

Reported to the Board of Trustees  
July 13, 2017

# University of Illinois at Urbana-Champaign

## Performance Metrics

RESEARCH PERFORMANCE UPDATES BY:  
UNIVERSITY OFFICE FOR PLANNING AND BUDGETING  
JUNE 9, 2017

REPORTED BY:  
CHANCELLOR ROBERT J. JONES  
JULY 13, 2017

# Peer Group



## **University of Illinois at Urbana-Champaign\***

University of California - Berkeley\*

University of California - Los Angeles

University of California - San Diego

University of Michigan - Ann Arbor

University of North Carolina - Chapel Hill\*\*

University of Texas - Austin\*\*\*

University of Washington

University of Wisconsin - Madison

University of Virginia

\* No medical center.

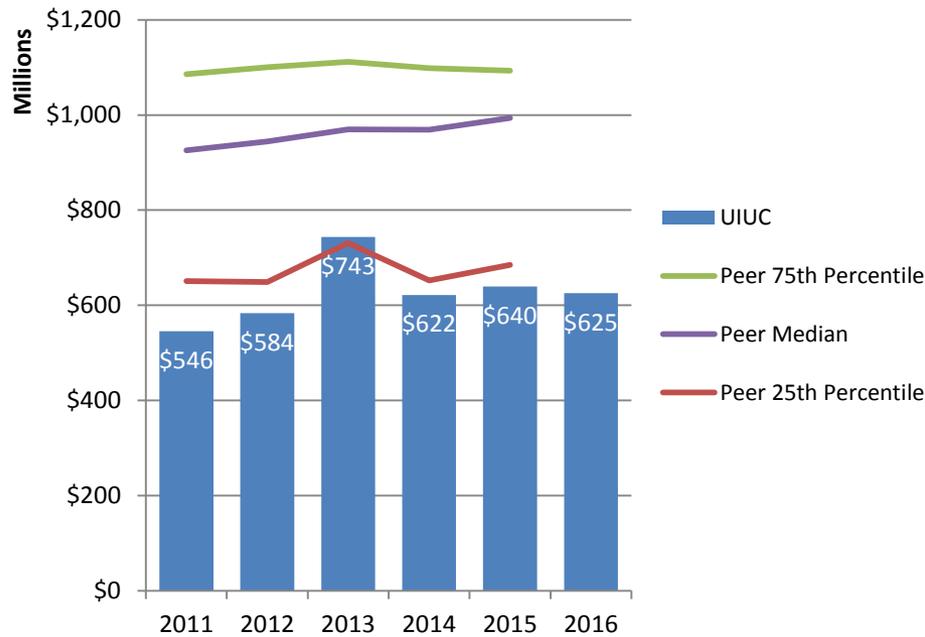
\*\* Medical center affiliated with the university, but owned by the state.

\*\*\* An affiliated medical center is under construction and will begin operations in 2017.

