



THE OFFICES
OF TECHNOLOGY
MANAGEMENT

YEARS OF
INNOVATION
TRANSFER

In the past fifteen years, the Offices of Technology Management have...

RECEIVED
4,705
INVENTION
DISCLOSURES

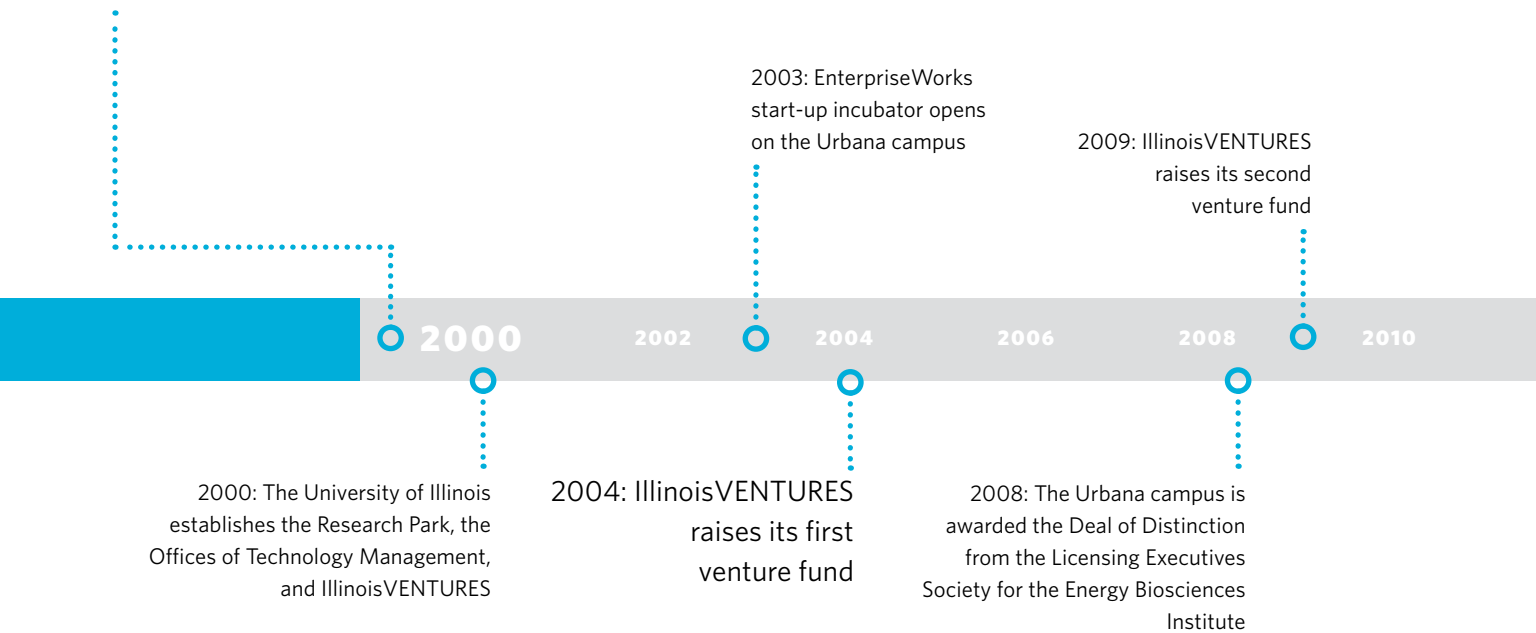
RECEIVED
\$217 MIL
IN ROYALTIES

SIGNED
1,137
LICENSES &
OPTIONS

LICENSED
161
NEW
START-UPS

BEEN ISSUED
978
U.S. PATENTS

In 2000, the University of Illinois proposed a roadmap for technology transfer and entrepreneurship and added economic development as the fourth pillar of the University's mission. This was followed by a significant commitment of resources and infrastructure.



In the 15 years since, the University has implemented programs and services that support innovation and entrepreneurship across our campuses and among all stakeholders. We are proud of the social and economic impact of the innovations that have emerged as a result.

2011: EnterpriseWorks in Urbana launches the I-Start program and is awarded UIRP Outstanding Research Park of the Year

2012: The Chicago campus is awarded the Deal of Distinction from the Licensing Executives Society

2012: Inaugural *Share the Vision* technology showcase on the Urbana campus

2013: The Urbana campus is selected as one of ten NSF I-Corps sites

2013: The State of Illinois and the University invest in the Health, Technology, Innovation (HTI) initiative at EnterpriseWorks Chicago

2014: The Chicago campus launches Innovate@UIC and the POC Accelerator

2014: University of Illinois at Urbana is inducted into the National Academy of Inventors

2011

2012

2013

2014

2015

2012: EnterpriseWorks Chicago opens

2013: OTM-Chicago partners with IllinoisVENTURES and the Office of the Chancellor to form the Chancellor's Innovation Fund

2013: Innovosource ranks IllinoisVENTURES #1 in gap funding for third-party capital attraction

2014: OTM-Urbana partners with the Office of the Vice Chancellor for Research to launch the Illinois Proof-of-Concept Program

▶ This is an update on what we've built.

POWERFUL INFRASTRUCTURE

69% of all start-ups licensing University IP from the Urbana campus have participated in one or more supporting services, such as taking space in the incubator or receiving I-Corps training.



More than **175 start-ups and entrepreneurial teams** on the Urbana campus received support from University resources in 2015.

EnterpriseWorks Chicago hosts more than **45 companies**, including 26 in Health Technologies Institute (HTI) and 19 in the Incubator Laboratory Facility (ILF).



22 Projects have gone through the Proof-of-Concept Accelerator on the Chicago campus.

\$879 million has been attracted in venture capital and angel investment funding by start-up companies since the opening of the EnterpriseWorks incubator in Urbana in 2003.

