

ADVANCING

INNOVATION

Fiscal 2016 Annual Report

The Office of Technology Management at Urbana-Champaign



TM

ILLINOIS

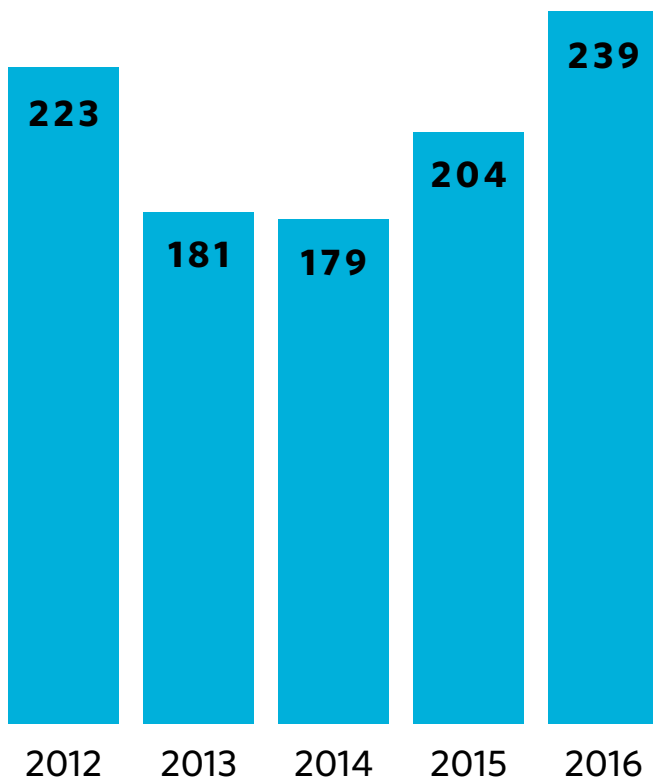


The role of the Office of Technology Management is to move the innovations that result from University of Illinois research into public use by protecting and licensing University intellectual property. We accomplish this by tailoring our efforts, our programs and our services to best serve the unique needs of each of our campus and external partners.

Our goal is to create impact. Both the societal impact that University discoveries have on public wellbeing, as well as the campus and statewide impact that result from the partnerships and economic development that innovation transfer creates.

OTM worked with **61** departments and units across campus last year.

