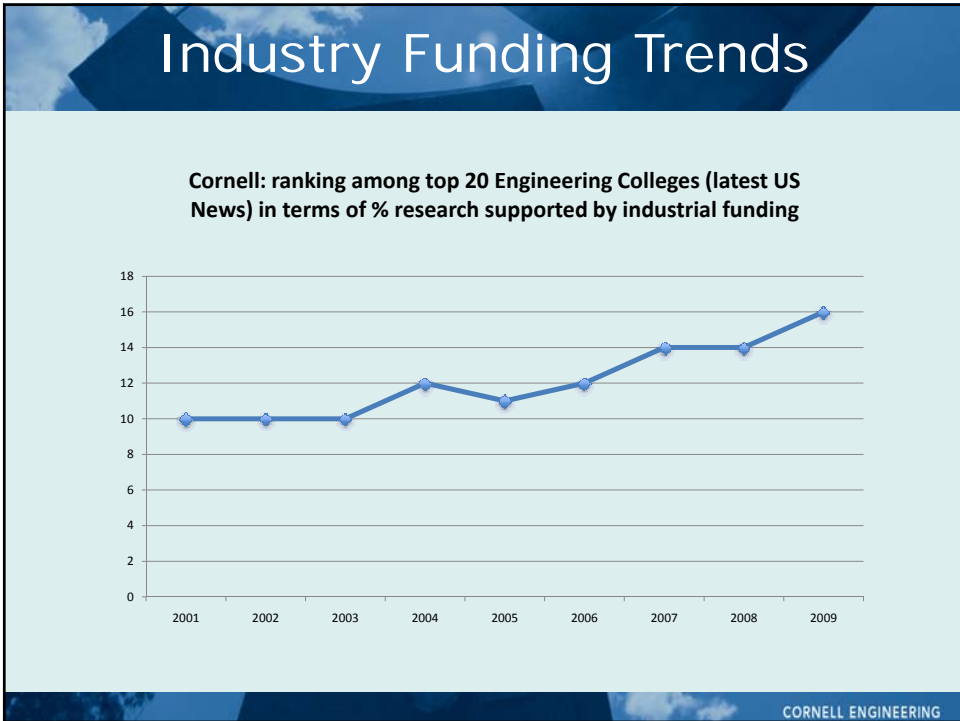
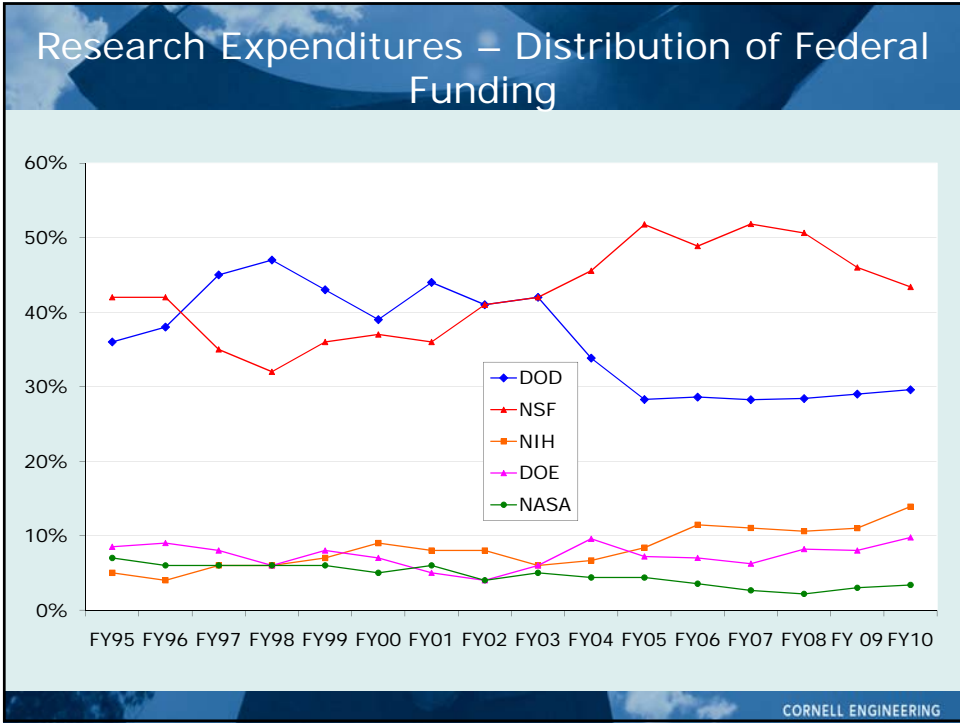
B.S. Computer Science & Electrical  
Engineering, Cornell University (1975)