# Research Performance

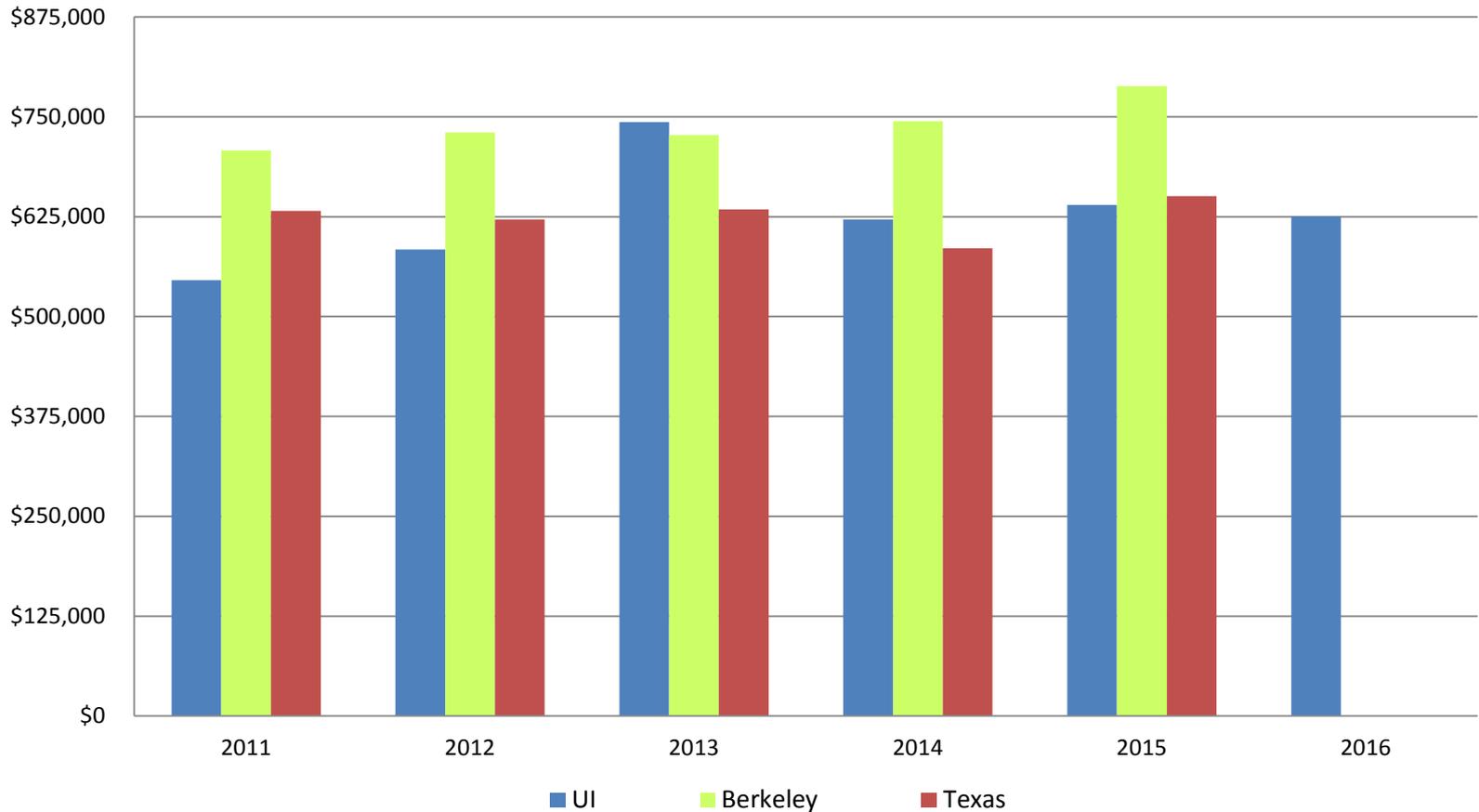


# Total Research and Development Expenditures\* FY 2011 – FY 2016



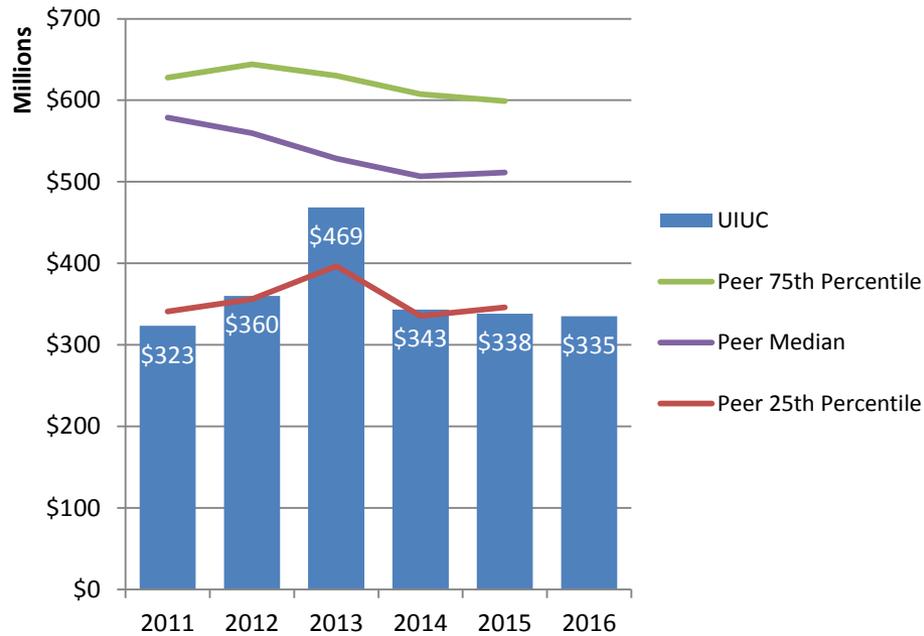
\* As reported to the NSF Survey of Research and Development Expenditures. FY 2013 increase includes \$120 million related to the construction of Blue Waters. FY 2016 peer data not available.