Five-Year History: Disclosure Rate

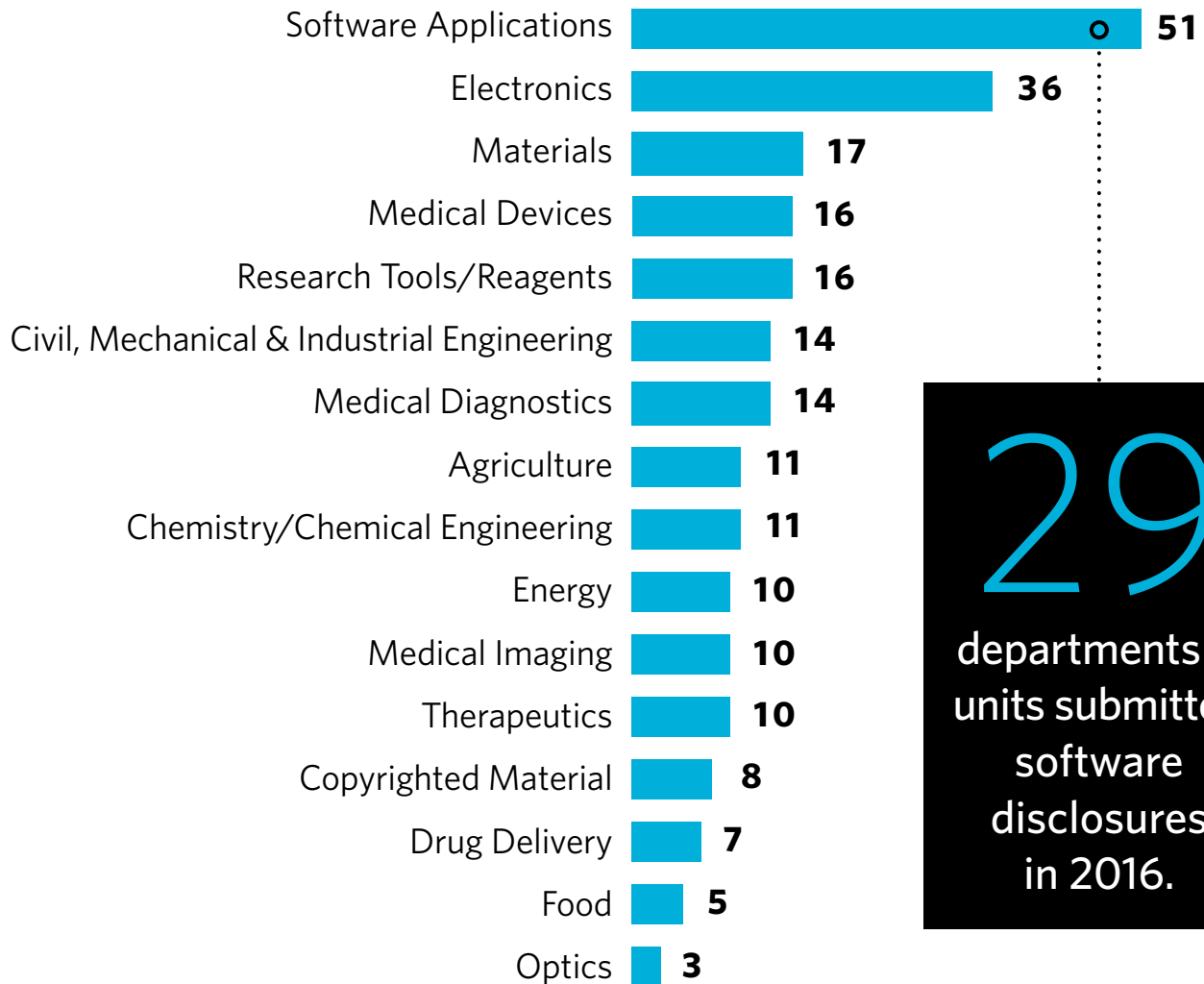


99%

OTM SATISFACTION

We surveyed campus in January 2016 to assess levels of awareness and satisfaction with our services. 99 percent of respondents who interacted with our office reported being satisfied or very satisfied.

2016 Disclosures by Innovation Category



Extensive Patent Portfolio

The University of Illinois (system) has ranked in the **top 20** on the National Academy of Inventor's list of Top 100 Worldwide Universities Granted U.S. Utility Patents since publication of the list began four years ago. We are currently ranked #18.

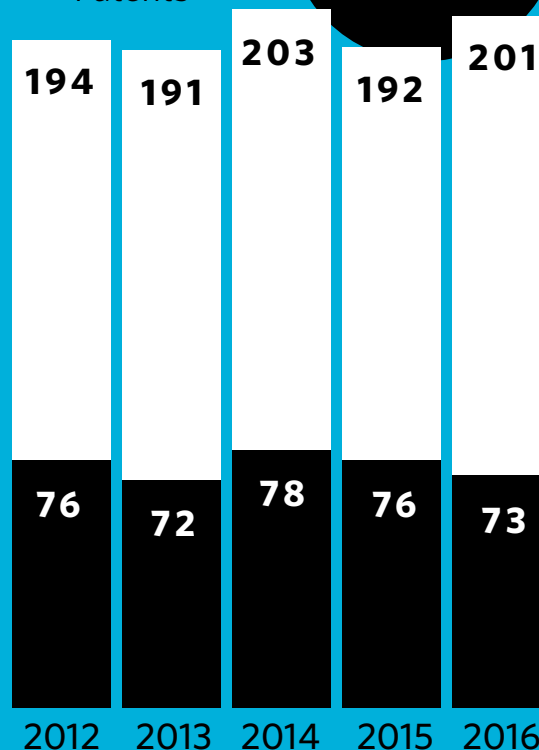
45%

of U.S. patents issued to campus in fiscal 2016 have been licensed or optioned.

Five-Year History: U.S. Patent Applications and Issued U.S. Patents

- U.S. Patent Applications
- Issued U.S. Patents

>750
ACTIVE,
ISSUED U.S.
PATENTS



Lean Start-Up License

Last year, our Office created a new option and research-use license to help emerging start-ups get off the ground.

