

IOWA STATE UNIVERSITY

Office of the Vice President for Research

# President's Council

**January 31, 2018**



# University Update Topics

1. 2018 Legislative Session
2. Tuition
3. WorkCyte, Workday, and Improved Service Delivery
4. Sexual Misconduct: Start By Believing
5. Searches
6. Fundraising
7. Faces of Iowa State
8. Data Symposium

# IOWA STATE UNIVERSITY

Office of the Vice President for Research

## Advancing the Research Mission at ISU

Sarah Nusser

Office of the Vice President for Research

President's Council

January 31, 2018

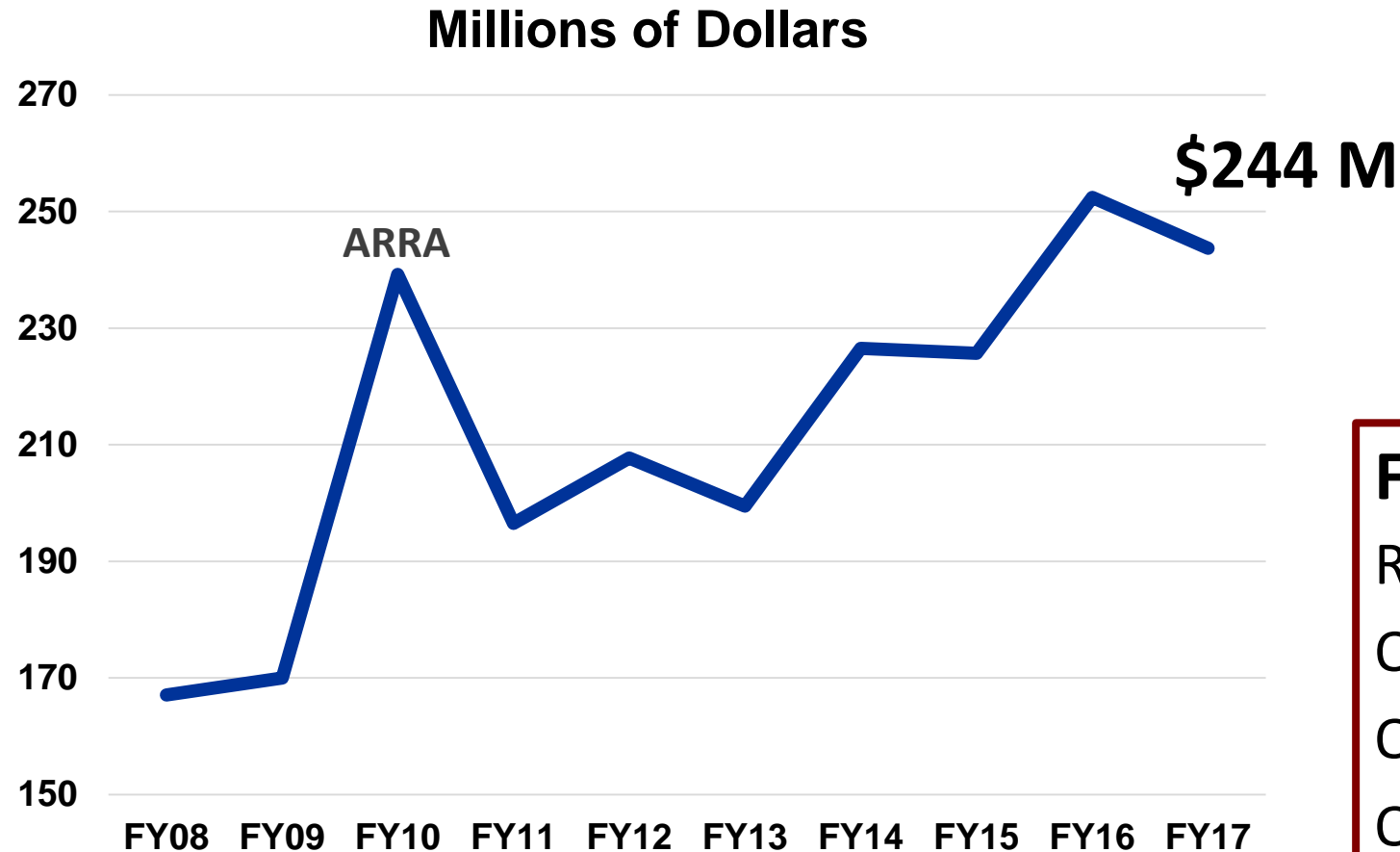




# Changes in Research Landscape (3 yrs ago)

- Nature of sponsored funding
- Innovation cycle as a framework
- “Big data” as a transformative research paradigm
- More meaningful engagement with the broader context of research and scholarship

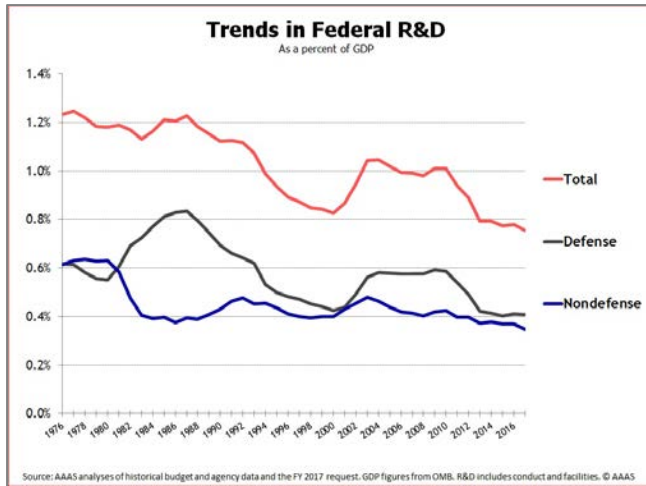
# FY08 – FY17 External Research Funding



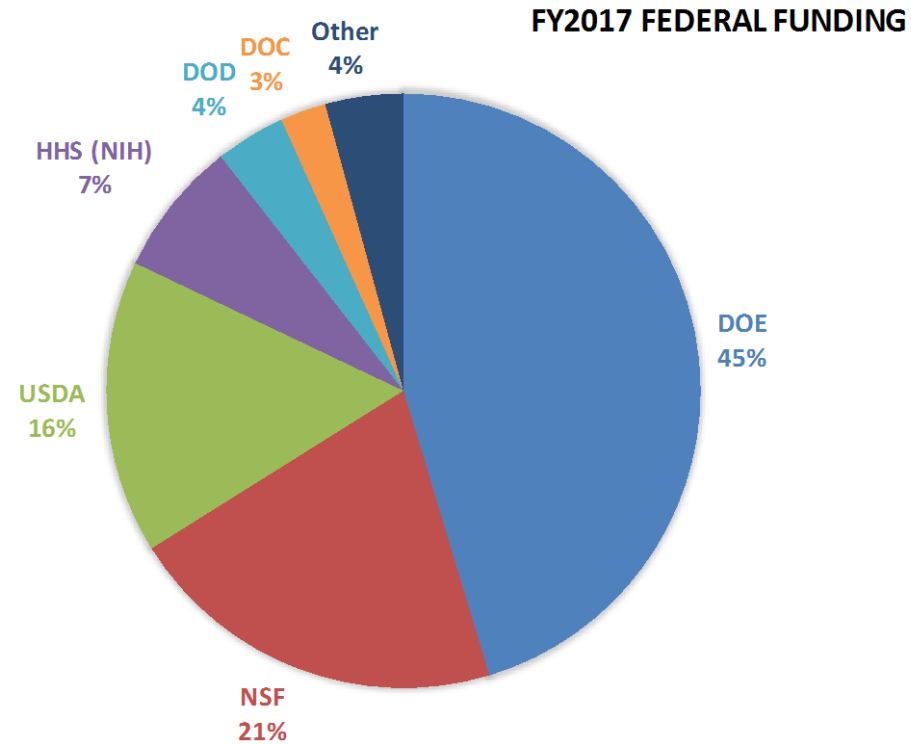
## FY17, 5 year trends

Research funding \$244M, up 20%  
Over 2300 proposals, up 10%  
Over 460 PIs w/ awards, up 6%  
Over 700 investigators, up 3%

