Engineering at Illinois – Corporate Partnerships

Engineering at Illinois delivers successful partnerships that impact businesses. Illinois has a strong track record of technology innovation and commercialization. We also lead the nation in funding from the National Science Foundation and are conducting a critical mass of research in many important areas including: Big Data/Data Analytics/Computing, Biomedical/Bioengineering, and Energy Technologies. Our industry partners are playing a key role in each of these areas, and many more.

Future Leaders Start Here
The leaders of some of the world’s top companies got their start at Illinois; companies like PayPal, YouTube, and BP. Our students’ excellence stays with them long after graduation. Our entrepreneurial nature combined with multidisciplinary focus and a drive for results builds a culture of leadership.

Great Startups from the University of Illinois
When you combine hundreds of world-renowned faculty and thousands of the best and brightest students you get an explosion of innovation across a vast array of technologies. The result is a top-ranked incubator and a 200-acre Research Park.

» More than 150 startups to date
» Raised more than $550 million in venture capital and angel funding
» Several large-scale successes, including ByteMobile’s purchase by Citrix for $425 million
» 2011 Outstanding Research Park Recognition
» 2013 Top 3 College Town Incubator - Inc. Magazine

Corporate Partners on the Move
» More than 160 corporate partners to date
» Training more than 400 interns per year in the Research Park alone and fueling new pipeline talent
» A 200-acre Research Park adjacent to campus with more than 90 companies and 13 buildings and growing
» More than 2,000 research projects per year across every engineering discipline

A Sampling of Current Illinois Corporate Partners

» Abbott
» AB InBev
» ADM
» Boeing
» BP
» BNSF Railway
» Caterpillar
» Citrix
» Dow Chemical
» Intel
» John Deere
» Microsoft
» Neustar
» Pepsi
» Raytheon
» Rolls-Royce
» Samsung
» Sony
» State Farm
» Yahoo

Illinois Talent Built these Top Companies

» Bloom Energy
» BP
» Flex-n-Gate
» PayPal
» Yelp
» YouTube
Engineering at Illinois – Excellence in Innovation

Results Driven
» One of the Top 5 engineering programs worldwide
» More than $40M of corporate-sponsored research per year
» More than 2000 research projects per year resulting in $229 million in research expenditures

Entrepreneurial Culture
» More than 30 companies founded by faculty and students
» Top 10 in the country for venture capital investments per capita
» Fellows of the National Academy of Inventors and winners of the American Ingenuity Award
» More than 90 companies and growing in our adjacent 200 acre top-ranked Research Park
» EnterpriseWorks incubator with more than 150 starts-ups to date

Breadth of Expertise
» Nine of our engineering specialties rank in the Top 5 by U.S. News & World Report.
» More than 400 faculty—many with joint appointments—across our 12 departments
» World-renowned faculty recognized with five Nobel Prizes and a MacArthur Genius Award
» Faculty members elected to the National Academy of Engineering and National Academy of Sciences

Students Prepared to Succeed
» More than 10,000 of the brightest innovative students (2,200 degrees awarded per year)
» Rated in the Top 5 most-prepared to succeed students by the Wall Street Journal
» An average ACT score above 32 for incoming freshmen

More than $75 million in multidisciplinary research expenditures including translational research in:
» Advanced Materials and Manufacturing
» Biomedical/Bioengineering
» Big Data/Data Analytics
» Energy Technologies

60+ laboratories, research centers, and institutes including:
» Advanced Digital Sciences Center (Singapore)
» Illinois Applied Research Institute

Multidisciplinary research centers with significant industry engagement:
» Advanced Transportation and Research Engineering Laboratory (ATREL)
» Air Conditioning & Refrigeration Center (ACRC)
» Beckman Institute for Advanced Science and Technology
» Coordinated Science Laboratory (CSL)
» Information Trust Institute (ITI)
» Institute for Genomic Biology (IGB)
» Seitz Materials Research Laboratory (MRL)
» Micro and Nanotechnology Laboratory (MNTL)
» National Center for Supercomputing Applications (NCSA)

The Innovations we Create Together will Impact Your Business!
Engineering at Illinois – Multidisciplinary Research

» Ranked one of the Top 5 Engineering Programs in the country and worldwide.
» $229 million in research expenditures, $40 million in corporate research each year.
» 650 researchers involved with more than 2,000 research projects focusing on new energy solutions, complete water systems, advanced manufacturing and materials, bioengineering, data analytics, and many more.
» Over 400 faculty including faculty members elected to the National Academy of Engineering and National Academy of Sciences.

