



PURDUE

WORLD-CHANGING RESEARCH

Suresh Garimella

Executive Vice President
for Research and
Partnerships

and

Jay Akridge

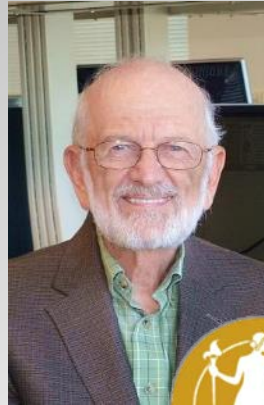
Glenn W. Sample Dean
of Agriculture

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WHAT WE MAKE
MOVES THE
WORLD FORWARD

PURDUE
UNIVERSITY

OUTSTANDING FACULTY



PURDUE INNOVATORS

Purdue visiting scientist refines all-natural ingredients to preserve cosmetics

Products derived from the extracts of superfruits of the Solanum plant species are being commercialized by BioProcol, based in Medellin, Colombia. A trend in the cosmetics and personal care industry is the use of all-natural ingredients instead of synthesized materials like parabens, commonly used in preservatives..



Purdue innovation wins FDA food safety challenge

to advance breakthrough ideas on finding disease-causing organisms in food – especially *salmonella* in fresh produce. The team uses minuscule filters for capturing small numbers of foodborne pathogens in large volumes of liquid suspensions.



SPEECHVIVE Receives R&D 100 Award

SpeechVive's technology was developed over the past decade by Jessica Huber, professor in Purdue's Department of Speech, Language and Hearing Sciences. The device reduces speech impairments associated with Parkinson's disease.



Detection of breast cancer in rural Sudan

Dr. S. Mohammed led a study, published in the journal *The Lancet Oncology*, which found that engaging local volunteers in an early screening program made it possible to overcome the stigma and social barriers that can keep women in sub-Saharan Africa from seeking help.



Experiential Learning

Undergraduate students add research to their university experience working alongside professors and graduate students on relevant research projects.

TECHNOLOGY TRANSFER PROWESS

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Purdue University Jumps to 16th Among Worldwide Universities Granted U.S. Patents for 2014



Purdue University takes significant jump in world rankings. WEST LAFAYETTE, Ind (PRWEB) June 16, 2015 Purdue University is ranked 16th in the world among universities granted U.S. utility patents in 2014, according to a new report released...

For a second year in a row, Purdue posted record-breaking numbers in commercialization activities

STRENGTHS IN THE LIFE SCIENCES

LIFE SCIENCES STRENGTHS

6

COLLEGES

16

DEPARTMENTS

**PURDUE MAKES
\$250
MILLION
INVESTMENT**

AREAS OF EXCELLENCE/RANKING

**AGRICULTURAL
AND BIOLOGICAL
ENGINEERING #1**

**ANALYTICAL
CHEMISTRY #2**

AUDIOLOGY #11

**SPEECH LANGUAGE
PATHOLOGY #5**

INVESTING IN THE LIFE SCIENCES

Addressing health problems...

- Heart disease
- Cancer
- Alzheimer's & Parkinson's
- Infectious diseases (malaria, HIV, ...)
- Multiple sclerosis
- and more



Purdue researchers Catherine Hill and Val Watts are designing insecticides that target dopamine receptors in disease-transmitting mosquitoes.

... by providing

- New diagnostic tools
- New therapeutics
- New vaccines

INVESTING IN THE LIFE SCIENCES

Supporting Indiana's life sciences business sector

"Indiana has a major stake in the 21st century life sciences sector, which delivers a \$62 billion impact and makes an outsized contribution to our economy. Purdue University's research excellence and economic engagement have always forged a critical component of that success, and with this exciting new commitment from Purdue, we are far better placed to win in the global competition for life sciences talent, innovation and investment."

David L. Johnson, president and CEO of BioCrossroads



INVESTING IN THE LIFE SCIENCES

- **Plant Sciences Move**
- **Drug Discovery Move**
- **Pillars of Excellence**
 - **Integrative Neuroscience Center**
 - **Purdue Institute for Inflammation, Immunology and Infectious Diseases**





Integrative Neuroscience Center

Spanning 25 departments across six colleges, Purdue's neuroscience enterprise already includes around 100 faculty with ongoing neuroscience-related research activities or interests. This deep pool of human resources had positioned Purdue well in several target research areas within the broad field of neuroscience, and the new center will synergize these efforts for national and international impact.