# Total Research and Development Expenditures\* Among Peers Without Medical Schools FY 2011 – FY 2016



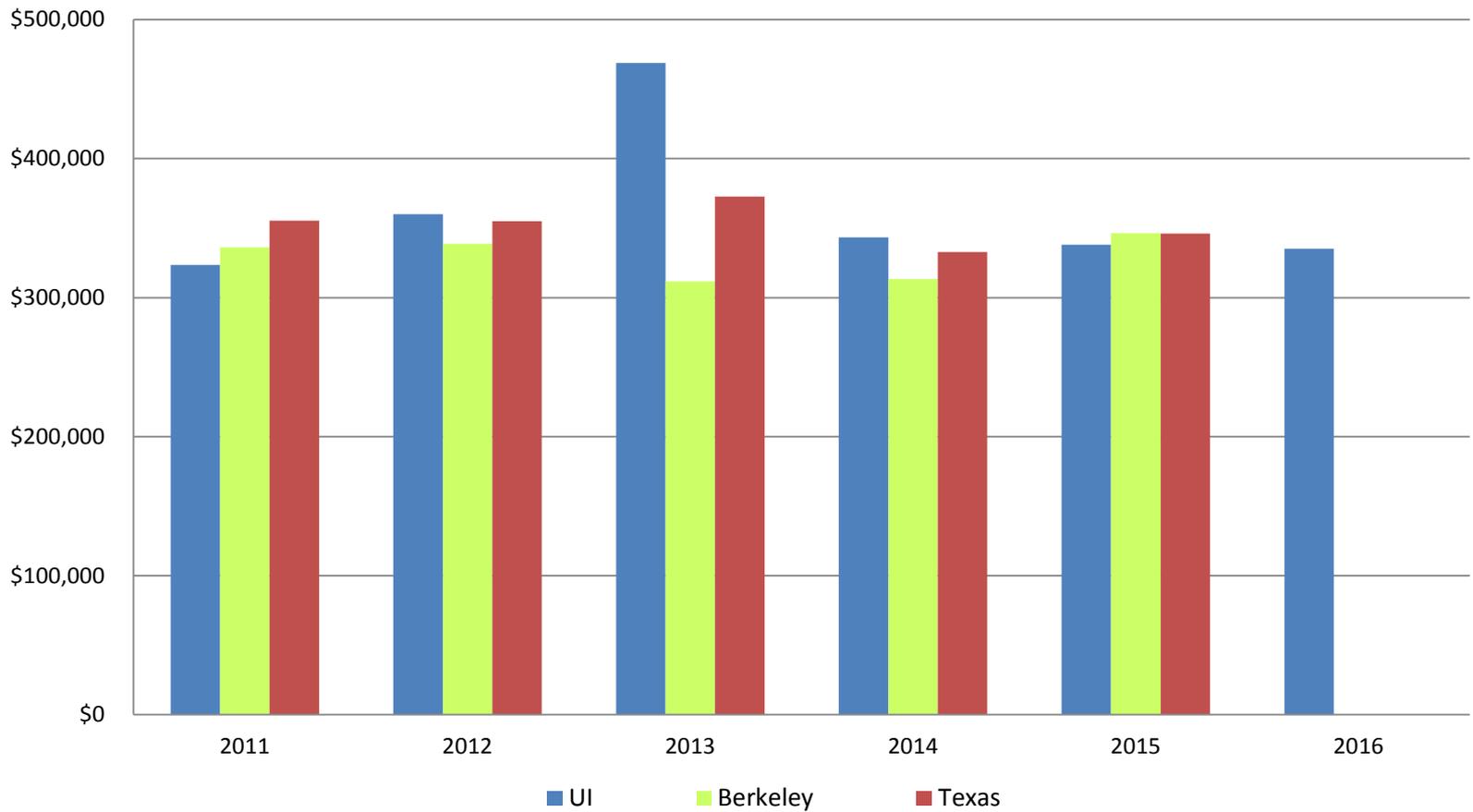
\* As reported to the NSF Survey of Research and Development Expenditures. FY 2013 increase includes \$120 million related to the construction of Blue Waters. FY 2016 peer data not available.

