Six Departments with 10 undergraduate and 18 graduate programs

- Bioengineering
- Chemical Engineering
- Civil and Materials Engineering
- Computer Science
- Electrical and Computer Engineering
- Mechanical and Industrial Engineering

Faculty

- 129 Faculty in six departments
  - 57 Professors, 31 Assoc. Prof, 27 Asst. Prof,
  - 7 Lecturers, 7 Active Emeritus
Students
  
  ❖ 2311 B.S. students enrolled in Fall 2012
    14.80% women, 6.58% African American, 19.08% Hispanic
  ❖ 633 Masters students in Fall 2012
  ❖ 445 Ph.D. students in Fall 2012

Research
  
  ❖ Research expenditures: $24.5 million for FY2012
  ❖ Publications: 58 books and book chapters, 362 journal papers and 333 conference papers
  ❖ Patents: 31 disclosures, 36 filed, 5 issued

Alumni
  
  ❖ 22,000 alumni
Outstanding Faculty

- 53 Fellows of National/International Societies
- 26 National Science Foundation Career/PYI awards
- 2 Members of the National Academy of Engineering
Selected Research Grants/Projects

October 2011 – October 2012

153 active grants totaling $66,590,383
Dave Eddington (Co-PI)
Dr. Jose Oberholzer (COM PI)
Dr. Yong Wang (COM Co-PI)
mTOR and HIF-1 Signaling of Human Endothelial and Pancreatic Islet Cells in Response to Hypoxia and the Role of Sirolimus

2012 Pfizer ARTS Competition
$220,000  (09/01/12 - 08/31/14)
Dave Eddington (Co-PI)
Dr. Jose Oberholzer (COM PI)
A Novel Ebta Cell Specific Microfluidic Perfusion and Imaging Device for Islet Potency Testing

NIH R01
$1,657,049
(09/01/11- 08/31/16)
Michael Cho
Investigation of Microcavitation-Induced Effects Using in Vitro Models for Traumatic Brain Injury
Office of Naval Research
$1,010,000  (10/01/12 - 09/30/15)
Jim Patton & Six other PIs at the Rehabilitation Institute of Chicago, Bob Kenyon & Jason Leigh (CS Co-Is) Daria Tsoupikova (Art and Design) Don Hedeker (Biostatistics)
Machines Assisting Recovery from Stroke, Spinal Cord Injury for Reintegration with Society
DOE Rehabilitation Engineering Research Center (RERC) Program
$5,000,000
$800,000 UIC portion (10/01/12 - 09/30/17)
Jie Liang
Computational Assembly of Beta Barrel Membrane Protein

NIH
$93,109 Supplement
$1,479,240 Total funding
(03/01/07 - 08/31/13)
Andreas Linninger
RET in Engineering and Computer Science Site - Chicago Science Teacher Research (CSTR) Program
NSF Research Experiences for Teachers (RET) program
$499,933  (04/01/12 - 03/31/15)
Belinda Akpa
BRIGE: Colloidal Scavengers for the Reversal of Drug Toxicity
National Science Foundation
$175,000  (09/01/12 - 08/31/14)
Ludwig Nitsche
Sohail Murad
Peter Nelson
Lewis Wedgewood
Gerald Smith

Scholarship Program for Women in Chemical Engineering

National Science Foundation

$599,766
(09/01/11 - 08/31/13)
Farhad Ansari (CO-PI)
UMASS-Lowell (PI)
Multi-modal Remote Sensing System (MRSS) for Transportation Infrastructure Inspection and Monitoring
Univ. of MA (Lowell)
$2,564,401
CME’s portion: $535,374
(10/01/11 – 02/31/13)
Kouros Mohammadian
Kazuya Kawamura (CUPPA)
Steve Schlickman (UTC)

Feasibility Study for the Chicago - Champaign Link in the Midwest High-Speed Rail Network

Illinois Department of Transportation
$1,286,000; UIC share: $616,000
(07/19/11 - 09/30/12)
Alexander Chudnovsky
Plane strain Rock Splitting testing and morphology Characteration by optical and SEM microscopy

Shell
$270,000 Supplement
$2,460,019 Total funding
(03/01/12 - 04/30/13)
Alexander Chudnovsky
Determination of Resistance to Rapid Crack Propagation of PE Pipes
Dow Chemical
$160,000 Supplement
$570,000 Total funding
(04/01/12 - 12/31/12)
Krishna Reddy
Sustainable Biocover System for Methane Oxidation in Landfills
National Science Foundation
$350,000  (03/01/12 – 02/28/15)
Jakob Eriksson
Sensor Fusion for Multi-modal Traffic Sensing
National Science Foundation CAREER Award
$400,000  (03/01/12 - 02/28/17)
Tim Hinrichs (Post-Doc PI)
Lenore Zuck (Co-PI)
Foundations of Application-Sensitive Access Control Evaluation
National Science Foundation
$653,000  (09/01/12 - 08/31/15)
Ouri Wolfson
Isabel Cruz
Bo Xu

III: Large: Collaborative Research: Moving Objects Databases for Exploration of Virtual and Real Environments

