

Illinois innovation at a glance

Illinois is a global business capital that puts science, technology, and innovation to work for its residents and economy.

With a highly diverse economy, world-class logistics, the global headquarters of 33 Fortune 500 companies, and a vibrant entrepreneurial community, Illinois' knowledge economy connects cutting-edge research and a highly skilled workforce to turn ideas into new products and companies. Our legacy of innovation includes the cell phone, the ultrasound, the light-emitting diode (LED), the web browser, and game-changing medications.

By the numbers

Cutting-edge research and development

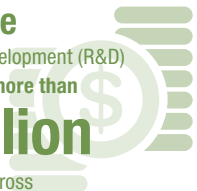
Illinois is home to 12 major research universities and 2 Department of Energy labs—including Argonne National Laboratory, Fermi National Accelerator Laboratory, the Illinois Institute of Technology, Loyola University Chicago, Northern Illinois University, Northwestern University, Southern Illinois University, the University of Chicago, and the University of Illinois—that drive discovery and train the tech workforce of the 21st century.

Top-10 state

by research and development (R&D) expenditures, with **more than**

\$15 billion

invested annually across academic basic and applied research, national labs, and industry



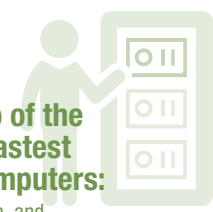
Top 90th

percentile nationally of published research in **engineering, computer science, materials science, chemistry, and chemical engineering**



Home to **two of the world's fastest super computers:**

Argonne's Mira, and Blue Waters at the University of Illinois' National Center for Supercomputing Applications



Six technology clusters

with leading research and industry activity: **advanced alloys, advanced polymers, batteries and energy storage, biofuels and biomass-derived products, medical biotechnology, and nanotechnology**



Catalytic innovation and entrepreneurship ecosystem

Illinois' entrepreneurship ecosystem drives startup growth by connecting innovators to a strong network of technology expertise, early-stage venture funding, and more than 75 incubators, accelerators, and coworking spaces.

20 publicly supported innovation hubs—

including 7 research and tech parks—which have catalyzed **\$1.8 billion** in private investments and supported more than **620 companies**

22,531
new businesses

launched in Chicagoland alone in 2012, making it a **top-five metropolitan statistical area (MSA)**



\$1.05 billion

raised in **venture capital** in 2014—the sixth-highest in the nation—across **nearly 90 deals**



Almost 450 active startups created with **university support** since 2009, including

141 in the 2013–14 academic year alone



Diversified business community

Illinois' industry and business diversity is one of its greatest strengths. The ability to connect small businesses with large corporate customers in many industry verticals drives competitiveness and opportunity for companies of all sizes.



Third
among most-populous states
by concentration
of high-tech
establishments

In Chicago, tech job growth of

19.3%

from 2011 to 2013—faster
than Boston, Raleigh-Durham,
or Seattle

Regional workforce strengths in advanced materials, biomedicine and biotechnology, clean energy, machinery and fabricated metals, information technology, and telecommunications



Strong tech talent production

Developing top science, technology, engineering, and mathematics (STEM) talent across all education levels is a differentiator for the state. Illinois is home to more than 200 higher education institutions, 48 community colleges that offer career training in more than 240 fields, and a workforce of 6.5 million people.

30,200
STEM graduates
at all levels—**24.3% of all degrees**,
outpacing the nation in PhD
and master's STEM degrees

Computer science graduates make up

14.4%

of all Illinois STEM graduates, a higher
proportion than in California,
Massachusetts, New York, or Texas

A workforce with

1.6 times

the national average concentration of
engineering specialists in fields
such as manufacturing, mechatronics,
microsystems, and others

Bioengineering
is the fastest-growing
STEM occupation in Illinois

Innovation drives key Illinois sectors

Advanced manufacturing

Illinois boasts more than 19,000 manufacturing firms, including the global headquarters of corporations like Boeing, Caterpillar, and Deere & Company. The \$320 million Digital Manufacturing and Design Innovation Institute (DMDII) awarded to Illinois by President Obama positions the state as the national hub for product and process development innovation.

Biotechnology

Illinois' biotech industry includes \$98.6 billion in economic impact, more than 3,500 biotech-related companies, and 81,000 jobs. The state is home to 5 of the top 15 teaching hospitals and locations, including the Illinois Medical District, which connect researchers, entrepreneurs, and clinicians to advance patient-centered care.

Clean tech

Advanced and renewable energy technology is vital to many industries, from consumer products to heavy equipment. Illinois is home to the Joint Center for Energy Storage Research, a \$120 million Department of Energy-funded battery innovation center. The state has developed an ecosystem to demonstrate and commercialize clean technologies, including cluster development activities around smart grid technology, research in areas such as clean coal and solar energy, and startup support through the Clean Energy Trust and Energy Foundry.

Food and agriculture

Illinois is the leading producer of soybeans, corn, and other agricultural commodities and home to one of only five USDA Agricultural Research Service laboratories. Large corporations such as Archer Daniels Midland, Kraft, and McDonald's, along with growth-stage companies like Chromatin—a sorghum agriculture biotech company that has raised \$48 million over the past two years—help maximize Illinois' agricultural productivity and utilize this output to feed and fuel the country. Food companies across the country rely on the Illinois Institute of Technology's Institute for Food Safety and Health, an FDA Center of Excellence, to access the latest food safety technology and testing.

Information technology

Illinois is a leader in e-commerce, enterprise software, and big data analytics. Recent successes include the \$800 million acquisition of online payment company Braintree by PayPal, as well as the \$2.7 billion IPO for GrubHub. Digital technology startup facilities like 1871—which since its inception in 2012 has supported more than 500 companies, including approximately 50 graduates who have raised more than \$50 million—bolster the state's strong pipeline of new products and programming talent.

Materials and chemicals

New materials and chemicals are a foundation for innovation in areas like electronics, pharmaceuticals, and manufacturing. Illinois is at the forefront of integrated computational materials engineering thanks to innovative companies and nation-leading R&D capabilities. Initiatives such as the Center for Hierarchical Materials Design—part of the White House Materials Genome Initiative—harness the state's supercomputing facilities and expertise to develop the materials of tomorrow. University spinoffs focused on areas like next-generation chemical catalysts, semiconductors, self-healing materials, and new metal alloys catalyze materials and chemicals technologies to support major Illinois industries.

Sources: National Science Foundation, National Center for Science and Engineering Statistics (NCSES); ISTC, *Illinois science and technology roadmap*, 2014; ISTC, *Illinois innovation hubs survey*, 2014; National Venture Capital Association; ISTC, *Illinois Innovation Index*, Q4 2014; Bureau of Labor Statistics (BLS), Quarterly Census of Employment and Wages (QCEW); CBRE, *U.S. tech-twenty report*, 2014; Illinois Department of Commerce and Economic Opportunity (DCEO), *The Illinois economic development plan*, 2014; Economic Modeling Specialists International (EMSI).



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