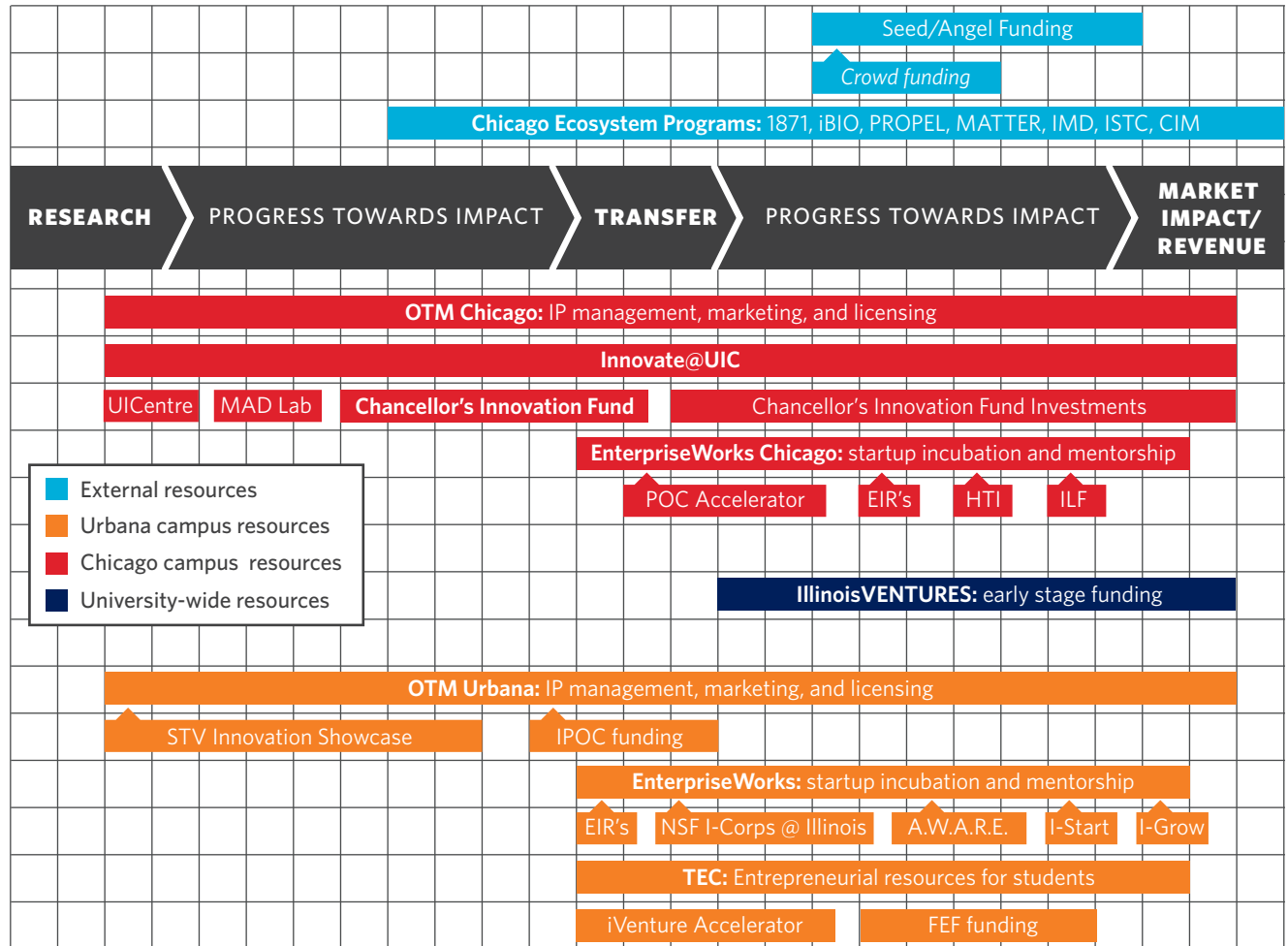


Companies funded by IllinoisVENTURES have raised more than **\$600 million** in third party capital and employ more than **600 people**.

The University of Illinois is **#21** on *Reuters* list of the 100 Most Innovative Universities Worldwide.

AVAILABLE RESOURCES

Every innovation follows its own unique path to market, and in response, the University has developed a system of resources that supports innovators with different needs and at different stages of the process. These programs and services help lay the foundation for commercialization and promote more successful outcomes.



STRONG START-UPS

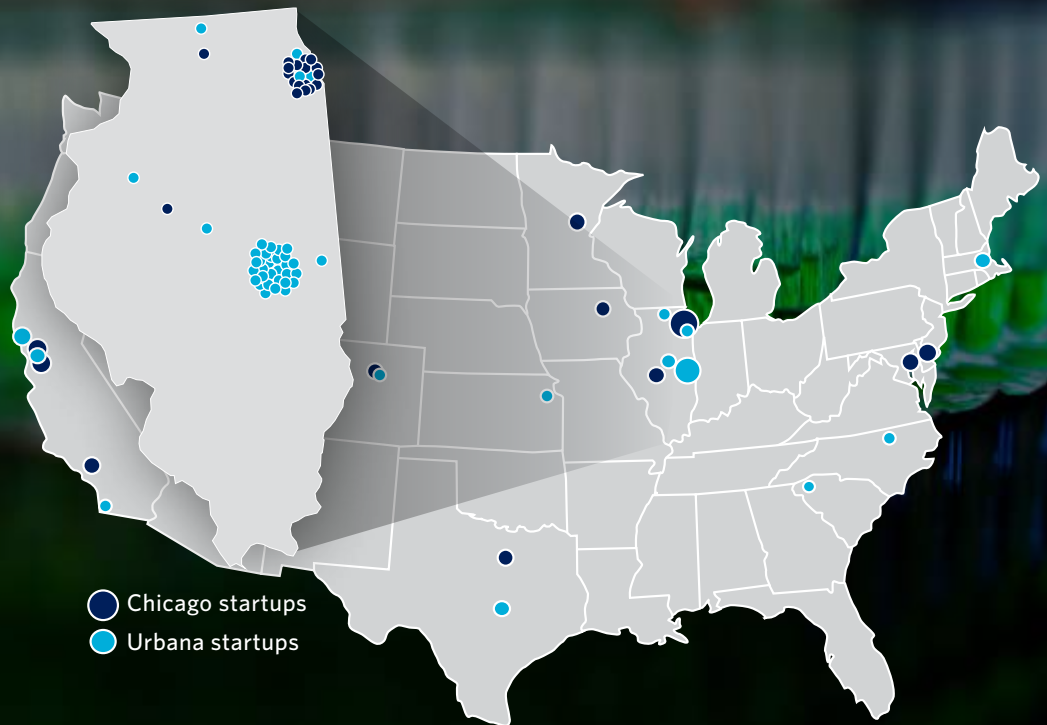
\$72,000,000+

Raised by seven Illinois start-ups in the last year

(REVOLUTION Medicines, Voxel8, Orthoaccel Technologies, Rithmio, Aptimmune, Semprius, PhotoniCare)

START-UPS ACROSS THE U.S.

There are more than **90 active start-ups** licensing University IP, including **57 in Illinois**; each one creating jobs and driving economic development.



A Brookings Institute study shows the Champaign-Urbana area has annual venture first fundings on a per capita basis in excess of 3.2 times the U.S. average.

START-UP COMPANY HIGHLIGHTS IN 2015

OrthoAccel Technologies raised \$5 million in equity financing from Healthpoint Capital and S3 Ventures. The company's AcceleDent® device was also a recipient of the GOOD DESIGN Awards Program by the Chicago Athenaeum Museum of Architecture and Design and Metropolitan Arts Press Ltd.

Based on technology developed by Dr. Jeremy Mao, AcceleDent provides up to 50% faster orthodontic treatment through the use of micropulses. **CHICAGO**

Cell Biologics has been awarded two STTR grants totaling \$563,000. The company manufactures primary cultured cells and cell culture products, including endothelial, epithelial, tumor, and stem cells, along with optimized cell culture media and other related products. **CHICAGO**

NETenergy won the \$100,000 Pritzker prize at the 2015 Clean Energy Challenge and a 2015 New Venture Challenge \$40,000 award from U Chicago. NETenergy is a thermal energy storage company, co-founded by Professor Said Al-Hallaj. The company has created a thermal battery that works much like an electrical battery, except it stores thermal energy. **CHICAGO**

Vanquish Oncology's PAC-1 cancer therapeutic has started Phase I human clinical trials at the U of I Cancer Center.

Vanquish Oncology is based on the research of Professor Paul Hergenrother, who received proof-of-concept funding to help develop the technology. The company received seed stage support from IllinoisVENTURES. **URBANA**

Aptimmune Biologics is developing mucosal vaccines for viral diseases of swine with a focus on porcine reproductive and respiratory syndrome (PRRS) and influenza. The company has received \$2.75 million in funding from Arsenal Capital Management, Fox Ventures LLC, and a group of Midwest angel investors. Based on the research of Professor Federico Zuckermann, the company is located in the EnterpriseWorks incubator and participated in the I-Start program. **URBANA**