# Total Federal Research and Development Funding\* FY 2011 – FY 2016



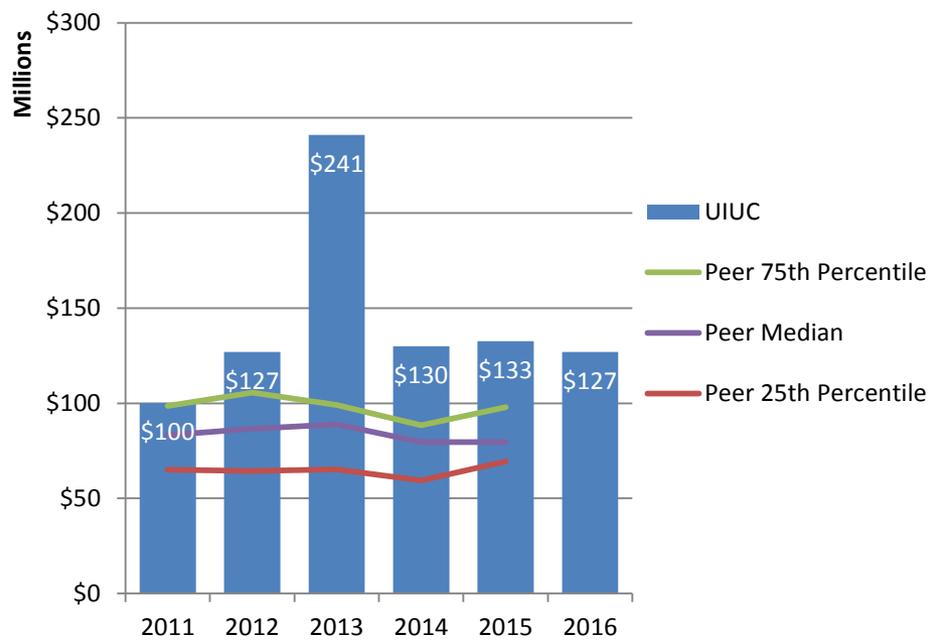
\* As reported to the NSF Survey of Research and Development Expenditures. FY 2013 increase includes \$120 million related to the construction of Blue Waters. FY 2016 peer data not available.

# Total Federal Research and Development Funding\* Among Peers Without Medical Schools FY 2011 – FY 2016



\* As reported to the NSF Survey of Research and Development Expenditures. FY 2013 increase includes \$120 million related to the construction of Blue Waters. FY 2016 peer data not available.

# National Science Foundation Funded Research and Development FY 2011 – FY 2016



NSF is the largest source of Federal R&D funding for the University of Illinois at Urbana-Champaign.

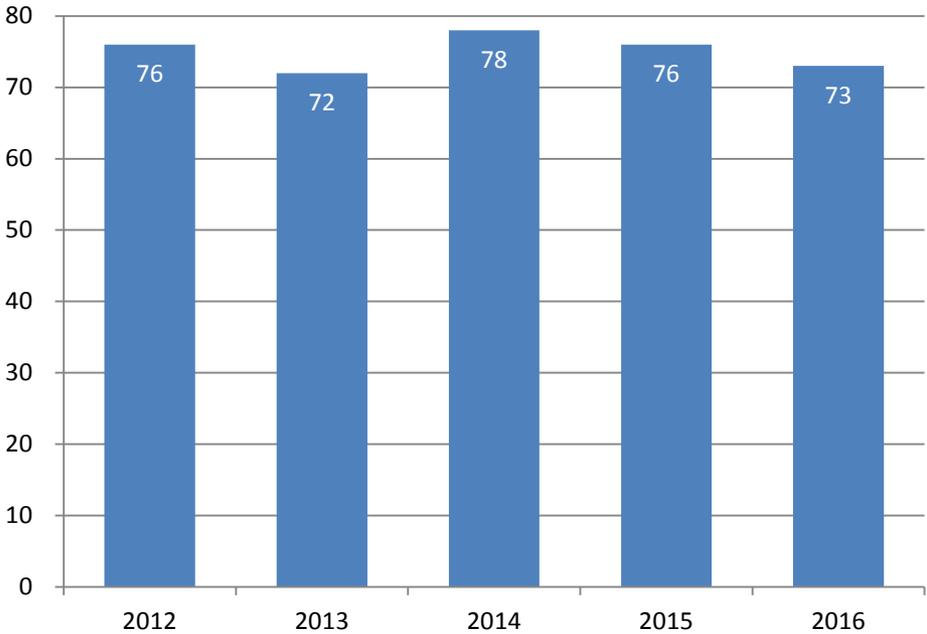
Note: FY 2013 increase includes \$120 million related to the construction of Blue Waters. FY 2016 peer data not available.