This “lean license” grants companies an option to exclusively license technology, and during the option period, the company has a license to use the technology for research purposes. The license also allows limited product sales to satisfy the funding requirements of certain awards.

This gives companies that aren’t quite ready to execute a full commercial license the ability to conduct further research & development and to apply for government grants such as SBIR/STTR funding. The goal is for lean licensees to return for a commercial license when the technology and company are primed for long-term success.

Laying the Groundwork for Future Licenses

In the last five years, the Office has managed **1,095 IP-related agreements** in addition to licenses and options. These include material transfer, confidentiality, evaluation and inter-institutional agreements. These interactions lay the groundwork for future technology transfer activity.

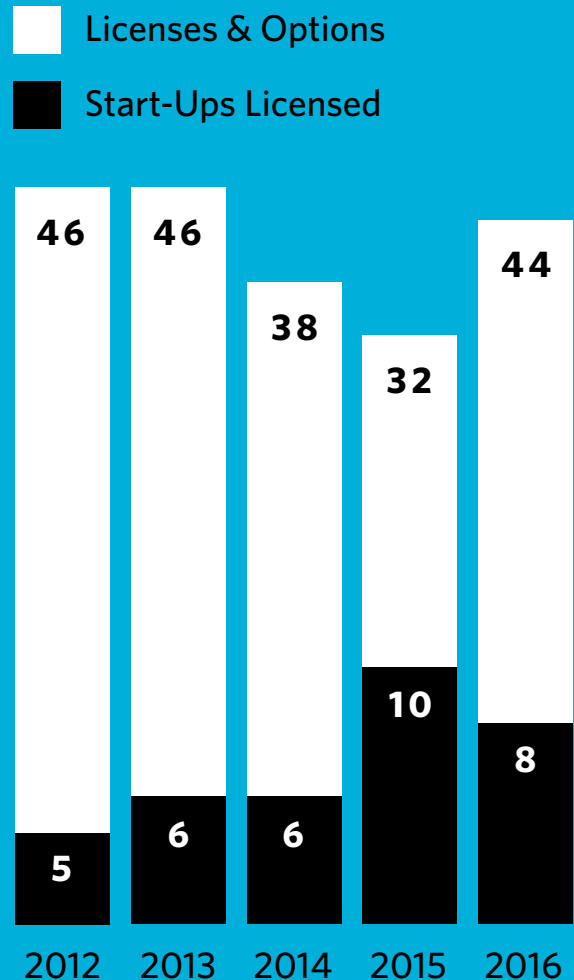
We also work with the online marketplaces KeraFast and AddGene to facilitate the transfer of biological materials.

Ready-to-Sign Licensing

We launched a ready-to-sign licensing program in 2016 to encourage rapid transfer of the University's intellectual property. Standard terms and conditions have been pre-determined for each of the technologies in the program and are presented in downloadable agreements. To promote regional economic development, we waive the license fee that is due at the effective date for partners developing technologies in Illinois.

More than 120 technologies are available under the program, covering a diverse range of disciplines, from crops and food to solar panels, antibodies and software.

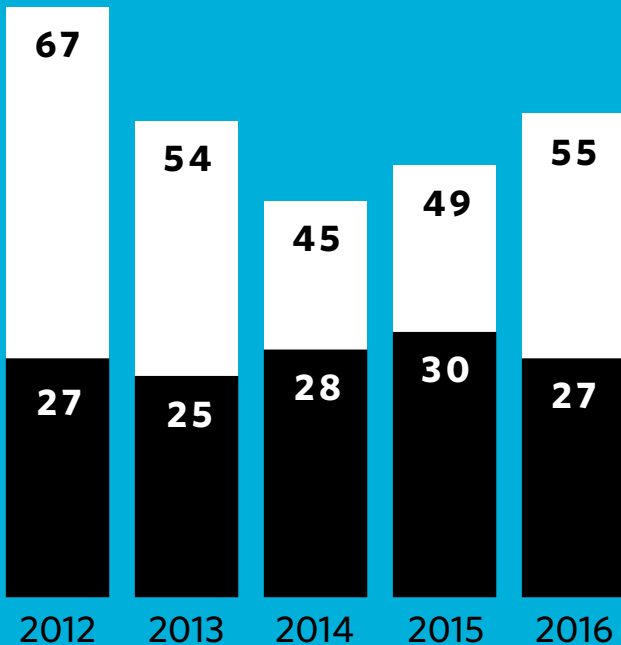
Five-Year History: Licenses & Options and Start-ups Licensed



