

## College Strategic 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; and complex systems, network science and computation
  - b) to be the premier research university in the emerging areas of bioengineering; and energy and the environment
4. To increase our interactions with industry and create a fertile environment for entrepreneurial activities for faculty and students

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## Rigorous Core Education

- Strong A&S builds foundation in Math, Sciences, English, etc.
- Virtually all departments and schools in the college ranked in the top 10
- Focus of curricula on fundamental “engineering science”
- However, the land grant in our DNA provides students with opportunities for hands-on training and design
- Engineering Teaching Excellence Institute







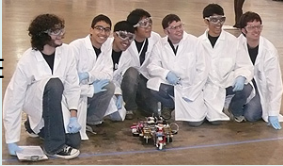
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## Ample opportunities to expand your horizons

- Project teams
- Business minor (Dyson School)
- Kessler Fellows Program
- Kinzelberg Entrepreneurship in Engineering
- Engineering Learning Initiatives
- New Leadership Program

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## Student Teams Success

<p style="text-align: center;"><b>Underwater Autonomous Vehicle</b></p>  <p style="text-align: center;">2009, 2010, 2012 Champs</p>	<p style="text-align: center;"><b>Formula SAE</b></p>  <p style="text-align: center;">27 years-9 world championships</p>	<p style="text-align: center;"><b>CU-Satellite</b></p>  <p style="text-align: center;">2007 Champs- 2013 launch on SpaceX Falcon 9</p>
<p style="text-align: center;"><b>Solar Decathlon</b></p>  <p style="text-align: center;">7th place finish</p>	<p style="text-align: center;"><b>Aqua Clara</b></p>  <p style="text-align: center;">Intel Environment Tech Award 2011</p>	<p style="text-align: center;">Baja SAE – 2010, 2012 Champs</p> 
<p style="text-align: center;"><b>ChemE Car - CBE</b></p> <p style="text-align: center;">2008, 2010 Champs</p> 		

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## Kessler Fellows Program

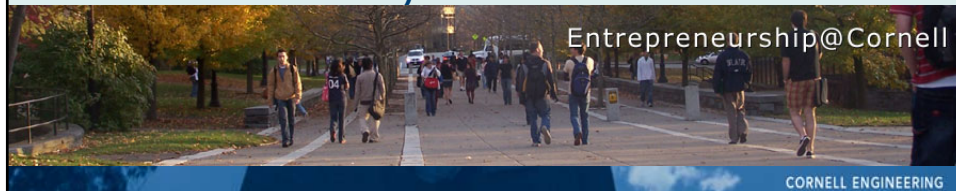
- One year program
- Spring course: "Essentials of Entrepreneurism"
- Summer internship (\$1k/wk)
- Fall Symposium Series (students report on experiences)



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## Entrepreneurship@Cornell

- Dozens of courses across campus
- Pre-startup skills (speaker series)
- Business startup
  - Planning
  - Venture funds
- Management/Execution
- Business Analytics



## How do we improve?

- Technology provides opportunities
- Dramatic improvement in our understanding of pedagogy (data driven, quantitative)
- Growing awareness of the intrinsic value of the engineering education (transferable skills)

## Engineering Teaching Excellence Institute

- Faculty are hired based on their research promise – teaching skills are very difficult to evaluate
- Content experts – delivery novices
- ETEI provides support on
  - Course design, syllabus, exams, etc.
  - Lecture delivery, board work
  - Innovative use of technology (clickers)
- Focus on young faculty (faculty recruitment tool)

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## Engineering Learning Initiatives

- Academic Excellence Workshops
  - Advanced problem solving in Math, Chem, CS
  - Peer facilitated problem solving
- Undergraduate Research
  - Small grants (\$3k)
- Tutoring

Kathy Dimiduk, Director of ETEI  
Linda Tompkins, Associate Director ELI

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## Massive Open Online Courses

- Disruptive technology?
- Exporting the top-tier education to the world?
- What is the role of the brick and mortar university in the future?
- What is the business model?

Eva Tardos, Senior Associate Dean of CIS

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## New Leadership Program

- Systematic Leadership Training
  - Creating a vision
  - Art of persuasion
  - Building a team and making it work
- Inaugural year
  - Modules for Freshman Advising Classes
  - Project Team Leadership
- Differentiating

Erica Dawson, Director of Leadership Program

Werner Zorman, Associate Director of Leadership Program

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## Cost/Benefit Analysis

- Unsustainable growth curve of tuition
  - Steady decline in state funding
  - Cost of state-of-the-art facilities
- How has Cornell responded?
  - Increased financial aid (still need blind)
  - Tightened belt
- Are we worth it? Yes!
  - Problem solving/critical thinking skills
  - Entrepreneurial/opportunistic
  - Connected