M.S. (1977) and Ph.D. (1978)  
Computer Science, State University of  
New York at Stony Brook

Joined Cornell faculty in 1978

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## Classroom Upgrade Project

- Eng Teaching Excellence Institute led project (Kathy Dimiduk)
- Enhance AV functionality
  - Students: see and hear throughout room
  - Faculty: ease of use, reliability
- Enable faculty to use new teaching strategies
  - Encourage implementation of new approaches
  - Increase creativity and innovation in teaching
- ECC raised \$287,700 of \$300,000 goal

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## Classroom Improvements

- 15 rooms nearly completed impacting ~8,000 student contacts
- Highlights
  - Widescreen projector -split image capability
  - Document cameras
  - Smart Tablets/WACOMS
  - Clicker receivers installed
  - User friendly/smarter controls
  - Dual wireless microphones
  - New larger screens

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## Work in Progress

- Design of B14 Hollister
  - New and rearranged screens
  - New projectors
  - Improved controls
  - Smart tablet or document camera
- Medium and small rooms
  - Smart Tablets/WACOM
  - Clicker receivers
  - More black/whiteboards
  - Moveable seating
  - Wireless microphones

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## Faculty Responses


- Susan Daniel, CBE, Olin 255
  - “Encourages faculty to integrate technology into their teaching to better engage students and enhance learning”
- Mike Thompson, MSE, Kimball B11
  - “This room is perfect for teaching now. I really want to use the side screen and the tablet.”
- Peter Doerschuk, ECE, Phillips 101
  - “A document camera has been needed for a long time. With all the new technology, this room will be a faculty recruiting asset now.”

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## Classroom Upgrade Project

Faculty on Olin 255: "It just works now – mics, sound, bright image – boards + screen are really nice"



 = Original image size

- New screen
- New projector
- Clicker receiver
- Dual wireless mics
- Improved sound
- Boards + larger screen

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## 2010 College Plan

**College of Engineering Aspiration:**

*The College of Engineering at Cornell University will be widely recognized as a top-five engineering college in undergraduate and graduate studies*

**Enabling Goals:**

1. To recruit, retain and enable a diverse community of exceptional faculty, students and staff
2. To educate undergraduate and graduate students to become global leaders
3. To be world leaders in important areas of research
  - a) to sustain and expand our leadership role in: advanced materials; information, computation, communication and networks; and nanoscience
  - b) to be the premier research university in the emerging areas of energy and the environment; and systems biology and biomedical engineering
4. To increase our interactions with industry; and create a fertile environment for entrepreneurial activities for faculty and students

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## Department Plans

- Applied & Engineering Physics
- **Biological & Environmental Engineering**
- Biomedical Engineering
- Civil & Environmental Engineering
- Chemical & Biomolecular Engineering
- **Computer Science**
- Earth & Atmospheric Sciences
- Electrical & Computer Engineering
- Mechanical & Aerospace Engineering
- Materials Science & Engineering
- Operations Research & Information Engineering

Note departments in red are shared with other units

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## Cross-cutting Committees



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## Strategic Planning

- Department and Cross-cutting plans developed
- Retreat 1 (Feb 5): research themes
- Retreat 2 (Mar 18): education themes
- Pushing inter-team planning
- Close to draft plans in all areas
- Process:
  - College draft early summer
  - Final plan(s) end of year

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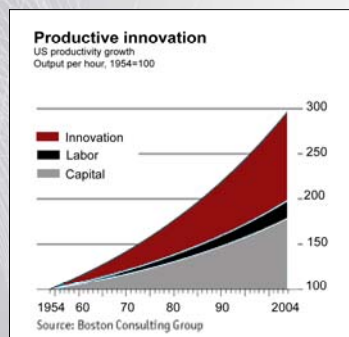
## **GROWING APPLIED SCIENCES**

*A Game Changer for NYC*

February 9, 2011

## In the 21<sup>st</sup> Century innovation will be key to unlocking economic growth...

Growth in productivity is increasingly driven by innovation...



**...and innovation is strongly linked with academic research.**

*"US employment and income growth over the next decade will depend critically on educational attainment in STEM fields."*

- Goldman Sachs Global Markets Institute, June 2010



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## These initiatives aside, the 2008 recession prompted us to redouble efforts to find economic 'Game Changers'

### Game Changers Exercise

#### Format:

- a series of **round-tables, workshops, and panels** in 2009-2010.