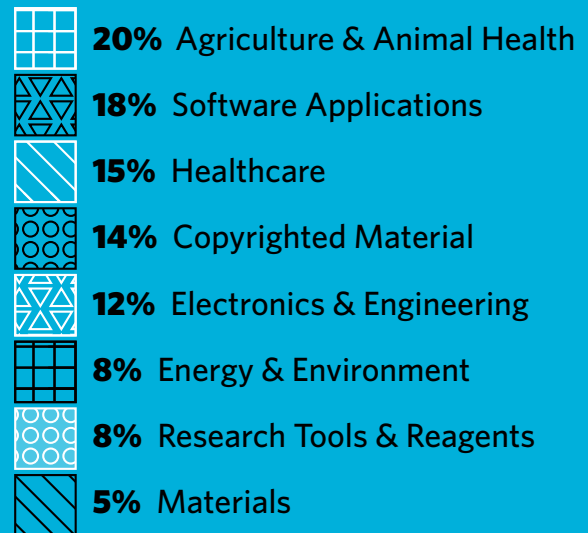
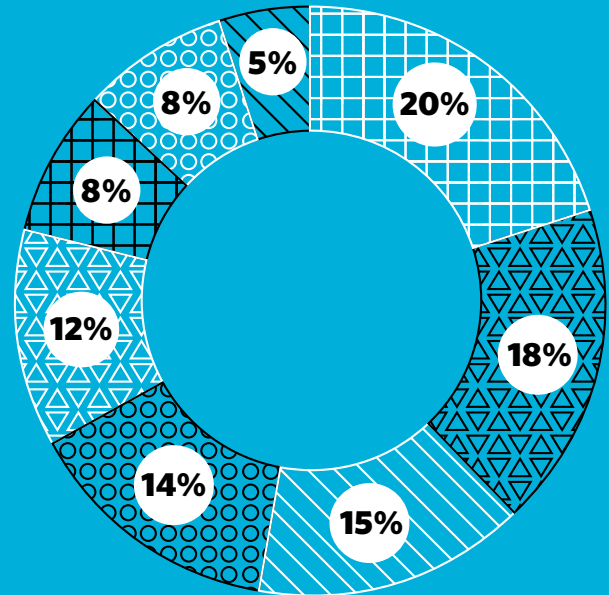
Five-Year History: Count of Departments and Units

OTM reaches out across campus to align our portfolio with the diverse range of campus research. As a result, the disclosures we have received have led to a broad base of licenses & options.