# National Science Foundation Funded Awards Top 15 Institutions FY 2016

Institution	Total	Research Support	Education & Human Resources	Major Research Equipment
Lockheed Martin Corporation	\$173,630	\$173,630	\$0	\$0
University of Illinois at Urbana-Champaign	\$143,551	\$126,062	\$17,489	\$0
University Corporation For Atmospheric Res	\$125,024	\$124,768	\$255	\$0
Battelle Memorial Institute	\$121,008	\$31,662	\$0	\$89,347
University of California-Berkeley	\$117,995	\$96,315	\$21,6790	\$0
Association of Universities for Research in Astronomy, Inc.	\$114,962	\$21,992	\$0	\$92,970
Cornell University	\$100,878	\$96,694	\$4,184	\$0
University of Texas at Austin	\$99,293	\$94,916	\$4,377	\$0
University of Washington	\$92,664	\$83,077	\$9,587	\$0
University of Michigan-Ann Arbor	\$92,628	\$84,244	\$8,384	\$0
Columbia University	\$89,730	\$87,479	\$2,251	\$0
Michigan State University	\$85,371	\$74,948	\$10,424	\$0
University of Wisconsin-Madison	\$83,715	\$73,654	\$10,061	\$0
Associated Universities Inc./National Radio Astronomy Observatory	\$79,471	\$79,471	\$0	\$0
California Institute of Technology	\$74,135	\$71,343	\$2,792	\$0