# Federal (70%): Expand ISU Engagement with Specific Agencies



US Trends

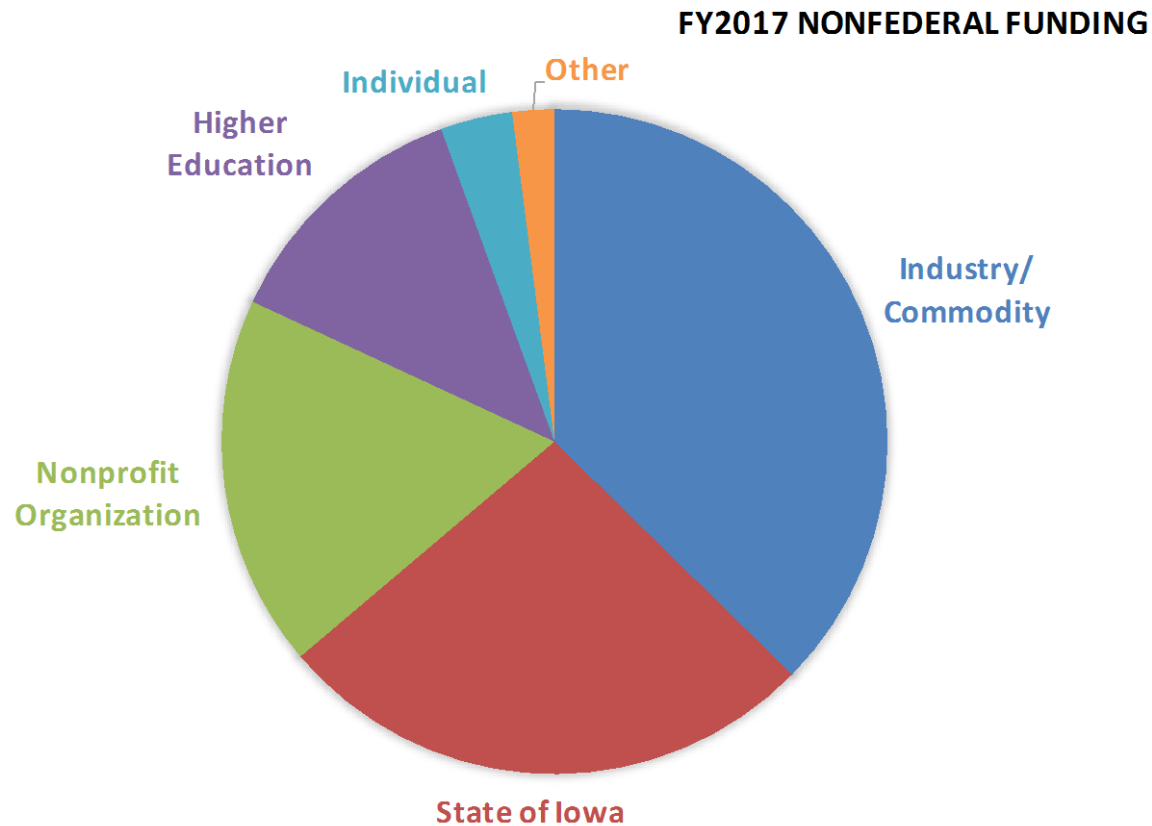


**FY13-FY17**

Federal Funding up 25%

- DOD up 47%
- NIH up 24%
- DOE up 53%
  - AL 33%
  - ISU 76%

# Nonfederal (30%): Diversify Funding



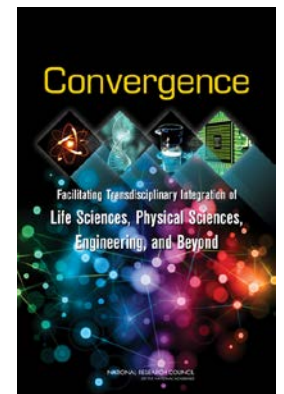
## FY13-FY17

### Non-federal funding up 15%

- Industry: up 14%
- Commodities: level
- State research: up 32%
- Nonprofits: up 118%
- Individuals: large increase in FY17

# Research Landscape in 2018

- Emphasis on grand challenge research themes
  - Today: national security, economy, immigration
- Convergence of disparate disciplines to address complex problems
- Deepening expectations in translating research for the public good
- Expanded range of required scholarly products





# Grand Challenge Research Themes

- Enabling healthy lives (plants, animals, people, communities)
- Building sustainable human and natural ecosystems
- Creating next generation materials and manufacturing technologies
- Enabling data driven discovery and cybersecurity
- Developing global citizens and vibrant societies



# Interdisciplinary Research Initiatives

## Healthy lives

- Vaccine and immunotherapeutics
- Antimicrobial resistance
- Brain initiative
- Translational health network (U-Turn)

## Sustainability

- Biobased chemicals
- Precision and digital agriculture
- Sustainable communities decision making

## Materials & Manufacturing

- Digital design and manufacturing
- Novel materials and qualified manufacturing
- Ames Laboratory research thrusts

## Data Science and Cybersecurity

- Dependable data science
- Cyber-physical systems

## Global Citizens, Vibrant Societies

- Iowa Bioscience platforms (economic development)
- K-12 engagement, plant phenomics
- Community engagement

# Bioscience Platforms: Connecting Research to Entrepreneurship and Economic Development



- Biobased chemicals

*... are value-added use of agricultural products that creates wealth across the state. Biobased chemicals can lead to products with new performance properties while being renewable.*