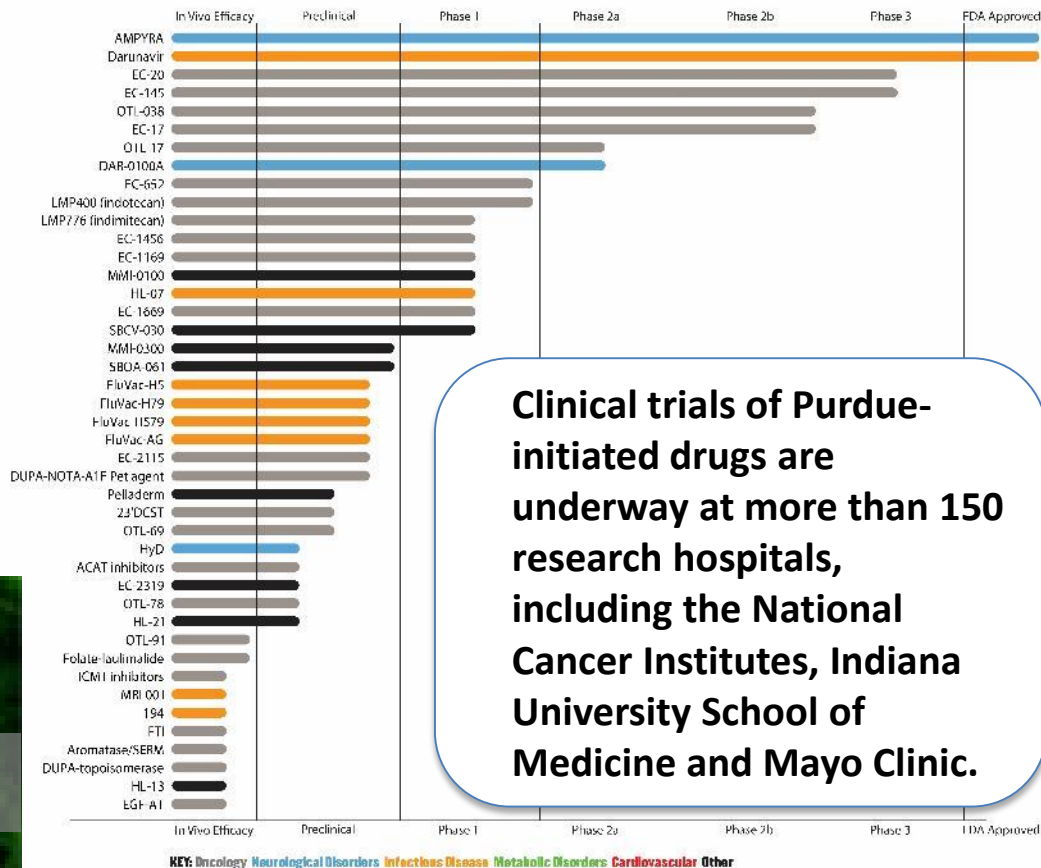
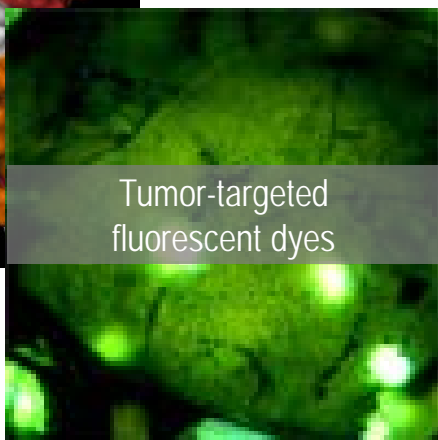
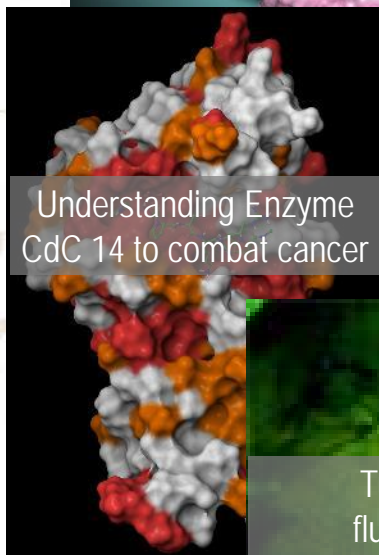
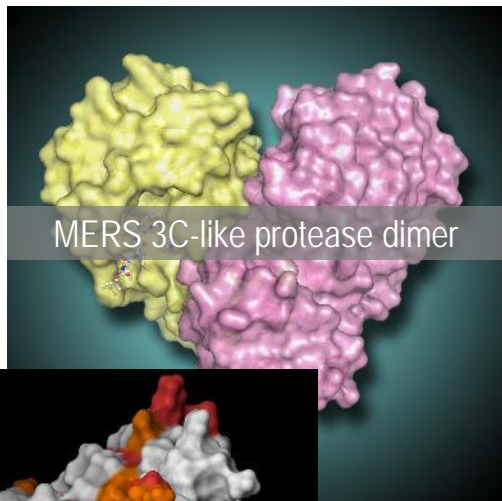


