

WPI's RESEARCH ENTERPRISE IN THE STRATEGIC PLAN

Faculty Meeting

December 18, 2015



WPI

STRATEGIC PLANNING

Retreats, listening sessions,
faculty lunches, pillar topics announced
June-November 2014





WPI

STRATEGIC PLANNING IGNITE TEAM #3

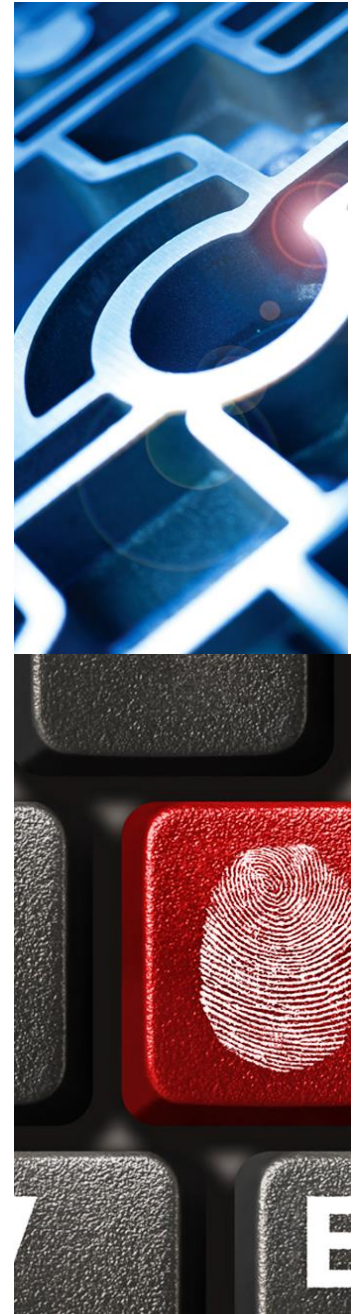
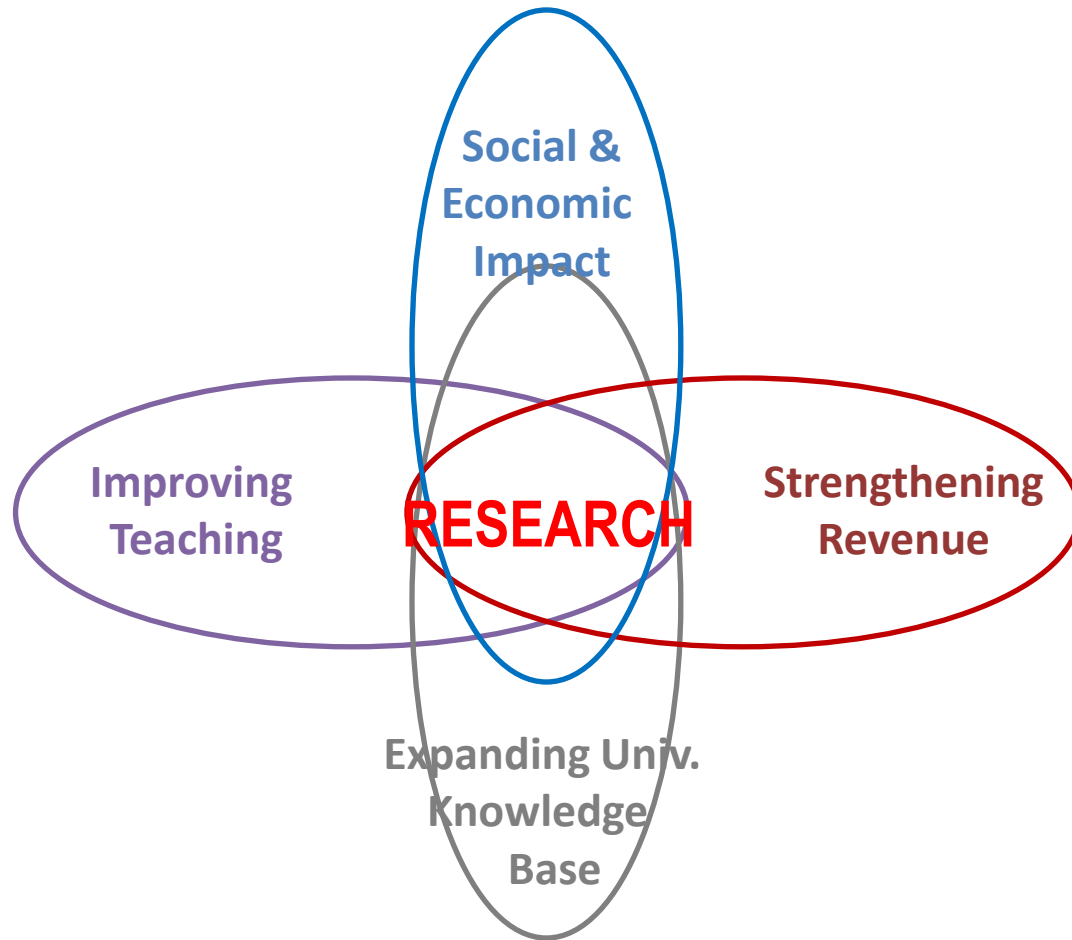
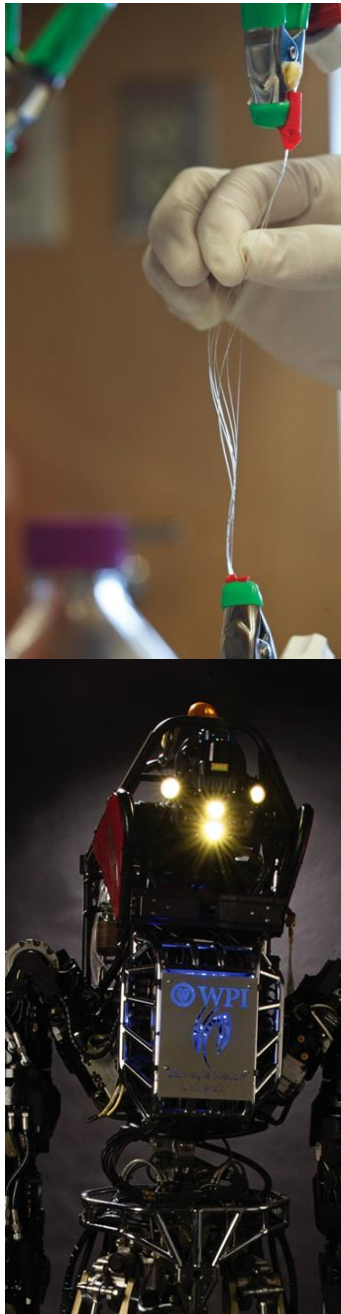
Strengthen **Research & Ph.D.** Programs