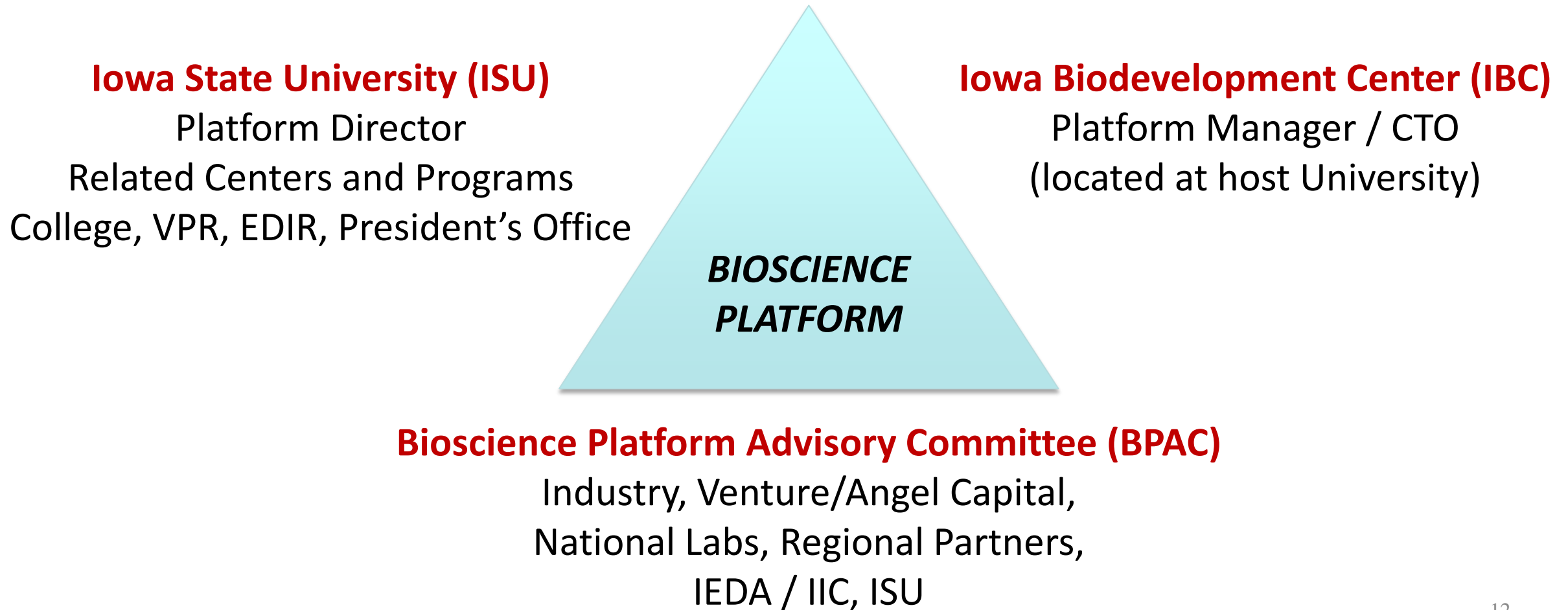
- Precision and digital agriculture

*... enables farmers to optimize management inputs to maximize yield with minimum input cost to increase yield stability, and generates significant investment opportunities with start-ups and existing Ag-related companies.*

- Vaccines and immunotherapeutics

*... can reduce use of antibiotics in food animals, improve efficiency of production agriculture, and generate efficacious and easy-to-administer vaccines for livestock.*