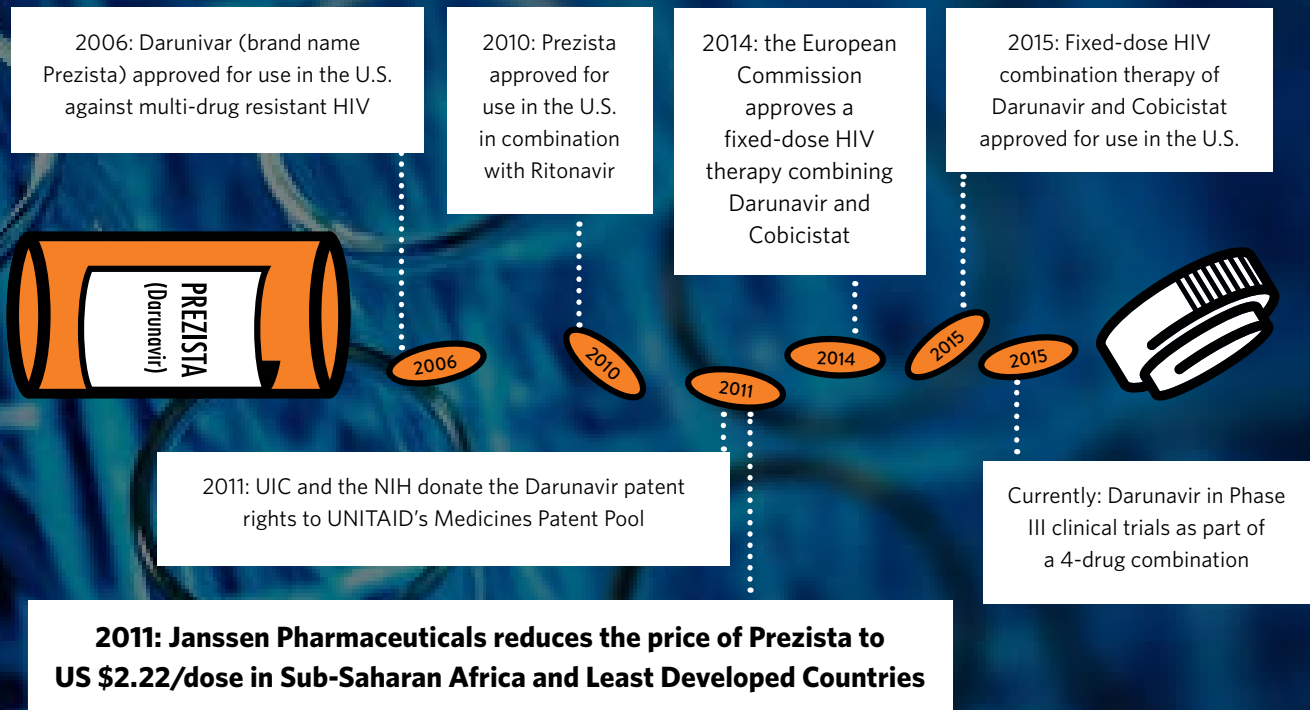
Network Perception has received SBIR Phase II funding. The company is developing firewall analysis technology for critical infrastructures. Co-founded by Professors David M. Nicol and William H. Sanders, the company is located in the EnterpriseWorks incubator and participated in the I-Start program. **URBANA**

Semprius has received a \$2.9 million grant from the U.S. Department of Energy's Advanced Research Projects Agency - Energy (ARPA-E). Semprius is a leader in developing high concentration photovoltaic solar modules. Based on the research of Professor John Rogers, the company is located in North Carolina. **URBANA**

SOCIAL IMPACT

More than **32 million people** worldwide, including 3.2 million children, **currently live with HIV/AIDS.**

An estimated **2.1 million people** are **newly infected each year.**



PREZISTA: DONATED TO UNITAID'S MEDICINES PATENT POOL

The first treatment for multi-drug resistant HIV, Prezista is the number one prescribed protease inhibitor for patients who begin a new combination HIV Therapy. The compound was developed by former UIC professor Arun Ghosh and researchers from the National Institutes of Health (NIH). Prezista is the brand name of Darunavir, a protease inhibitor preventing HIV-infected cells from producing new virus and preventing drug-resistant mutations.

UIC and the NIH donated the patent rights to Prezista to UNITAID's Medicines Patent Pool in 2011. This program grants licenses for the generic manufacture and purchase of therapeutics thereby improving access and affordability in developing countries. UIC, the NIH, and Gilead Sciences were the first organizations to donate HIV-related patents, paving the way for five more organizations. In 2012, UIC and the NIH were honored for the patent donation with a "Deal of Distinction" award from the Licensing Executives Society.

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The Medicines Patent Pool has licensed **12 antiretrovirals** and distributed **2.18 billion treatments** of generic medicines in **117 countries**.

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DEEP: PROMOTING DIABETES PREVENTION & SELF-MANAGEMENT

The Diabetes Empowerment & Education Program (DEEP) is a curriculum developed by researchers in the Midwest Latino Health Research, Training & Policy Center on the Chicago campus. The program teaches community health workers how to become peer educators on diabetes prevention and self-management. DEEP is one of only three curricula affiliated with the Centers for Medicare and Medicaid's "Everyone with Diabetes Counts" initiative and is being used by 19 different organizations.

PROOF-OF-CONCEPT FUNDING

URBANA

- \$1.08 million awarded in OTM-managed proof-of-concept funding since 2009
- More than 75 submissions representing more than 20 departments
- 26 funded projects
- 9 start-up companies
- **\$49 million in venture and angel funding**
- \$1.875 million in government SBIR/STTR funding

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“The I-POC program powerfully enabled two areas of research in my group - the development of a small molecule synthesizer and less-toxic amphotericins. Both of these projects were ‘almost there’, and then the I-POC funding played a major role in helping us get each project across the finish line for publication (Science 2015 and Nature ChemBio 2014). These two advances were exclusively licensed to REVOLUTION Medicines, a company which I co-founded with Mark Goldsmith and David Pompliano in December 2014 with \$45 M in funding from Third Rock Ventures. These technologies were foundational for the creation of this new company.”

— Martin Burke, College of Liberal Arts & Sciences, University of Illinois at Urbana-Champaign

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“Move over Silicon Valley. **Chicago has the largest percentage of female-founded startups in the world.** Roughly one out of every three (30%) Windy City tech startups was launched by a female founder, according to the 2015 Global Startup Ecosystem Ranking by Compass.co, a provider of reporting and benchmarking software. That handily beats the global average of 20%.”

— Fortune Magazine, August 2015

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CHICAGO

- **\$2.3 million awarded since 2012, including the Chancellor’s Innovation Fund which launched in 2013**
- 272 project submissions
- 36 funded projects across 24 campus centers & departments
- 22 projects participated in UIC’s POC Accelerator at EW Chicago

2015 AWARDEES

Illinois Proof-of-Concept Program (I-POC)

Managed by the Office of Technology Management, the I-POC fund is based on contributions from colleges and units across campus and matching funds from the Office of the Vice Chancellor for Research.

Spring 2015

Rohit Bhargava

Beckman Institute for Advanced Science & Technology
Next Gen Molecular Pathology

Brendan Harley

Carl R. Woese Institute for Genomic Biology
Engineered Tissue Systems

Paul Hergenrother

College of Liberal Arts & Sciences
Novel Antibiotics for Drug-Resistant Pathogens

Matthew Hudson

College of Agricultural, Consumer and Environmental Sciences
A Genetic Marker System to Reduce Variation in Soybean Cyst Nematode Resistance within Commercial Varieties

Deana McDonagh

College of Fine & Applied Arts
AmpliMy: Wheelchair Voice Amplifier

James Shriner

College of Education
IEP Quality: a Web-based Individualized Education Program Tutorial and Decision-making Support System

Douglas Smith

School of Social Work
A Peer Support Mobile Application for Friends of Emerging Adults with Alcohol Problems

Chancellor's Innovation Fund (CIF)

Managed in partnership by IllinoisVENTURES and the Office of Technology Management, the CIF program is funded by the UIC Chancellor with a \$10-million commitment over five years

Spring 2015

Shiva Shahrara

Department of Medicine
TLR5: A Novel Treatment Strategy for RA Patients

Shane Phillips

Department of Physical Therapy
Wearable Continuous Cardiovascular Sensor and Algorithm for Healthcare and Rehabilitation

Amin Salehi-Khojin

Department of Mechanical and Industrial Engineering
An Advanced Lithium-Air Battery Cell

Steven Ackerman & Vadim Gaponenko

Department of Biochemistry and Molecular Genetics
Development of a Peptide Nanoparticle Inhibitor of CCR3-mediated Eosinophilic Inflammation in Asthma

Fall 2014

Sudip Mazumder

Department of Electrical and Computer Engineering
Wide-Bandgap Optical Emitter Turn-Off (ETO) Thyristor

Mahshid Amirabadi

Department of Electrical and Computer Engineering
High Power Density Power Conversion System

Mary Jo LaDu

Department of Anatomy and Cell Biology
Novel Biomarkers for Alzheimer's Disease in Human Plasma

David Peace

Department of Anatomy and Cell Biology
Peptide Targeted Immunotherapy of Prostate Cancer

Anantha Harijith

Department of Pediatrics
PF-543, a Novel Drug to Treat Oxidative Lung Injury

Alan Kozikowski

Department of Medicinal Chemistry and Pharmacognosy
Use of 5-HT_{2c}-Agonists in Rett Therapy

CELEBRATING OUR INNOVATORS & ENTREPRENEURS

"If you have portable laboratories in places stored on the ground and ready to go, they can be used when a crisis hits to test a whole population for infectious disease or microbes when the importation of other tests or lab equipment can take a very long time to arrive."