PI4D

The Purdue Institute for Inflammation, Immunology and Infectious Diseases (PI4D) will leverage the significant diversity of life sciences, physical sciences and engineering on campus to invent and integrate basic immunologic advances, new diagnostics, probe basic biological and inflammatory processes, and to develop and commercialize novel intervention methods to control an array of chronic inflammatory conditions, cancer and infectious diseases.

INVESTING IN THE LIFE SCIENCES

Purdue Moves: Drug Discovery



Clinical trials of Purdue-initiated drugs are underway at more than 150 research hospitals, including the National Cancer Institutes, Indiana University School of Medicine and Mayo Clinic.

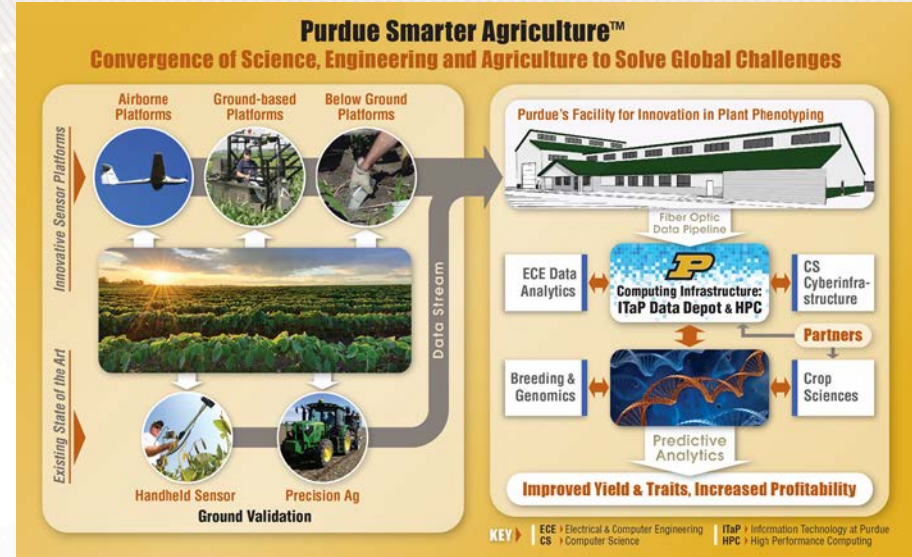
Plant Sciences Purdue Move

- New faculty in plant biology
 - 6 hired, 350 applicants for remaining positions, 10 interviews completed, 9 additional interviews pending, 2 offers made to date
- 2015-16 Molecular Agriculture Summer Institute
 - 13 high school students
 - 10 Undergraduate Research Fellows
- Impact Labs – doubled capacity to teach genetics