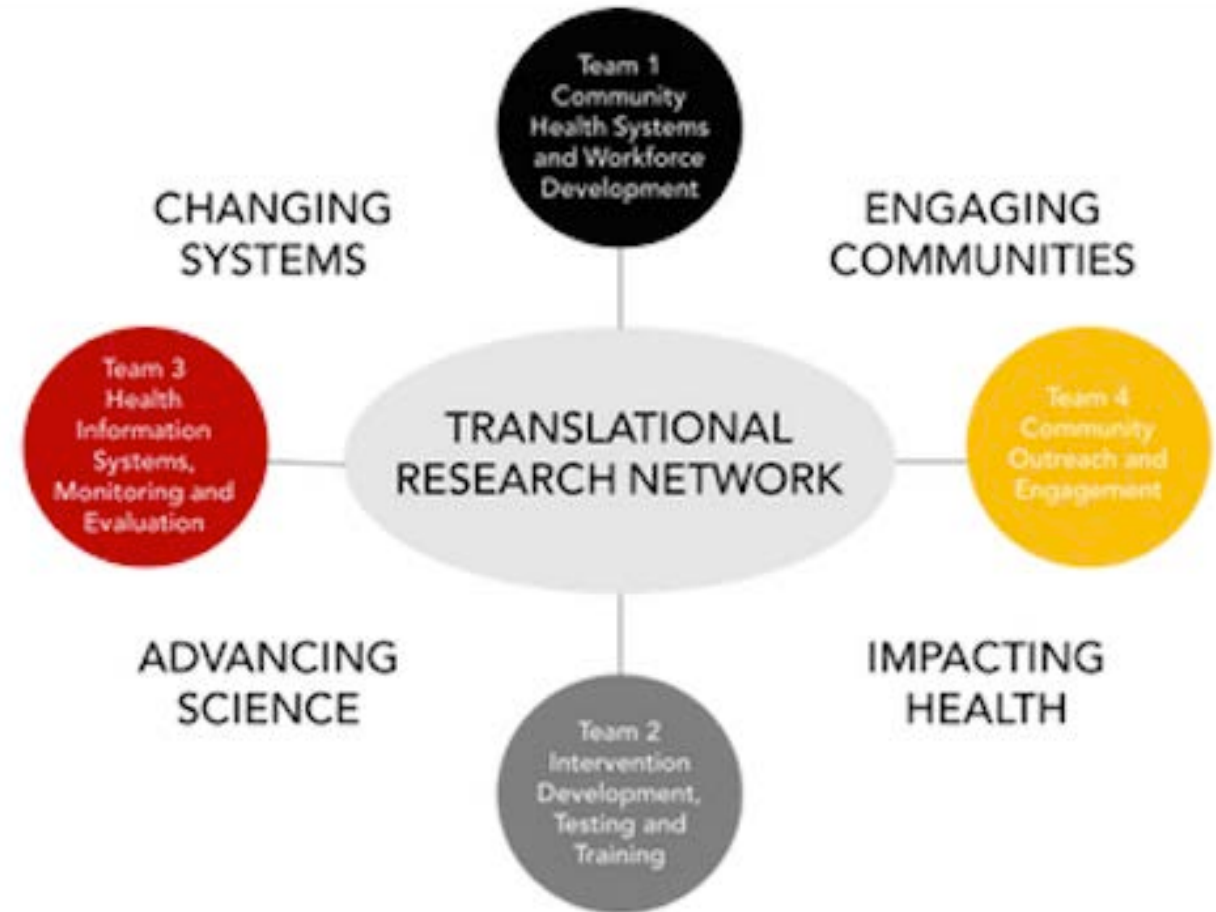
# Proposed Platform Partnership System



# U-TuRN: Connecting Research to Communities



The vision of U-TuRN is **build sustainable community systems** that **enable healthy lifestyles** by **empowering communities** to take action informed by science



# Addressing Complexities of Team-based Research

- Workshops by experts on team-based scholarship (AY16)
- Guidelines for working in teams (AY17)
- VPR workshop series on working in teams (AY18)
- Research team leadership academy (AY19)
- Ongoing facilitation and mentoring for emerging teams via VPR-College partnerships and Grants Hub



# Investing in High Risk, High Reward Ideas

*Internal Funding Programs to Support Faculty Career Arc*

## **New Faculty Start-Ups**

*Getting started quickly*

### **Experimental seed programs**

- Bridging the Divide
- ISU-UI collaborations

### **Specialty seed programs**

- Bailey, McGee Wagner, ...

## **Presidential Interdisciplinary Research Seed Funding**

*Changing directions with a high-risk, high reward idea*

**Presidential Cost Share for  
Research instrumentation  
Fund (COSRIF)**

**Publication Subvention  
(including Open Access  
publication cost share)**