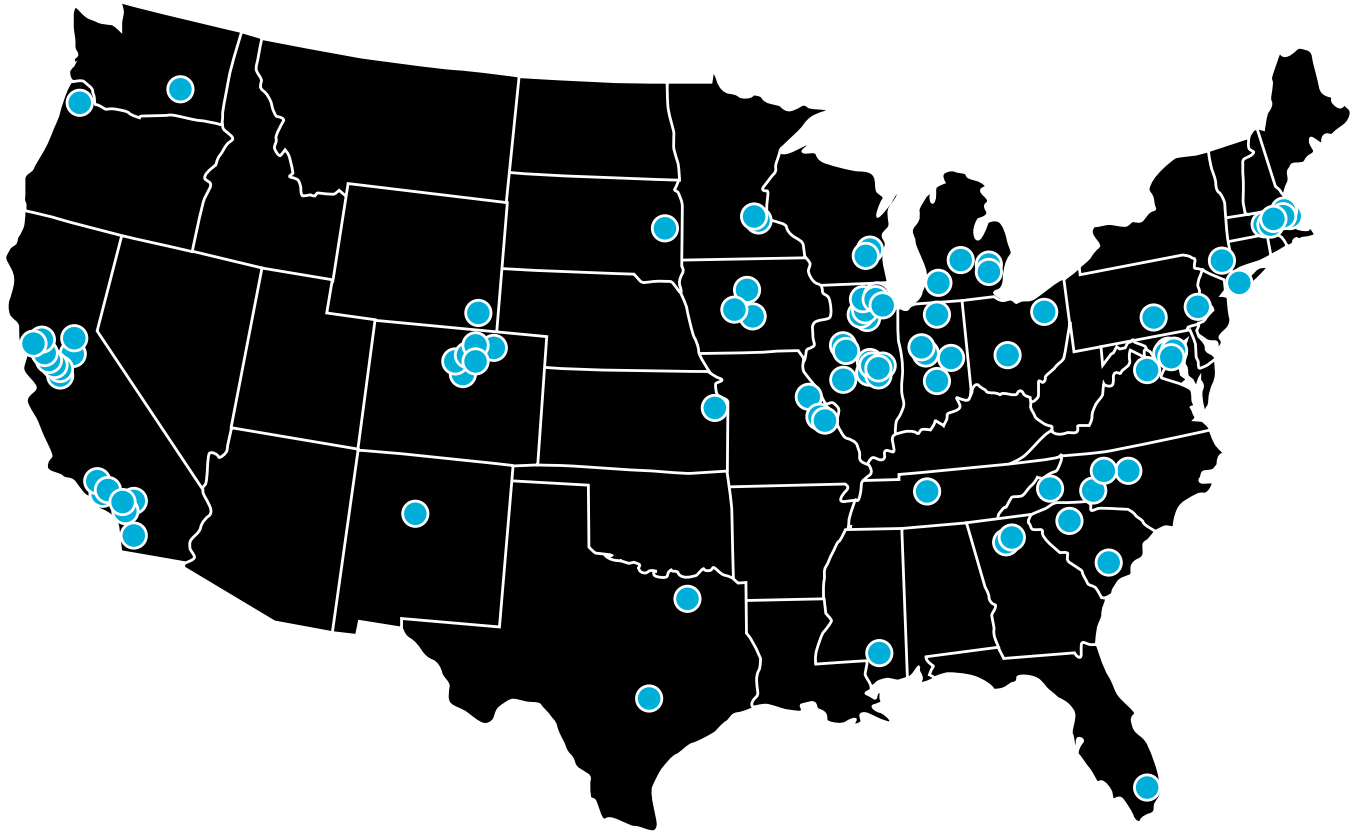
- Number of Departments/Units Affiliated with Disclosures
- Number of Departments/Units Affiliated with Licenses & Options



Active Licenses by Innovation Type (%)



Active Licenses Across the United States



More than **245** active licenses, including **60+** active start-ups across the country

Urbana Start-Ups Licensed in Fiscal 2016

AG-SENSUS

Helping farmers analyze and manage crop data with a precision farming operating and remote-sensing system. Created by Lei Tian from the College of Agricultural, Consumer and Environmental Sciences. The company is located in the EnterpriseWorks incubator.

agsensus.myshopify.com

AUTOScout

Providing real-time football video analytics to assist coaches. Developed by Shaunak Ahuja and based on technology developed at the University's Advanced Digital Sciences Center in Singapore, AutoScout is headquartered in the EnterpriseWorks incubator.

autoscoutinc.com

BIONANOCON

Providing recombinant proteins based on Nanodisc technology that support membrane protein drug development. Founded by Stephen Sligar from the College of Liberal Arts & Sciences. The company is based in Urbana, Illinois.

PRENOSIS

Developing faster and more precise diagnostic tools such as LifeCounts, the first complete blood count handheld diagnostic device. Co-founded by Rashid Bashir and Bobby Reddy from the College of Engineering. The company is located in the EnterpriseWorks incubator. electrocyt.com

EMBEDOR TECHNOLOGIES

Monitoring the structural condition of civil infrastructure through the use of wireless sensors. Founded by Gul Agha, Bill Spencer and Kirill Mechitov from the College of Engineering. The company is located in the EnterpriseWorks incubator. embedortech.com

MADBONE, INC.

Designing innovative brass instrument leadpipes and mouthpieces, such as the multi-tapered MADPipe. Based on the research of Ph.D. graduate Matthew Dixon, from the College of Fine and Applied Arts. MADBone, Inc. is located in Champaign, Illinois. madpipe.us

TRANSPORTATION ENGINEERING SOLUTIONS AND TECHNOLOGIES (TEST)

Helping highway and tollway authorities assess the sustainability of roadway construction and operations. Developed by Imad Al-Qadi from the College of Engineering and located in the EnterpriseWorks incubator. testsustainability.com

WEARIFI

Developing lightweight, wearable near-field communication technology with potential uses ranging from patient monitoring to consumer transaction payments. Based on the research of John Rogers, formerly from the College of Engineering. The company is located in the EnterpriseWorks incubator.