Constantine Megardis is Chicago's 2015 **Inventor of the Year** for technology that can turn everyday materials – such as paper, plastic, metal, or glass – into portable laboratories by creating surfaces with chemical coatings to produce tracks that attract and repel water, allowing anyone with a dropper to easily test the liquids for diseases and other dangerous substances.

Barry Pittendrigh won the **Social Venture Award** at Urbana's Innovation Celebration 2015 for Scientific Animations Without Borders (SAWBO). SAWBO transforms extension information on topics such as agriculture, disease, and women's empowerment into animations which are available in more than 60 different languages.

"Our ultimate goal is to connect experts from around the world to create freely available educational content for people that live on under \$2 a day, such that they can use this knowledge to improve the quality of their lives."

innovationcelebration

2015 HONOREES

CHICAGO

Innovator of the Year: Recognizes a faculty member who has advanced their invention toward commercialization through participation in the licensing process or through entrepreneurial efforts in a start-up company based on their invention.

2015 awardee: **Mark Rasenick**, College of Medicine, for developing a blood test to diagnose depression and ascertain whether a patient's current treatment is working. Dr. Rasenick founded Pax Neuroscience to bring this blood test to the marketplace.

Inventor of the Year: Recognizes a faculty member who has developed intellectual property that has the potential for significant societal impact.

2015 awardee: **Constantine Megaridis**, College of Engineering, for the development of a coating technology that may be used to create portable laboratories, allowing anyone in the field to quickly identify harmful substances and dangerous pathogens on the spot.

OTM Innovation Prize at the College of Engineering Annual Senior Design Expo: The College of Engineering Annual Senior Design Expo showcases the ingenuity of the College's outstanding seniors. These students are challenged to apply their knowledge to solve real world problems and present their projects to a judging panel that includes representatives from OTM.

2015 awardees: **David Foss, Michael LaDucher, and William White** for their work on an "Endoluminal Sewing Machine Mechanism" for use in laparoscopic procedures.

Innovate@UIC Innovation Award at the College of Pharmacy

Research Day: Showcases the research of Pharmacy students and postdoctoral trainees to faculty members, staff, alumni, and industry leaders.

2015 awardees: **Rasika Phasalkar, Joo-Won Nam, Shao-Nong Chen, James McAlpine, Ariene Leme, Cristina Vidal, Ana Bedran-Russo, and Guido Pauli** for their work on "Dimeric and Trimeric Proanthocyanidins from Grapes: A Promising Source for Dental Biomaterials."

URBANA

Innovation Celebration: Recognizes the entrepreneurial spirit in the community and on campus. Awardees are recognized for contributions in several categories, including economic impact, social entrepreneurship, and student start-ups. The Office of Technology Management is proud to partner with event organizers to host the Innovation Transfer award.

Innovation Transfer Award: Recognizes an individual or group from the University of Illinois whose research has resulted in either a discovery or a work with the potential for significant societal impact.

2015 awardee: **Kenneth Suslick**, College of Liberal Arts & Sciences, for his work on the chemical effects of ultrasound and chemical sensing specifically, the optoelectronic nose. The start-up Metabolomx is building on his research to develop a device that can identify lung cancer from breath.

Other University of Illinois awardees:

Social Venture Award:

Barry Pittendrigh, College of Liberal Arts & Sciences, for Scientific Animations Without Borders

Student Startup Award:

Rithmio Inc., for platform software that integrates with motion-sensing devices such as wearables or smartphones to learn, track, and analyze gestures.

EVENTS TO ENGAGE WITH STAKEHOLDERS

More than

160



COMPANIES



GOVERNMENT
ORGANIZATIONS



INVESTORS



UNIVERSITIES

attended Urbana OTM events in fiscal 2015.

“As chair of the battery-research and poster session at the 2014 JCESR Energy-Storage Symposium, I engaged industrial stakeholders of the electric grid with researchers of emerging storage solutions from academia and national laboratories. This dialogue is needed to spur on the development of impactful technologies and to translate research results into industry.”

— Kyle C. Smith, Assistant Professor, Mechanical Science and Engineering, University of Illinois at Urbana-Champaign

URBANA OTM HOSTED EVENTS IN 2015



SHARE THE VISION: SAN FRANCISCO NOVEMBER 18, 2014

As part of the annual Silicon Valley Roundtable Dinner, organized by the Foundation and the Illini Center West, six faculty entrepreneurs presented their research to an audience of corporate and venture capital representatives and University alumni.

Silicon Valley was well represented with attendees from: Accenture, Amgen Ventures, Apple, Applied Ventures, Braemer Energy Ventures, Claremont Creek Ventures, Dell, GE Ventures, Genentech, Intel, Jump Capital, Kaiser Permanente Ventures, Konica Minolta, Landmark Ventures, Lux Capital & Lux Research, New Enterprise Associates, Norwest Venture Partners, Novo Ventures, Phoenix Venture Partners, Presidio Ventures, Roche, Third Rock Ventures, Samsung, and more.

Share the Vision 2015 is being held on campus on October 8, 2015.



TECHNOLOGY TRANSFER SUMMIT NORTH AMERICA JULY 20-21, 2015; CHICAGO, ILLINOIS

TTS North America is the US edition of the TTS Global Initiative (USA, Europe, Australia, Asia), a unique meeting that brings together thought leaders from all of the different stakeholder groups in early-stage life sciences and biotech for an interactive, moderated round-table summit of expert led panels.

The Urbana Office of Technology Management was proud to partner with UIC OTM, iBIO, ISTC, Northwestern, and PROPEL to bring this meeting to Chicago for all of the Midwest's biotech stakeholders.

This year's event was well attended by universities, State of Illinois organizations, start-up companies, leading pharma and biotech executives, and top investors.



INTEGRATING ENERGY STORAGE ONTO THE GRID: A JCESR SYMPOSIUM OCTOBER 24, 2014; CHAMPAIGN, ILLINOIS

The Joint Center for Energy Storage Research (JCESR) was established through a \$120 million investment from the Department of Energy to create an innovation hub that will enable major advances in battery and energy storage.

The Urbana Office of Technology Management was proud to cohost the first in a series of regional partner events to showcase JCESR research programs and discuss current issues. This event, which was covered in the *Chicago Tribune*, brought together academic and industry perspectives on the challenges and opportunities for integrating battery storage onto the electrical grid, and included panel sessions, research presentations, research posters, and facility tours.

ENGAGING WITH THE CAMPUS COMMUNITY

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The Urbana OTM worked with **56 different departments & units** in 2015 and hosted, co-hosted, or participated in **more than 50 campus events & presentations**.