## **Presidential Interdisciplinary Research Initiative Funding**

*translational research with societal impacts*





# Lunch & Learn: Bridging the Divide

**Scholars interested in building new teams that integrate Arts, Humanities, Social Science, Design & STEM disciplines**

Tuesday, Jan 23, Noon – 1 pm, 368A Heady Hall

2 lightning talks: Michael Chris Low, *History*; Linda Shenk, *English*

**Friday, Feb 2, noon – 1 pm, 130 Design**

2 lightning talks: Annette O'Connor, *Veterinary Diagnostic and Production Animal Med*; Clark Wolf, *Philosophy & Religious Studies*





# 2018 ISU Research Day

**DISCOVER • CREATE • TOGETHER**

**Tuesday, March 27** 11 am – 4 pm

Memorial Union Sun Room and Oak Room

Prof. Gregory Petsko, Brandeis U, Natl Academy of Sciences member

*Science and the Arts/Humanities: A Marriage Made in Heaven*

Lightning talks, posters, exhibits and other creative expressions

The art of research communication through story telling

Resource tables for the researchers

# Going Forward

- **Iowa State's Mission:**  
Create, share, and apply knowledge to make Iowa and the world a better place
- **ISU Strategic Plan Goal 2:**  
Enhance the university's research profile by conducting high impact research that addresses the grand challenges of the 21st century