Proof-of-Concept Funding

Campus proof-of-concept funding since 2009 has led to:

\$1.7

million in
proof-of-concept
awards

35

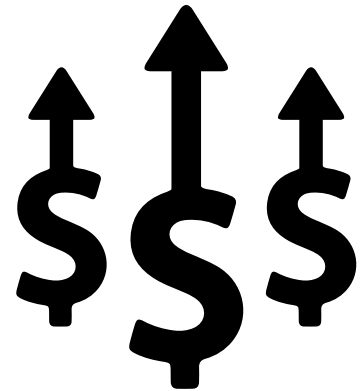
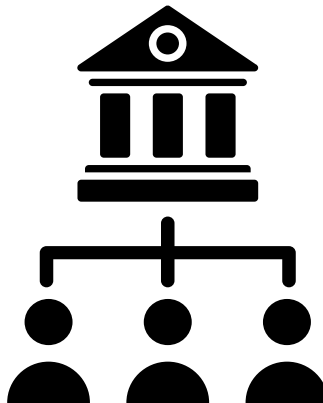
funded
projects
across campus

11

start-up
companies
formed

\$52

million in follow-on
venture, angel, and
SBIR/STTR funding



The Illinois Proof-of-Concept Fund (I-POC)

2016 Awardees

Campus units and the OVCR contributed funds toward a third round of I-POC funding in 2016, resulting in six new funded projects.

- **Stephen Long** (Woese Institute for Genomic Biology): Increased Photosynthetic Efficiency and Productivity in Plants with Faster Photo-Protection
- **Angela Kent** and **Andrew Leakey** (Woese Institute for Genomic Biology): Recurrent Co-selection of Plants and Associated Microbiomes
- **Rachel Whitaker** and **Patrick Degnan** (Woese Institute for Genomic Biology): CRISPR-capture Microbiome Surveillance Method
- **Jean-Pierre Leburton** and **Lav Varshney** (Beckman Institute): Machine Learning for Nanopore Bio-Detection
- **Jacob Sosnoff** (Applied Health Sciences): Smartphone Based Fall Risk Assessment
- **Lisette Piedra** (Social Work): *Vida Alegre* App Development

In the last two rounds of I-POC funding, three awards have gone to faculty in the social sciences, enabling them to create healthcare-focused mobile apps.

Contributing to the Innovation Ecosystem



Our office hosted, sponsored or participated in more than 60 campus events last year, including hosting the Midwest Regional Director of the USPTO for a daylong campus visit.

Some of our contributions to entrepreneurship in our community this year included:

- Guest lecturing about intellectual property to classes across campus
- Speaking on panels at campus events, such as the Ag-Tech Innovation Summit, the CNST Nanotech Workshop and the IGB Postdoc Career Development Workshop
- Serving on the organizing committees of Innovation Celebration and the Entrepreneurship Forum
- Staffing a table at the New Faculty Resource Fair
- Participating in judging the Cozad Business Plan Competition
- Mentoring national I-Corps teams

Partnership with Illinois State University

OTM now provides fee-based services to Illinois State University to help identify, patent and license new intellectual property developed by ISU faculty on the Normal campus. We will also provide workshops and educational materials to promote awareness of technology transfer opportunities.

Innovation Celebration

Innovation Celebration is an annual ceremony recognizing the entrepreneurial spirit in the community and on campus. OTM is proud to partner with event organizers to host two of the awards.

INNOVATION TRANSFER AWARD recognizes an individual or group whose research has resulted in either a discovery or a work with the potential for significant societal impact.

2016 Awardee:

Paul Hergenrother, College of Liberal Arts & Sciences, for his work developing anti-cancer therapeutic candidates.