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ASSIST

POC Accelerator
SBIR/STTR Consulting
Consulting by
Innovate@UIC



INFORM

SBIR/STTR Education
Start-Up Series
Hi-Tech
Commercialization
Workshops



INFUSE

CIF Proof of Concept
Awards Program
CIF Seed & Equity
Investments

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Innovate@UIC coordinates activities around the Chicago campus that provide education and support for UIC faculty and students looking to commercialize a technology, start a venture, or fund a start-up. **Innovate@UIC has held more than 80 seminars attended by more than 600 people on the Chicago campus since 2014.**

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PROGRAMS SUPPORTING ENTREPRENEURS

UICENTRE: ENABLING ACADEMIC DRUG DISCOVERY

The UICentre on the Chicago campus combines chemical, pharmaceutical, and translational knowledge from leading researchers at UIC to bring about biomedical discoveries. Working with the Office of Technology Management, UICentre selects projects based on recently disclosed technologies. There are currently 13 projects across the fields of oncology, neuroscience, cardiopulmonary, autoimmune, and anti-infectives.

PROOF-OF-CONCEPT (POC) ACCELERATOR

The POC Accelerator within EnterpriseWorks Chicago provides consulting teams to recipients of Chancellor's Innovation Fund awards. These teams, comprised of entrepreneurs-in-residence, OTM technology managers, graduate students, and post-doctoral talent, conduct an objective analysis of market viability and provide a commercialization plan, along with entrepreneurial education. Twenty-two Chancellor's Innovation Fund recipients have participated in the POC Accelerator.

MAD LAB: A MULTI-DISCIPLINARY PLATFORM FOR EARLY-STAGE DEVELOPMENT

The Innovation Center's Medical Accelerator for Devices Laboratory (MAD Lab) assists entrepreneurs on the Chicago campus by aiding in product design, prototyping, networking, business viability consulting, and presentation design for internal and external seed funding. Chicago OTM has partnered with MAD Lab to provide IP landscape analyses and, when appropriate, IP protection to faculty and student inventors of medical devices.

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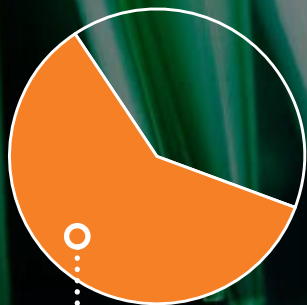
In fiscal 2015, **18 University-affiliated start-ups** from both campuses participated in the **Chicago Innovation Mentors** program, which matches technology-based ventures with experienced mentor teams.

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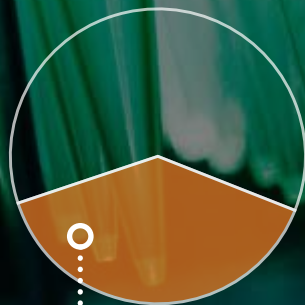
PATENT PORTFOLIO MANAGEMENT

The University of Illinois is ranked #18 on the list of
“TOP 100 WORLDWIDE UNIVERSITIES
GRANTED U.S. UTILITY PATENTS”

released by the National Academy of Inventors (NAI) and the
Intellectual Property Owners Association (IPO) .



In 2015, the Urbana campus was reimbursed for **60%** of patent expenses.



The average reimbursement for the 6 years prior was **39%** .



In 2015, the Chicago campus was reimbursed for **42%** of patent expenses.



The average reimbursement for the 6 years prior was **19%**.

EFFICIENT & COST-EFFECTIVE

Net Patent Costs: the net cost of protecting intellectual property after reimbursements from licensees are deducted. Careful management has resulted in significant decreases in patent costs.

	2009 NET	2015 NET	% CHANGE
CHICAGO	\$1,297,650	\$725,711	56% DECREASE
URBANA	\$2,304,814	\$1,414,715	61% DECREASE

PATENT ATTORNEY ACCOUNT MANAGEMENT IN FISCAL 2015

Chicago OTM worked with 5 IP law firms under a new, flat-fee arrangement, which makes predicting and budgeting for patent expenses easier. The flat-fee arrangements allow our offices to compare law firms side-by-side, enabling us to make better choices on which law firms to utilize – saving the University money. Urbana OTM secured across-the-board cost reductions with the law firm we utilize most often, and in the coming year we will work with other law firms to realize similar savings.

COVERSHEET PROVISIONAL APPLICATIONS

Coversheet provisional applications (CPAs) offer a way to quickly file patents “in-the-nick-of-time.” Chicago OTM has been able to reduce the number of CPAs by 50%, replacing them with higher-quality, in-house, fully-drafted provisional applications.

SUPPORTING THE RESEARCH ENTERPRISE

“ I worked closely with the Office of Technology Management to protect the intellectual property and license the technology. I got some great support from Enterprise Works Chicago (EWC) with some of the initial market research for the company. I ended up hiring several of the business students at UIC from this team to help get the company launched. The folks at the OTM and EWC have been helpful, flexible and professional in all of our working together.”

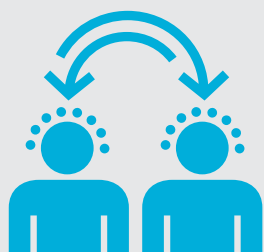
Said Al-Hallaj, Adjunct Professor of Chemical Engineering, University of Illinois at Chicago and founder of NETenergy, a thermal energy storage company.

Randall Sandone, Applied Research Institute at the University of Illinois at Urbana-Champaign, commenting on the Critical Infrastructure Resilience Institute (CIRI) a \$20 million grant from the U.S. Department of Homeland Security.

“During the congratulations phone call from DHS, your office [The Office of Technology Management] and its model were specifically identified as a key factor in our selection as lead for the Critical Infrastructure Resilience Center of Excellence. This win is a great triumph for the University and you were instrumental in bringing it about.”

BEYOND LICENSING

THE URBANA AND CHICAGO OFFICES HANDLE MANY IP-RELATED AGREEMENTS IN ADDITION TO LICENSES AND OPTIONS. THESE AGREEMENTS HELP FACILITATE RESEARCH COLLABORATIONS AND **LAY THE GROUNDWORK FOR FUTURE TECHNOLOGY TRANSFER ACTIVITY.**



More than **220 IP-related agreements** were managed by the Offices of Technology Management in Fiscal 2015. These include material transfer (Urbana), confidentiality, evaluation, and inter-institutional agreements.

The Offices also work with KeraFast, an online marketplace that makes it easier for faculty to transfer research materials to non-commercial entities. In 2015, **KeraFast handled 73 transactions** for the University.

Negotiating the IP terms in major sponsored research agreements and large-scale proposals for Federal funding is another significant role. Some of the initiatives we have been involved with this year include:

- **The Critical Infrastructure Resilience Institute (CIRI):** \$20 million/Department of Homeland Security **URBANA**
- **The Digital Manufacturing and Design Innovation Institute (DMDII):** \$70 million/Federal funding, including IP terms in the original proposal and, in 2015, the IP management plan for individual submissions to the Institute **URBANA**
- **The Engineering Research Center for Power Optimization in Mobile Electronics (POETS):** \$18.5 million/NSF **URBANA**
- Commercialization partnership with Syngenta in **Realizing Increased Photosynthetic Efficiency (RIPE):** \$25 million/Bill and Melinda Gates Foundation **URBANA**
- IP negotiations for a campus-wide research affiliation agreement with **Carle Foundation Hospital URBANA**
- **International Institute for Carbon Neutral Energy Research (I2CNER):** launched by the Japanese government's Ministry of Education, Culture, Sports, Science and Technology **URBANA**
- **Centers for Advanced Diagnostics and Experimental Therapeutics in Lung Disease Stage II (CADETS):** \$3.3 million/National Heart, Lung and Blood Institute **CHICAGO**

OPPORTUNITIES FOR STUDENTS

“The work I did opened my eyes to an entrepreneurial path, which landed me in two different nationally renowned start-up accelerators inside of 1871, Chicago’s prominent digital startup hub. From there, thanks to the help of the OTM network, I landed a full time position as the first employee of UI LABS. I also now regularly meet with other former OTM interns who have jobs in the Chicago technology and innovation space, and together, we’re helping each other exponentially grow our professional networks.”