Corporate Investments

<table>
<thead>
<tr>
<th>Industry</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aerospace</td>
<td>19%</td>
</tr>
<tr>
<td>IT Systems</td>
<td>17%</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>14%</td>
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<tr>
<td>Semiconductor</td>
<td>14%</td>
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<tr>
<td>Energy &amp; Chemicals</td>
<td>13%</td>
</tr>
<tr>
<td>Other</td>
<td>11%</td>
</tr>
<tr>
<td>Railroad</td>
<td>6%</td>
</tr>
<tr>
<td>Life Sciences</td>
<td>2%</td>
</tr>
<tr>
<td>Software</td>
<td>2%</td>
</tr>
</tbody>
</table>

Aerospace
Boeing, Rolls-Royce, Rockwell Collins, Lockheed Martin

IT Systems
Microsoft, NVIDIA Corp., Samsung, Hewlett-Packard, IBM, Cisco Systems, Motorola Solutions

Manufacturing
Caterpillar, Deere, GE, Wrigley, Michelin Americas, Parker-Hannifin, Northrop Grumman

Semiconductor
Intel, Semiconductor Research Corp., Texas Instruments

Energy & Chemicals
Dow Chemical, Exxon Mobil, BP

Other
Archer Daniels Midland, PepsiCo, BPC Airport Partners, G & H Real Estate

Railroad
Association of American Railroads, BNSF Railway Co., Amsted Rail

Life Sciences
Agilent, Welch Allyn, Abbott Labs, 3M

Software
Google Inc, Infosys Technologies

Annual Research Expenditures
This massive research enterprise translates directly into societal impact.

Solutions to the Big Issues.

Visioning Future Excellence Initiative
The Visioning Future Excellence initiative here at Illinois speaks to our commitment to drive change for some of the world’s most pressing issues. In Engineering, we play a major role in creating and implementing this change.

Interdisciplinary Themes
» Information and Technology
» Health and Wellness
» Energy and Environment
» Education

Federal
$172,213,279

Atmomatic
$228,526,081

ASEE*

*American Society for Engineering Education

Industry
$44,973,616

State
$5,607,778

Local
$5,731,408

20% 75% 2.5% 2.5%
## Research Institutes

Faculty and students are just two of the core elements of the College of Engineering. The facilities at the University of Illinois are an integral part of the groundbreaking work on campus. Multidisciplinary research is fostered through **research spaces designed specifically for collaboration.** These state-of-the-art facilities allow faculty the arena for creating ambitious research initiatives that impact on a global level.

### Multidisciplinary Centers
- Advanced Transportation and Research Engineering Laboratory (ATREL)
- Air Conditioning & Refrigeration Center (ACRC)
- Beckman Institute for Advanced Science and Technology
- Coordinated Science Laboratory (CSL)
- Information Trust Institute (ITI)
- Institute for Genomic Biology (IGB)
- Materials Research Laboratory (MRL)
- Micro and Nanotechnology Laboratory (MNTL)
- National Center for Supercomputing Applications (NCSA)

## Illinois Applied Research Institute (ARI)

The **Illinois Applied Research Institute** is a team of problem solvers and innovators committed to **accelerating research and product development and deployment.** ARI is a quasi-independent business unit able to negotiate quickly and meet unique project demands. ARI is at the hub of research knowledge in the Champaign-Urbana area, located in the University of Illinois Research Park.

### ARI’s Research Specialties
- Advanced metals
- Applied materials science
- Big data
- Bioscience and agriculture
- Computational electromagnetics
- Cybersecurity
- Energetic materials
- Extreme ultraviolet lithography
- Micro/Nano technology
- Modeling and simulation
- Prototype development
- Renewable energy

## Strategic Research Initiatives

Through multidisciplinary partnerships, companies benefit from the promising innovations explored at the University of Illinois. To expand research and **support collaboration in new and emerging areas**, the College of Engineering recently introduced its **Strategic Research Initiatives program.** SRI supports exploratory research in evolving fields and enhances existing capabilities for new interdisciplinary focus areas or centers. Funding for the SRI programs comes primarily from the College of Engineering.

### Current Projects
- A Theory of Cognitive and Algorithmic Decision Making
- Atomic-Scale Design of Oxide Heterojunctions for Energy Conversion
- Beyond Speech towards an Interdisciplinary Study of Sound
- Digital/Cyber Security and Nuclear Security
- Interfaces at the Ultimate Limit
- Interrogation of Special Nuclear Material Using the Illinois Pulsed Neutron Facility
- Nanomanufacturing Paradigm Shift from 2D to 3D Rolled-up Electronic and Photonic Devices and Sub-Systems
- Optimizing DNA Storage Efficiency via Joint Constrained and Error-Control Coding
- **Powering Big Data:** A Systems Approach to Future Computing Platforms
- Wide-Bandgap (WBG) **Power Electronics**

## Discover Student Engagement

We are committed to fostering relationships between students and organizations through education and research. In addition to traditional ways of engaging graduate students, companies will **discover new ways of engaging the undergraduate population.** Let us help you find the right connection for your interests.

- Senior Design/Capstone Projects
- Student Competitions/ Challenges
- Student Consulting
- Student Internships/Externships
- Student Research Experiences