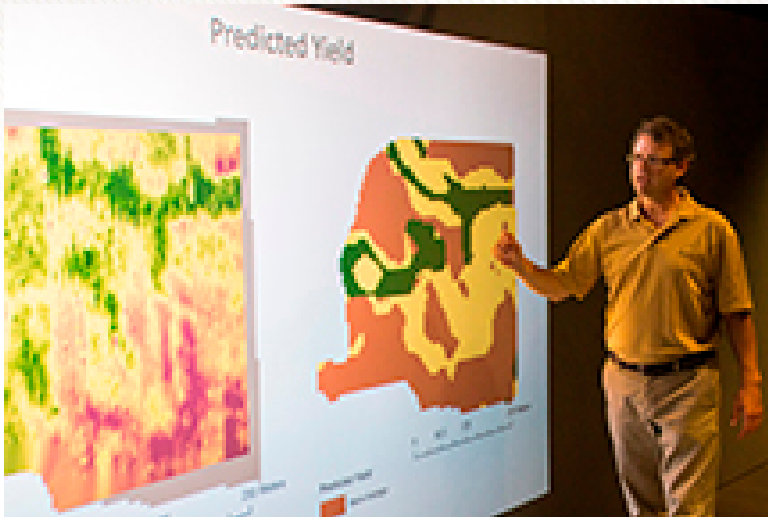
Plant Phenotyping

**Controlled Environment
Phenotyping** – Project in front of
Board for review/approval



**Automated Plant
Phenotyping Facility**
– Open later this Spring

Commercialization with The Foundry

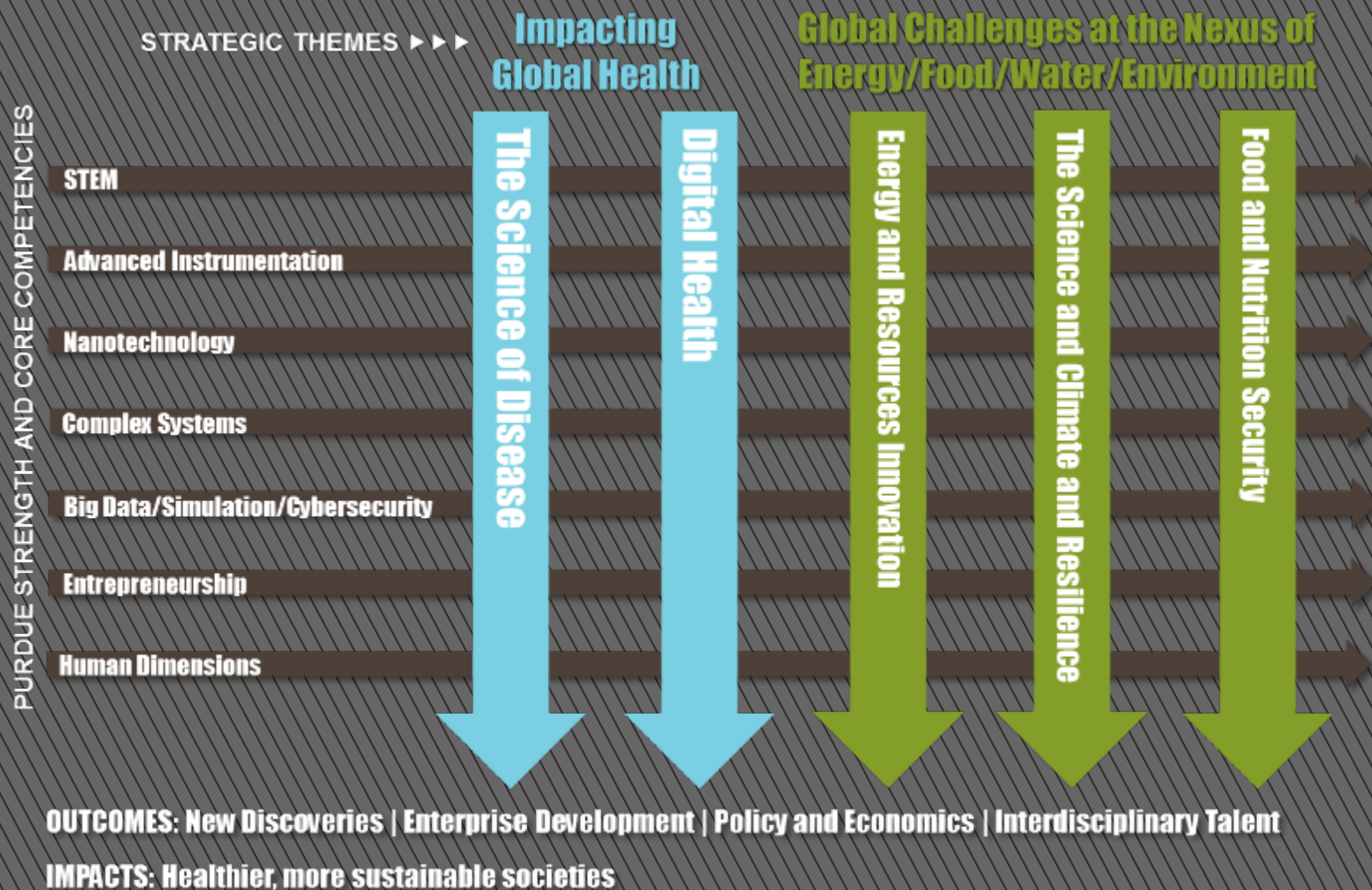


Dr. Phillip R. Owens (Agronomy) demonstrates how a farmer's field can be mapped to show predicted crop yield with his technology (New Start-Up: Ag Soil Analytics)

- 2 Entrepreneurs in Residence
- \$2 M Ag-Celerator™ - Venture Capital Fund now accessible
- Foundry Launch Box process for start-ups
- Students - Certificate of Entrepreneurship and Innovation