#### Participants:

- **325+ CEOs** of large, medium and small companies.
- **25+ community groups** representing a broad spectrum of views.
- **12+ University Deans/Presidents** of NYC universities.

#### Inputs:

- **Sector analyses** of our leading industries and growth sectors.
- **Benchmarks** with global competitor cities.

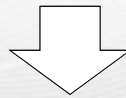
#### Outputs sought:

- A set of initiatives which were **actionable, bold** and which held the potential for **long-term economic impact**.

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From the 'Game Changers' exercise we consistently heard that growing the scale of NYC's applied sciences activity is critical to spurring innovation

- Building our technology capacity is critical to future economic growth.
- Strong research institutions help create knowledge jobs needed for this growth.
- NYC is relatively underweight in applied sciences, despite excellent existing institutions.

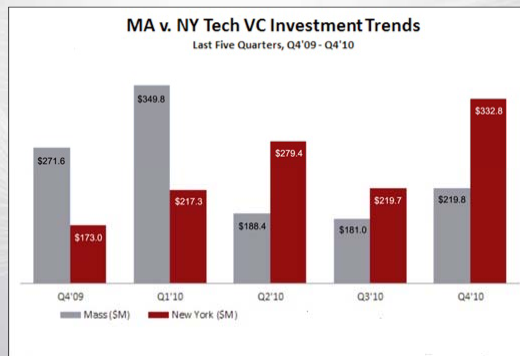


A dramatic boost in the scale of applied sciences in NYC...  
...has significant potential to reshape the economy.

**And NYC also has a strong and rapidly expanding financial ecosystem to fund startups and spin-outs**

A strong ecosystem for startup investment

- **\$1.1 billion** invested by VC firms in 2010
- **#2 in VC funding** for internet & tech startups in the US, second only to Silicon Valley.



Source: CB Insights.com, 2010 data

The RFEI is seeking proposals covering any field of applied sciences research – emphasis is on 'best in class'

### Historic Cornell Strengths

#### SCOPE OF ACTIVITY

*Where possible research should:*

- be **considered cutting-edge**
- offer a **realistic route to commercialization**
- address **important, real-world problems**
- foster links with **NYC industry clusters** (existing and emerging)
- exploit **interdisciplinary opportunities**

#### Fields of particular interest:

- engineering
- computer science
- materials science
- nanotechnologies
- environmental science

#### Respondents are encouraged to:

- set out their vision for a new facility to be based in NYC
- propose research that best fits their needs and capabilities

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The RFEI seeks responses from organizations which make impact locally, nationally, and internationally

#### PARTNER CHARACTERISTICS

*Ideal partners will:*

- be internationally **recognized as leaders** in applied sciences
- possess impressive **financial and administrative resources**
- have **experience** of significant campus **expansions**
- demonstrate the **commitment necessary to succeed**
- articulate a **compelling vision**

#### Collaborations :

- are actively encouraged
- may include industry
- should be formalized but need not be contractual at this stage

#### Respondents are encouraged to:

- describe how any proposed partnerships would function
- seek partners with complementary skills and resources

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### The Four City-Controlled Locations

**Governors Island**

**Goldwater Campus, Roosevelt Island**

**Farm Colony, Staten Island**

**Naval Hospital Campus**

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## Respondents

- Åbo Akadmi University, Finland
- Amity University, India
- Carnegie Mellon University with Steiner Studios
- Cornell University
- Columbia University and the City University of New York
- The Cooper Union
- École Polytechnique Fédérale de Lausanne, Switzerland
- Indian Institute of Technology Bombay, India
- Korea Advanced Institute of Science and Technology, Korea
- New York University, Carnegie Mellon, the City University of New York, the University of Toronto, and IBM
- The New York Genome Center,

- with Albert Einstein College of Medicine, Columbia University Medical Center, Memorial Sloan Kettering Cancer Center, Mount Sinai School of Medicine, New York University, Rockefeller University, and the Jackson Laboratory
- Purdue University
- Rensselaer Polytechnic Institute
- Stanford University
- The Stevens Institute of Technology
- Technion-Israel Institute of Technology, Israel
- The University of Chicago
- The University of Warwick, United Kingdom

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## CornellNYC Tech Campus

Research “Hubs” Focus on 4 themes:

- Mobile Social Interaction
- Technologies for a Healthier Life
- Intelligent Trustworthy Computing
- Smart Technologies for the Build Environment

## Preliminary Ideas

- Goal: Create a “tech ecosystem” in NYC; generate numerous start-ups and create jobs
- Campus organized around four research themes (“hubs”)
- Grad program (MEng and PhD)
- Partners?
  - Universities (domestic vs international)
  - Corporate