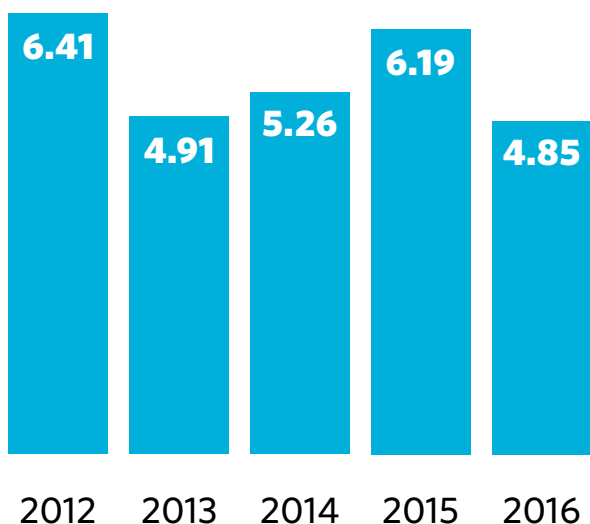
ALEXIS WERNISING INNOVATION AWARD recognizes an individual or team that has channeled their experience living with a disability into positive change through the creation of new products, environments or protocols that enhance quality of life. This award was established in 2016 to honor the memory of **Alexis Wernsing**, an innovator in the creation of voice amplification systems for the disabled.

Fiscal 2016 Summary

College/Unit	Disclosures	U.S. Patent Applications Filed	U.S. Patents Issued	Licenses & Options
Campus Total	239	201	73	44
Agricultural, Consumer, and Environmental Sciences	22	10	3	10
Applied Health Sciences	6			
Beckman Institute for Advanced Science & Technology	15	27	13	5
Education	3			1
Engineering	141	123	50	17
Fine & Applied Arts	3	1	1	1
Institute for Genomic Biology	17	12	4	3
Liberal Arts & Sciences	54	73	23	14
Medicine		1		1
National Center for Supercomputing Applications	2			2
Social Work	2			
Veterinary Medicine	5	3	3	

Note: Due to the large amount of interdisciplinary research on campus, inventions are often associated with more than one college or unit. As a result, the numbers reported in the table above may be counted multiple times, once for each associated college.

Five-Year History: Royalties Earned (\$ millions)



ROYALTIES EARNED: \$4,857,437

- Non-University Share: \$9,084
- Patent Expense Reimbursement: \$2,385,195
- Net Available for Distribution: \$3,307,779

ACTUAL DISTRIBUTIONS

- Inventors' Share: \$709,162
- University Share
 - Unit/College: \$1,166,683
 - OTM Cost Recovery: \$453,489

Note: "Actual Distributions" do not match the "Net Available for Distribution" in any one year because of the time lag between the date many are received and the date actual distributions are made.

TOP THREE REVENUE GENERATING TECHNOLOGIES

Stretchable

Semiconductors:

stretchable, flexible and printable semiconductors and electronic circuits

Wheat Lines:

being produced on farms across the eastern United States

Small Molecule

Synthesis:

molecular prosthetics that can serve as substitutes for missing proteins

Share the Vision Innovation and Start-Up Showcase

Last fall, the Office of Technology Management and EnterpriseWorks welcomed more than **200 attendees** to our fourth showcase event, featuring emerging research and start-ups in medical devices & therapeutics, robotics & computer vision, and computer networks & network security.

This event has facilitated introductions that have led to partnerships, opportunities and funding. Share the Vision 2015 was covered on the front page of the Champaign-Urbana *News-Gazette's* print edition.

Wow. U of I sure knows how to deliver an Innovation Showcase of great new technologies, from the tour of Enterprise Works, to the opening reception, to the next morning's presentations, capped off with founders/CEOs from the startups in the afternoon — perfectly done!

— Paul A. Stewart, Managing Director PASCO Ventures LLC Indianapolis, IN

**Office of Technology Management,
University of Illinois at Urbana-Champaign**
Ceramics Building, Suite 319,
105 S. Goodwin Ave., Urbana, IL 61801

217.333.7862 ▪ otm@illinois.edu
otm.illinois.edu ▪ Twitter: @ILInnovations

Interim Director: Nathan Hoffmann
217.244.4747 ▪ nhoffma2@illinois.edu

The Office of Technology Management is responsible for stewarding the intellectual property generated by research and educational activities at the University of Illinois.

OTM.ILLINOIS.EDU