National Science Foundation
$1.17 million (10/01/12 - 09/30/17)
Peter Nelson & John Dillenburg
Gateway Traveler Information System and Travel Midwest Website
IL Dept. of Transportation (IDOT), $4,234,028 (2011-2013)
Bhaskar DasGupta
Novel Algorithmic Tools For Analysis of Biological and Social Networks
National Science Foundation
$356,222  (09/01/12 - 08/31/15)
Venkat Venkatakrishnan
Robert Sloan (Co-PI)
SFS Scholarships in Cybersecurity and Information Assurance
National Science Foundation
$1,968,119 (09/01/12 - 08/31/17)
Venkat Venkatakrishnan
Electronic Security and Privacy: Technological, Human, Enterprise and Legal Considerations
National Science Foundation IGERT
$3.2 Million (2011-2016)

With Information & Decision Sciences (Business), Communications (LAS), Biomedical & Health Information Sciences (Applied Health Sciences)
Lenore Zuck  
Venkat Venkatakrishnan (Co-PI)  
Defensive Optimizing Compilation  
DARPA  
(Administered by Air Force OSR)  
$1.38 million  (06/29/12 - 06/28/15)
Barbara Di Eugenio
Intelligent Learning Environments for Computer Science Undergraduate Education
Qatar National Research Fund (QNRF)
$346,854 UIC portion (10/15/12-10/15/15)
Venkat Venkatakrishnan
Robert Sloan (Co-PI)
Jon Solworth (Co-PI)
Training Grant for 3 MS
Students Over 3 Years
Department of Homeland Security
$250,000   (09/20/12 - 08/31/15)
Tanya Berger-Wolf
Prof. Joel Brown (UIC Biology)
INSPIRE: Mingle: Sensing the Interactions of Animals
National Science Foundation
$322,000  (09/01/12 - 08/31/16)

Collaborative research with R. Kravets and Y. Hu, UIUC, and D. Rubenstein, Princeton.
Total funding: $800,000
Leilah Lyons
Joshua Radinsky  (Co-Pi UIC Curriculum and Instruction)
Andrew A. Beveridge  (Co-Pi Queens College Sociology)
INSPIRE: Studying and Promoting Quantitative and Spatial Reasoning with Complex Visual Data Across School, Museum, and Web-Media Contexts
National Science Foundation
$799,000  (09/12 - 08/15)
Wenjing Rao
Towards the Future of Reliable and Scalable Nanoelectronic Systems
National Science Foundation CAREER Award
$450,000  (03/15/12 - 02/28/17)
Danilo Erricolo
Distributed RF systems for Close-in Sensing and Imaging
AFOSR
$544,240  (04/01/12 - 03/31/15)

Research Tasking for RF Tomography
AFRL
$50,000  (03/21/12 - 03/20/13)
G. Keenan (CON-PI)
D. Wilkie (CON-PI)
Y. Yao
R. Ansari, A. Khokhar, A. Johnson
Describing, Contrasting, and Visualizing End-of-Life Care in the 21st Century
NIH, $2,069,041
(9/18/2011- 6/30/2015)
Michael Stroscio
Surface Diagnostics on the Nanoscale
Novellus Systems Inc.
$200,000  (10/01/11 – 09/30/15)
Natasha Devroye
CIF Small -- Wireless Relay Networks: Coding Above Capacity and Exploiting Structure
National Science Foundation
$349,884  (01/01/13 - 12/31/15)
Sudip Mazumder
P. R. Kumar at Texas A&M (Co-PI)
CPS: Synergy: Collaborative Research: Boolean Microgrid
National Science Foundation
$1,195,567
$629,256 UIC share (10/01/12-09/30/15)
Daniela Tuninetti  
CIF: Small: Modules as a Framework for Interference Alignment in Networks  
National Science Foundation  
$315,575  (10/01/12 - 09/30/15)
Alan Feinerman (CO PI)
Prateek Gupta (PI & former CME student of M. McNallan)
SBIR Phase II: Vacuum Insulation Panels with Tensile Structural Element
National Science Foundation SBIR
$500,000
$87,138 UIC share
(08/15/12 - 08/31/14)
Ahmed Shabana
Farhad Ansari, Mohsen Issa, Craig Foster, Jason Leigh, Ouri Wolfson (Co-PIs)
Chris Barkan (PI) UIUC
National University Rail Center
(University Transportation Center)
US DOT/RITA
COE amount, $460,000  (02/12- 01/14)
Alexander Yarin
Characterization of Rheological Behavior of Gypsum Slurries
USG
$150,000  (01/01/12-12/31/12)

Nano-Encapsulated Phase-Change Materials for Heat Transfer Enhancement
NSF via IL. Inst. of Technology
$128,470  (09/01/11-08/31/14)
Farzad Mashayek
Simulation of Turbulent Combustion Interaction in High Speed Flow on Unstructured Grids
Enabling Energy Systems, Inc.
$77,059  (04/16/12 - 07/15/14)