Marty Malone,
former OTM Urbana
Communications
Intern, currently
Communications
and Outreach
Coordinator, UI Labs

Farnaz Bakhshi, PhD,
former OTM Chicago
Technology Analyst,
currently Licensing
Associate, Caltech
Technology Transfer and
Corporate Partnerships

“As a screener at OTM, under the direction of Wade Green, I learned an immense amount about the world of technology transfer. As a complete novice, the team patiently taught me everything I needed to know about patents, licenses, marketing, etc. The knowledge I gained at OTM led to my current position at Caltech’s office of technology transfer as a Licensing Associate. I will always be grateful to OTM for giving me a shot and helping me turn technology transfer into a wonderful career!”

HELPING TRAIN THE NEXT GENERATION

Each OTM hosts intern programs that train undergraduate, graduate, and doctoral students in IP and market analysis and gives them experience working directly with faculty on a wide range of technologies. We also offer marketing, communications, and IT intern opportunities. Students join us from the Colleges of Law, Business, Liberal Arts & Sciences, Media, Engineering, and more. Their contributions to our offices are invaluable, and we are proud of the positive influence we have on their careers.

47 consulting students have worked with companies at EnterpriseWorks Chicago in the past 18 months. They have gone on to work in consulting firms, start-ups, and industry.



30+ OTM interns have gone on to work in technology transfer, IP law, and economic development positions across the country.



OUR INTERNS

URBANA

Commercialization Analysts: Sarah Craig, Carlos Duarte-Guervara, Harini Iyer, Adi Makhija, Fatimeh Pahlavan, Zachary Scott, Sylvia Shen, Zach Wiersma

Patent Fellow: Ismail Cem Kuru

Communication & Marketing Interns: Sarah Foster, Samantha Holt, Aileen Nolan

CHICAGO

Technology Analysts: Lara Ansari, Vaishnavi Kondapalli, Joel Thomas, Tiffany Lai, Julia Zelenakova, George Michael

Patent Intern: Ann George

Financial Analyst: Zhe Du

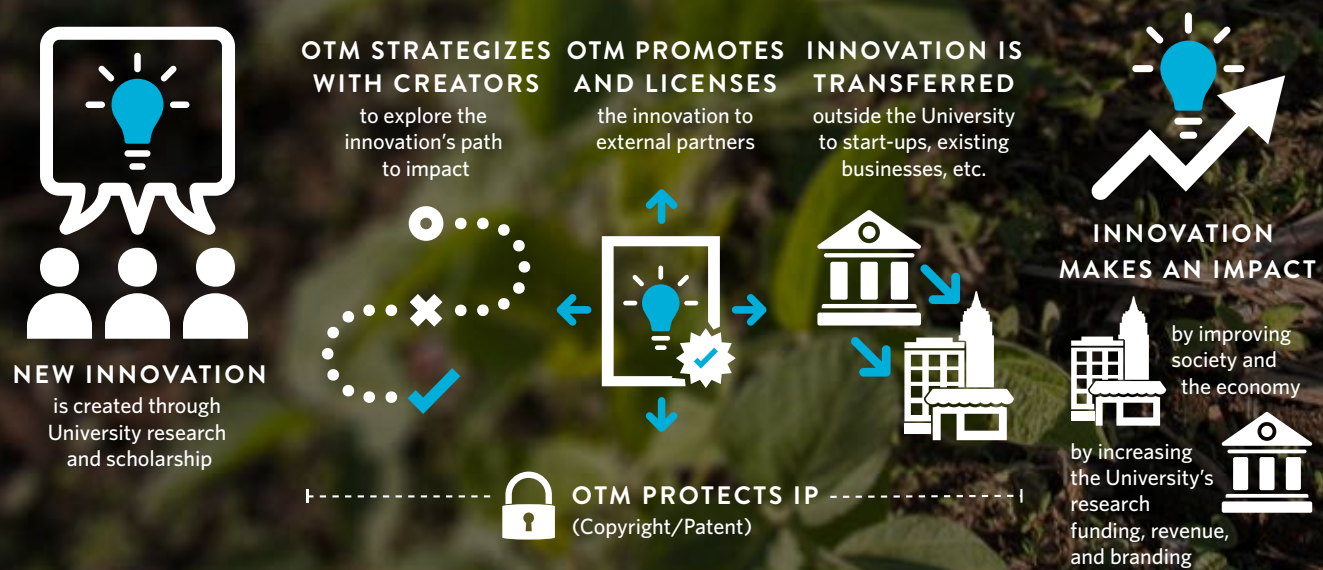
Office Assistants: Karla Perez, Jesus Perez

LOOKING AHEAD

“The University’s commitment to innovation and economic development over the past 15 years has resulted in a robust system of resources that has had significant impact. In the year to come we will focus on expanding our network through strategic alignments with State and industry stakeholders so that we can leverage the assets we already have in place for the further good of the region.”

Lawrence Schook,
Vice President for
Research, University
of Illinois

RESEARCH → TRANSFER → IMPACT



INITIATIVES IN 2016

Ready-to-sign
licenses available
online

Intel subscription
agreement

University-wide
innovation
showcase

Online
disclosure
portal

Campus
awareness
survey

Illinois Industry
IP Initiative:
matching State
industry needs
with University
innovations

Illinois
Business SBIR/
STTR Program

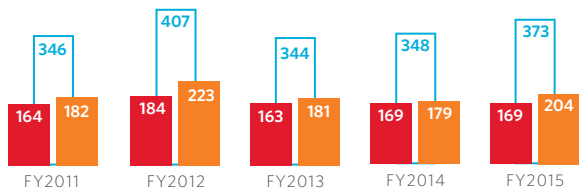
FISCAL 2015 RESULTS

FISCAL 2015 TOTALS	CHICAGO	URBANA	TOTAL
DISCLOSURES	169	204	373
U.S. PATENT APPLICATIONS FILED	107	192	299
U.S. PATENTS ISSUED	21	76	97
LICENSES & OPTIONS	51	32	83
START-UPS	5	10	15
ROYALTIES EARNED (MIL)	\$27.55	\$6.19	\$33.74

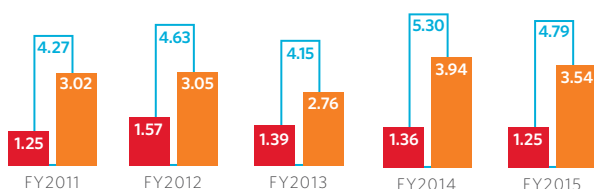
The **University of Illinois at Springfield** disclosed one technology in Fiscal 2015; Urbana OTM has filed a U.S. patent application and is **working with the inventors on commercialization.**

FIVE YEAR HISTORY: FISCAL 2011 - FISCAL 2015

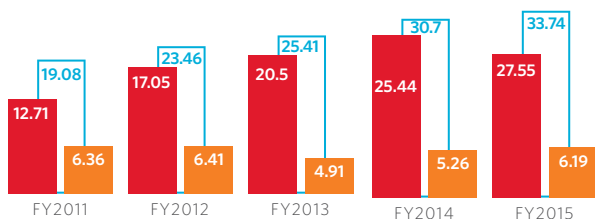
Invention Disclosures



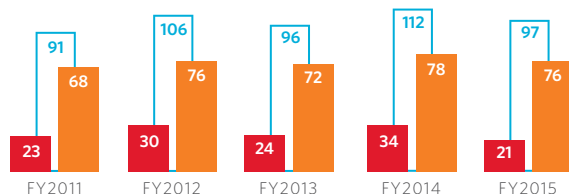
Patent Costs (\$ MILLIONS)



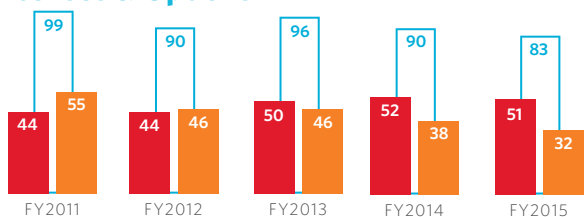
Royalties Earned by Campus (\$ MILLIONS)