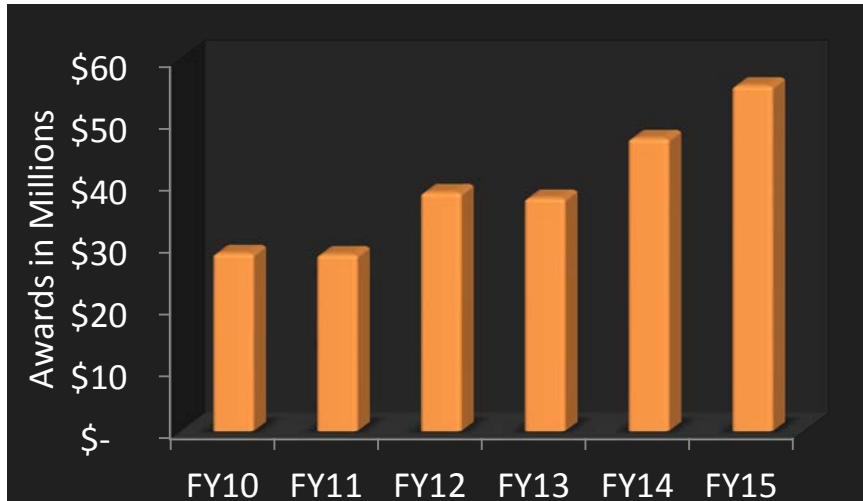
DISCOVERY PARK

Innovating for life on a sustainable planet



OFFICE OF CORPORATE & GLOBAL PARTNERSHIPS

Funding from For-Profit Corporations



- Continued growth primarily via focus on Strategic Partnerships
- Long-term, comprehensive, multi-College, signature theme, joint strategic planning

Presidential Partners

- Top tier, initially 10 companies
- All business sectors
- \$2M+/yr funding level
- Global representation
- Education, research, engagement
- Digital & physical gateway

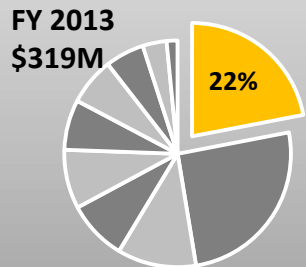
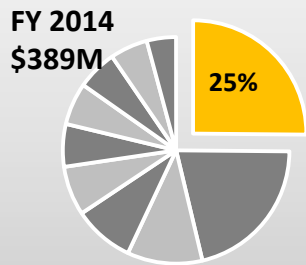
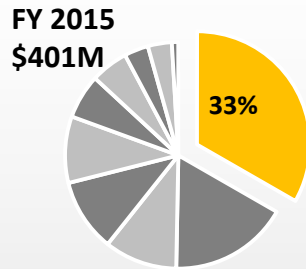
Rolls-Royce