Source: <https://dellweb.bfa.nsf.gov/Top50Inst2/default.asp>

# Number of U.S. Patents Issued FY 2012 – FY 2016

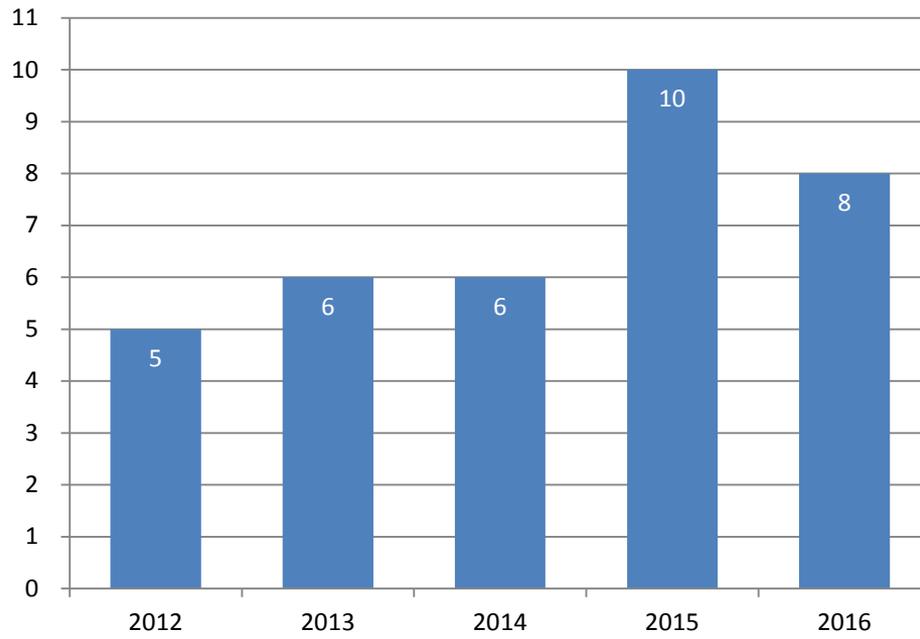


# Royalties

## FY 2012 – FY 2016



# Number of New Start-Up Companies Formed FY 2012 – FY 2016



# Overview



# Areas of Strength/Accomplishments

## Select, notable research awards and discovery, 2016-present

- Illinois led the nation in National Science Foundation awards for the sixth straight year.
- Extreme Science and Engineering Discovery Environment (XSEDE), a \$120 million, 5-year National Science Foundation project to unite the nation's scientific computing resources, led by the National Center for Supercomputing Applications, was renewed in 2016.
- Illinois researchers reported in the journal *Science* that they have discovered a way to tweak photosynthesis to boost crop yield, work that could ultimately help feed the world's growing population.
- Humanities Without Walls, a \$4 million project funded by the Mellon Foundation and led by the Illinois Program for Research in the Humanities, was renewed in 2016.
- Three new NSF-funded Industry/University Cooperative Research Centers (I/UCRCs)
- An Illinois team reported in the journal *Nature* that it has discovered how to overcome gram-negative bacterial defenses, overcoming a major barrier to the development of new broad-spectrum antibiotics.
- Illinois was named partner in a \$3.5 million Midwest Innovation Corps (I-Corps) node.
- University researchers were involved in 30% of all 2016 Department of Defense Multidisciplinary University Research Initiative (MURI) projects.
- Researchers working in a number of disciplines report advances in developing next-generation batteries.
- For the third year in a row, Illinois has been one of the Department of Energy's top six funding partners.

# Areas of Strength/Accomplishments

## **Specific infrastructure achievements include:**

- Building infrastructure to conduct additional biomedical research, including the launch of the Interdisciplinary Health Sciences Institute.
- Strong support for researchers in the Humanities, Arts, and Social Sciences: the Office of the Vice Chancellor for Research's External Grants Faculty Advising Team provided proposal development support for 35 faculty in Humanities, Arts, and Related Fields, with 12 successful proposals. In FY15 & 16, OSP's Pre-Award Shared Services Coordinator supported 146 proposals with 58 awards.
- Ongoing support for IT solutions, including:
  - A new reporting tool to increase compliance with federal requirements related to the Responsible Conduct of Research has increased year-to-date compliance to 51%.
  - A new system to manage and track training (235,000+ completed training records).
- Growth of the "Funding and Opportunities" email list to nearly 900 subscribers.
- Reuniting the Office of Sponsored Programs and the System's Grants and Contracts Post-Award Office, to provide better service to researchers.
- Reconfiguring the Office of Proposal Development to ensure tighter integration with central OVCR and provide enhanced support to researchers.
- 600+ Lab Safety Audits.
- A new approach to engaging campus-wide research institutes with the advancement community.

# Areas for Improvement

1. Continuing innovation in important business and compliance functions to better support researchers
2. Retaining preeminence in both disciplinary and interdisciplinary research in light of the state budget situation
3. Maintaining and enhancing competitiveness for Federal, Industry, and Foundation funding
4. Building sustainable support to enhance research capabilities in the arts, humanities, and social sciences

# Strategy to Address Areas for Improvement

## 1. Innovation in Business Processes

- Refine Research Administration Policies and Procedures
- Continue to improve campus research communications infrastructure, both internal and external
- Develop IT solutions to create efficiencies and streamline processes

## 2. Retain Preeminence in Research

- Build on reputation for excellence in the academic colleges and the Illinois Research Institutes that report to the OVCR.
- Strengthen alliances with National Labs and local and regional partners such as the Mayo Clinic, Carle, OSF, CERL, etc.

## 3. Compete for Funding

- Build on success at the Office of Proposal Development to support campus-wide proposal preparation needs
- Strengthen “collaborative research” activities in areas of pressing societal need
- Enhance University Corporate Relations activities

## 4. Sustainable Support for the Spectrum of Research

- Continue to provide ongoing support for grant-seeking activities in the Arts, Humanities, and Social Sciences
- Continue to develop programs and infrastructure in support of the health sciences, including the Carle-Illinois College of Medicine

# Areas of Risk

- Changes in federal support of research associated with the new administration
- Research grants and contracts supported by state agencies, at risk because of the budget situation
- Aging facilities and equipment, and deferred maintenance
- Complex state regulatory environment
- Recruiting of research faculty and staff by other institutions