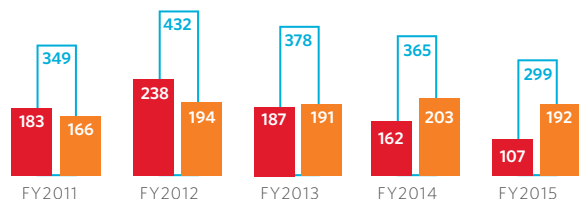
U.S. Patents Issued



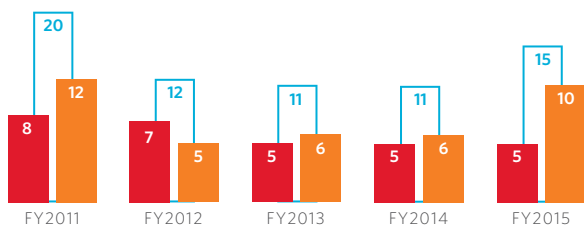
Licenses & Options



U.S. Patents Filed



Number of Start-Ups



■ CHICAGO
 ■ COMBINED
 ■ URBANA-CHAMPAIGN

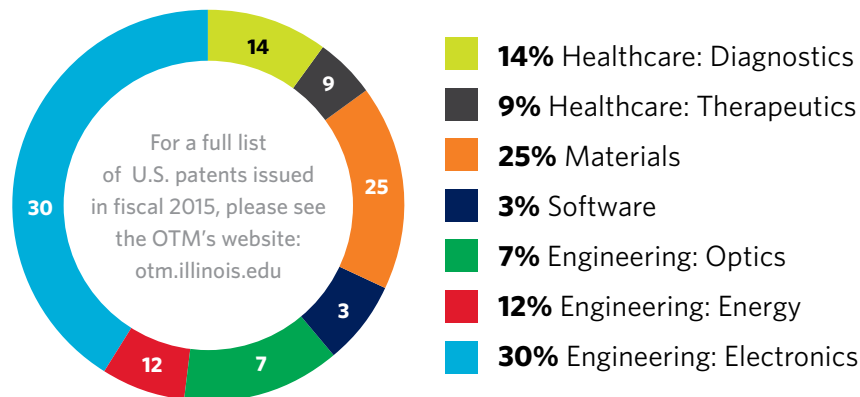
URBANA FISCAL 2015 SUMMARY

College/Department/Unit	Disclosures	U.S. Patent Applications Filed	U.S. Patents Issued	Licenses & Options
Campus Total	204	192	76	32
College of Agricultural, Consumer, and Environmental Sciences	21	13	2	5
College of Applied Health Sciences				1
College of Education	3			
College of Engineering	124	111	61	17
College of Fine & Applied Arts	4			1
College of Liberal Arts & Sciences	44	73	24	5
College of Medicine	1	3		
College of Veterinary Medicine	1	4		
Beckman Institute for Advanced Science & Technology	20	30	19	3
Institute for Genomic Biology	7	11	4	
National Center for Supercomputing Applications	4			4
University of Illinois at Springfield	1	1		

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.

PATENT PORTFOLIO SNAPSHOT AND ROYALTIES

FISCAL 2015 ISSUED U.S. PATENTS BY CATEGORY



43%

of U.S. patents issued to campus in fiscal 2015 have been licensed or optioned.

ROYALTIES EARNED: \$6,193,357

- Non-University Share: \$18,892
- Patent Expense Reimbursement: \$2,130,059
- Net Available for Distribution: \$4,562,492

ACTUAL DISTRIBUTIONS

- Inventors' Share: \$931,999
- University Share
 - » Unit/College: \$1,317,009
 - » OTM Cost Recovery: \$654,344

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 ROYALTY GENERATING TECHNOLOGIES

T-Cell Receptors: technology for rapid selection and optimization of T-cell receptors for therapeutics

Native Oxide: semiconductor technology used in laser printers, fiber optic communications, microelectronic devices, and more

Wheat Lines: being produced on farms across the eastern United States

URBANA START-UPS LICENSED IN FISCAL 2015

EP PURIFICATION ●

Manufacturing environmentally sound systems for the purification of water and air. Based on microcavity plasma technology developed by J. Gary Eden from the College of Engineering, the company, which is located in the University's EnterpriseWorks incubator, was awarded the Grand Prize for Clean Energy Entrepreneurship at the 2014 Clean Energy Trust Challenge. www.ep-pure.com

ILLIAC SOFTWARE ● ● ●

Commercializing the music theory app Harmonia, which allows music content to be created, edited, searched, annotated, automatically analyzed and automatically graded, all within an elegant, user-friendly interface. Based on the research of Heinrich Taube, from the College of Fine & Applied Arts; Illiac Software has received a Phase I STTR grant of \$225,000. The company is located in Champaign, Illinois. www.harmonia.illiacsoftware.com

INPRENTUS ●

Commercializing an innovative dual-atomic microscope scribing technology, which is a technique for performing nano-scale lithography via plastic deformation of metallic surfaces. Based on the research of Peter Abbamonte and Shiv Kapoor, both from the College of Engineering, the company has received funding from Serra Capital II and is located in the University's EnterpriseWorks incubator. www.inprentus.com

INTELINAIR

Delivers actionable intelligence from aerial data for quick decision making in mission-critical applications. IntelinAir's SafeSmart technology has been rigorously tested by such organizations as NASA, the U.S. Air Force, and the U.S. Navy. Based on the research of Naira Hovakimyan from the College of Engineering, the company is located in the University's EnterpriseWorks incubator. www.intelinair.com

PHOTONICARE ● ● ●

Developing an improved handheld imaging tool that will enable physicians to quickly and accurately diagnose middle ear infections during routine examinations. Based on the research of Stephen A Boppart, from the College of Engineering and the Beckman Institute for Advanced Science and Technology. The company has been awarded a \$1.5M NIH SBIR Phase II grant and a grant from the National Capital Consortium for Pediatric Device Innovation which will be used to conduct a pilot clinical study. PhotoniCare is located in the University's EnterpriseWorks incubator. www.photonicareinc.com

REVOLUTION MEDICINES ● ● ●

Discovering and developing new drugs, the company's first drug candidates are innovative small molecules that exploit and improve upon the properties of amphotericin B, a powerful, broad-spectrum antifungal compound found in nature. Based on the research of Martin Burke, from the College of Liberal Arts & Sciences. The company was founded with a \$45 million series A investment from Third Rock Ventures and is headquartered in Redwood City, California. www.revolutionmedicines.com

URBANA START-UPS LICENSED IN FISCAL 2015

RITHMIO ●●

Building a platform for gesture recognition and control using software that integrates with any motion-sensing device to learn, track and analyze gestures. Rithmio raised a \$3 million seed round of financing co-led by KGC Capital and Intel Capital. Co-founded by Prashant Mehta and Adam Tilton, from the College of Engineering, the company has offices in the University's EnterpriseWorks incubator and Chicago, Illinois.
www.rithmio.com

VERIFLOW SYSTEMS ●●

Developing a new approach to realize highly secure and dependable computer networks. Based on the research of founders Brighten Godfrey, Matthew Caesar, and Ahmed Khurshid, from the College of Engineering. The company is partnering with Archer Daniels Midland to install a Veriflow product in one of ADM's corn-processing facilities, and is backed by a strong team of investors, including New Enterprise Associates (NEA). Veriflow has locations in the University's EnterpriseWorks incubator and in Silicon Valley.
www.veriflowsystems.com

VOXEL8

Creating the world's first multi-material 3D printer for fabricating embedded electronics and other novel devices. The company's disruptive platform enables designers and engineers to integrate form and function in 3D printed objects. Voxel8 recently announced \$12 million in a Series A financing round co-led by Braemer Energy Ventures and Arch Venture Partners. The company has been named "one of the 50 smartest companies of 2015" by the *MIT Technology Review*. Based on the research of founder Jennifer Lewis, formerly with the College of Engineering, the company is headquartered in Somerville, MA.
www.voxel8.co