>\$5M
Research Awards
in 2014-15



PURDUE'S RESEARCH ENTERPRISE

Purdue's Record of Industry/Foundation Support

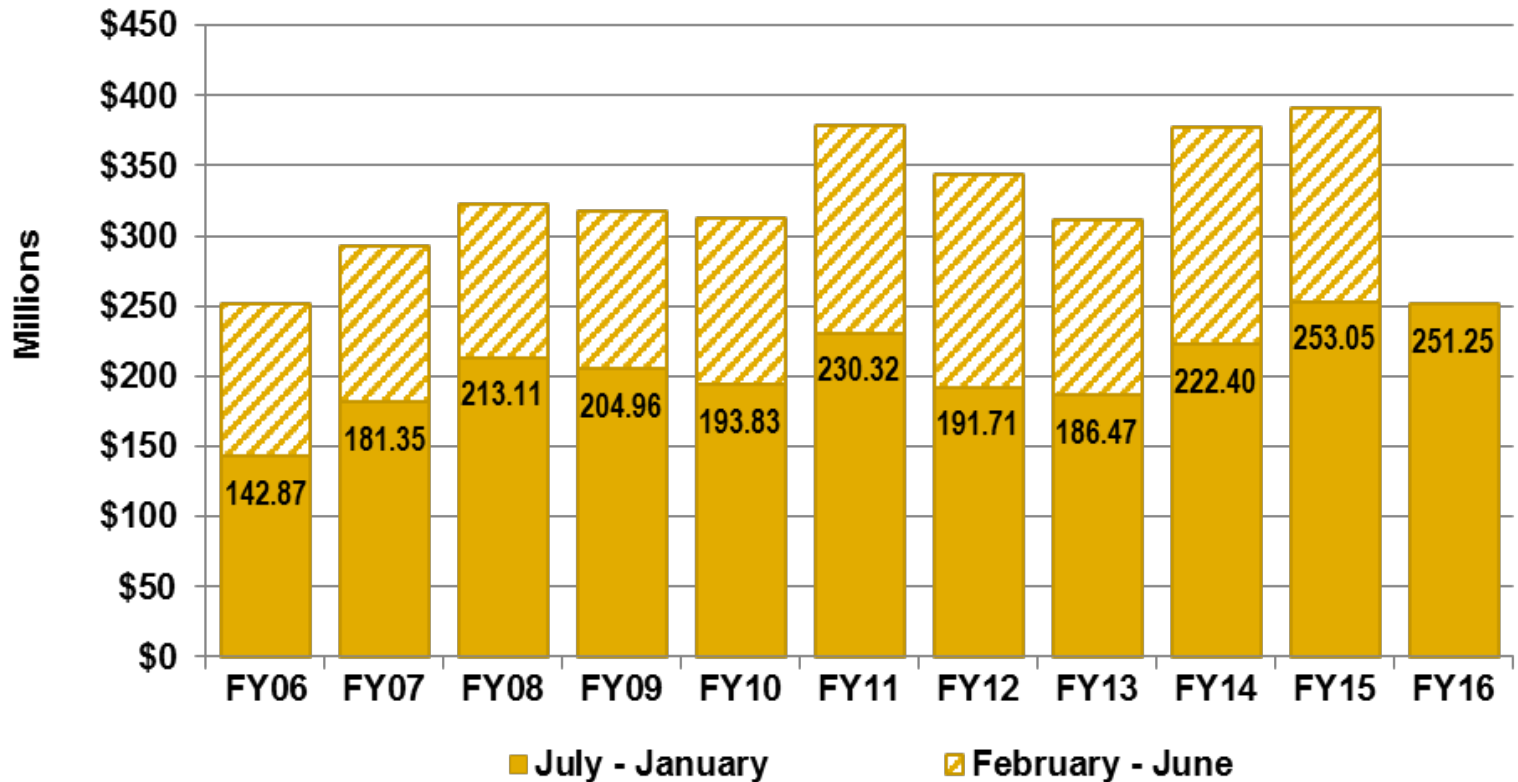


Methodology

- Support for proposal development and award management
- Contract options in place to partner with companies
- Culture of collaboration and interdisciplinary research
- Entrepreneurship ecosystem
- Technology commercialization

PURDUE'S RESEARCH ENTERPRISE

Sponsored Program Awards (without ARRA) West Lafayette Campus



Advancements in research at Purdue would not be possible without our dedicated faculty, students and staff!



<http://www.purdue.edu/research/publications-data/faculty-tks.php>