Experimental and Computational Studies to Advance Operability and Performance of Combustion Systems Adopting Fluidic Control
Office of Naval Research
$75,000  (10/01/11-09/30/12)
Dino Megaridis
Development of Acqueous Based Nano-Compositions to Surface Treat Substrates Towards Super-Repellency: Phase II
Kimberly-Clark Corp
$130,507  (07/01/12 - 06/30/13)
Steffen Mueller  
Global Warming Impact of Corn Stover Combusted in Fluidized Bad Boiler  
**Monsanto Company**  
$84,000  (02/27/12 - 02/26/13)

Updating of CCLUB Model with Domestic and International Land-Use Change Emissions Factors for Cellulosic Biofuel Pathways  
**Argonne National Laboratory**  
$45,000  (04/05/12 - 09/30/12)
John Cuttica
Implementation of Illinois Renewable Energy Resources
Biogas and Biomass to Energy Grant Program
$550,000 (01/11/11 - 12/31/12)

$983,819 (07/01/12-05/31/12)

Market Transformation
$120,000 (06/01/11 - 05/31/12)

IL Dept. of Commerce & Economic Opportunity (DCEO)
Undergraduate Enrollment Trends

<table>
<thead>
<tr>
<th>Year</th>
<th>Enrollment</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005</td>
<td>1550</td>
</tr>
<tr>
<td>2006</td>
<td>1624</td>
</tr>
<tr>
<td>2007</td>
<td>1714</td>
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<tr>
<td>2008</td>
<td>1781</td>
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<td>2009</td>
<td>1912</td>
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<tr>
<td>2010</td>
<td>2098</td>
</tr>
<tr>
<td>2011</td>
<td>2158</td>
</tr>
<tr>
<td>2012</td>
<td>2311</td>
</tr>
</tbody>
</table>
ACT Scores for Entering Freshmen

<table>
<thead>
<tr>
<th>Year</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005</td>
<td>25.4</td>
</tr>
<tr>
<td>2006</td>
<td>25.6</td>
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<tr>
<td>2007</td>
<td>25.6</td>
</tr>
<tr>
<td>2008</td>
<td>25.5</td>
</tr>
<tr>
<td>2009</td>
<td>25.4</td>
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<tr>
<td>2010</td>
<td>26.1</td>
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<tr>
<td>2011</td>
<td>26.5</td>
</tr>
<tr>
<td>2012</td>
<td>27.1</td>
</tr>
</tbody>
</table>
Underrepresented Minority Enrollments

- 2005: 306
- 2006: 331
- 2007: 374
- 2008: 371
- 2009: 468
- 2010: 490
- 2011: 504
- 2012: 587
Undergraduate Women Enrollment

<table>
<thead>
<tr>
<th>Year</th>
<th>Enrollment</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005</td>
<td>261</td>
</tr>
<tr>
<td>2006</td>
<td>247</td>
</tr>
<tr>
<td>2007</td>
<td>251</td>
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<td>2008</td>
<td>266</td>
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<tr>
<td>2009</td>
<td>266</td>
</tr>
<tr>
<td>2010</td>
<td>295</td>
</tr>
<tr>
<td>2011</td>
<td>308</td>
</tr>
<tr>
<td>2012</td>
<td>342</td>
</tr>
</tbody>
</table>
Student Development

- Strong emphasis on student internships and permanent jobs
- Led by our external Advisory Board
- Over the last academic year over 275 companies hired our students for paid internships and permanent jobs
275+ Companies Hiring UIC Engineering Students during FY12
Student Placement Rates
(May 2012 Graduation Survey)

- 73% were employed within six months
- 14% were accepted into graduate school
- 13% still seeking employment
Student Placement Rates
(with internships)

- 84% of the students who had one or more internships were employed within six months
- 100% of the students who had two or more internships were employed within six months
Guaranteed Paid Internship Program
(Freshmen entering in Fall 2013)

- Goal is to get early students their first internship early
- Every incoming freshmen meeting the following criteria will be guaranteed a paid internship for summer of 2014
  - Complete 24 UIC semester hours with a GPA of 3.0 or greater
  - Complete Math 180 (Calc I) with a B or higher
  - Complete at least one additional program specified 100 level Engineering course with a B or higher
  - Participate in our Engineering Student Success program

- Mix of placements between industry and our university research laboratories
  - UIC Internships 8 weeks x 32 hours/week x $10/hour
Strategic Realignment of the Department of Bioengineering

1. Effective August 16, 2011, the Department of Bioengineering is a department of both the Colleges of Engineering and Medicine.

2. B.S. degrees will be granted through Engineering; M.S. and Ph.D. degrees will be granted through the Graduate College.

3. Six new faculty members (funded equally from Engineering, Medicine and Campus).

4. The department head reports to both deans.
Department Goals
(from FY11 to FY20)

1. Develop UIC BioE into one of the top BioE departments in the U.S.

2. Increase BioE grant expenditures from FY11 by $3 million/year to $7 million/year.

3. Increase BioE B.S. graduates from 36 to 108 while increasing average ACT from current 29.1 to 32.

4. Increase number of M.S. graduates from 17 to 50.

5. Increase number Ph.D. graduates from 18 to 35.
Thank you for your attention.

Fleet Commander
Developed at UIC Electronic Visualization Laboratory (EVL)
by MS graduate candidate Arthur Nishimoto.