WAYMARK SYSTEMS

Enabling stakeholder alignment in complex systems by using new methods to visualize alignment and misalignment that enables projects to be responsive to stakeholders' shared and separate interests. Based on the research of co-founder Joel Cutcher-Gershenfeld, from the School of Labor and Employment Relations and the National Center for Supercomputing Applications. The company is located in the University's EnterpriseWorks incubator.
www.waymarksystems.org

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The University's numerous entrepreneurial programs and resources are helping our start-ups launch strong. These include:

- Illinois Proof-of-Concept Funding
 - NSF I-Corps at Illinois
 - I-Start
 - IllinoisVENTURES
-

CHICAGO FISCAL 2015 SUMMARY

College/Department/Unit	Disclosures	U.S. Patent Applications Filed	U.S. Patents Issued	Licenses & Options
Campus Total	169	107	21	51
College of Applied Health Science	4	1		1
College of Architecture, Design & the Arts	2			
College of Dentistry	12	3	1	3
College of Engineering	60	38	5	6
College of Liberal Arts & Sciences	23	5		4
College of Medicine	83	45	12	19
College of Medicine - Peoria	1		1	
College of Medicine - Rockford	1			1
College of Nursing	1		1	
College of Pharmacy	12	22	3	4
School of Public Health	2			
College of Social Work				15
Innovation Center	6	2		

Note: As a result of 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 may be counted multiple times, once for each associated college or unit.

CHICAGO START-UPS LICENSED IN FISCAL 2015

ADAPTAE

Adaptae is a biopharmaceutical company focused on the development of therapeutics targeting cancer stem cells. Using a patent-pending technology exclusively licensed from UIC, Adaptae aims to treat cancer by focusing on the cells responsible for recurrence and metastasis. The company also plans to offer diagnostic assays and research tools for further study of cancer stem cells.

ACTUATE THERAPEUTICS

Actuate Therapeutics develops novel compounds that target Glycogen Synthase Kinase 3 (GSK3), a protein associated with carcinomas such as glioblastoma, ovarian, breast, and pancreatic cancers, as well as neurodegenerative diseases such as Alzheimer's disease, bipolar disorder, and schizophrenia. GSK-3B is implicated in chemo- and radioresistance in tumor cells. Actuate has developed a lead compound, 9-ING-41, which has already completed promising preclinical studies showing a complete regressions of glioblastoma and significant increases in overall survival rates.

www.actuatetherapeutics.com

AURORA MICROARRAY SOLUTIONS

Aurora Microarray Solutions works with researchers and industry to design custom microarray diagnostics and instrumentation from initial concept through data analysis and reporting. Their development program includes working together with the researcher in printing the novel substrates onto slides, optimizing the processing and imaging protocols to reduce human intervention, and using proprietary software algorithms to increase accuracy and sensitivity. Special emphasis is put on instrumentation to provide a very cost effective turnkey

system. In some cases, these new diagnostics are ready to go to the marketplace for use by other research laboratories. Aurora Microarray Solutions has worked with researchers both at University and National Laboratories as well as commercial industry.

www.amsarray.com

LAUREL THERAPEUTICS

Laurel Therapeutics is focused on working with a small peptide inhibitor, developed at UIC, which has shown remarkable promise for treating sepsis -- an often deadly condition for which there are few treatment options. Animal studies have found this inhibitor to significantly decrease the vascular permeability associated with medical shock, a lethal complication affecting patients with sepsis. Laurel Therapeutics has successfully obtained patents in the US and global markets and is in the process of transitioning this peptide into clinical trials.

TRIANGLE THERAPEUTICS

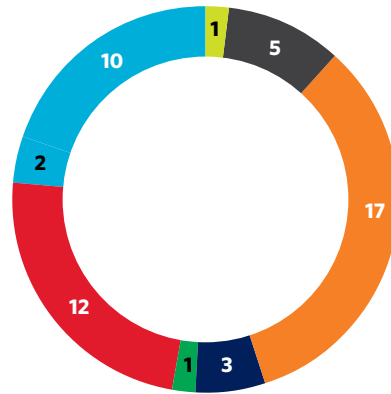
Triangle Therapeutics develops deoxycytidine kinase (dCK) inhibitors for treatment of Acute Lymphoblastic Leukemia (ALL) and as well as other oncological diseases. Preclinical data have shown promising results and researchers hope that further development of these inhibitors will open the door to a wide range of therapeutic applications for other diseases

CHICAGO LICENSES & OPTIONS

51

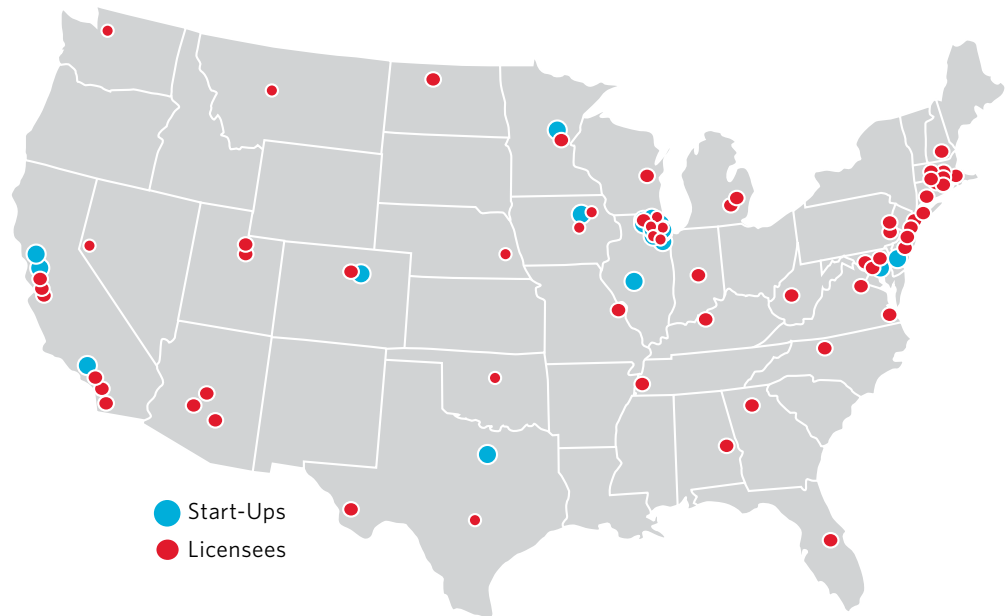
licenses &
options in
fiscal 2015

FISCAL 2015 LICENSES & OPTIONS BY CATEGORY



- 1% Agriculture
- 5% Civil and Industrial Engineering
- 17% Copyrighted Material
- 3% Diagnostic
- 1% Medical Device
- 12% Research Tool/Reagent
- 2% Software Applications
- 10% Therapeutic

ALL ACTIVE START-UPS & LICENSEES BY LOCATION



CHICAGO ROYALTIES & ROYALTY DISTRIBUTION

ROYALTIES EARNED: \$27,553,537*

- Non-University Share: \$10,224
- Litigation Expense Reimbursement: \$39,196
- Patent Expense Reimbursement: \$524,722
- Previously Undistributed: \$485,643
- Net Available for Distribution: \$27,465,038

**includes litigation reimbursement from the NIH*

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.

ACTUAL DISTRIBUTIONS

- Inventors' Share: \$9,836,859
- University Share
 - » Unit/College: \$6,975,163
 - » OTM Cost Recovery: \$1,250,000

TOP THREE ROYALTY GENERATING TECHNOLOGIES

Multidrug Resistant Retroviral Protease Inhibitors: a compound known as Prezista, which is used to treat HIV-AIDS

TICE BCG: an effective treatment and prophylaxis of carcinoma in situ (CIS) of the urinary bladder, and a prophylaxis for papillary tumors following transurethral resection

Intensified Algebra: a coherent program that incorporates into algebra instruction areas that historically reside outside of the domain of algebra class but are fundamental to the students' success

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The Offices of Technology Management are responsible for managing the intellectual property generated by research and educational activities at the University of Illinois.

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