February 26, 2015

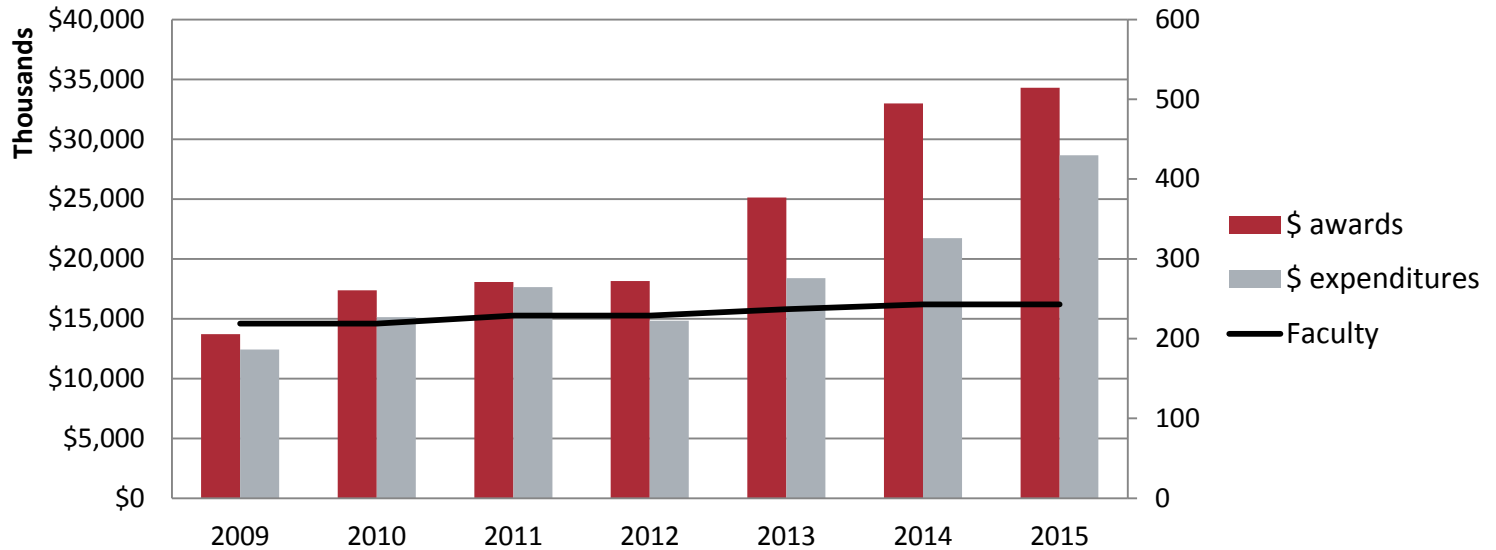
B. Vernescu & J. Yagoobi

Terri Camesano
Tanja Dominko
Gregory Fischer
Nikolaos Gatsonis
Arne Gericke
Michael McGrade
Melissa Mobley
Taskin Padir
George Pins
Reeta Rao
Elke Rundensteiner
Deborah Scott
Craig Shue
Diane Strong
Bogdan Vernescu
Alexander Wyglinski
Jamal Yagoobi

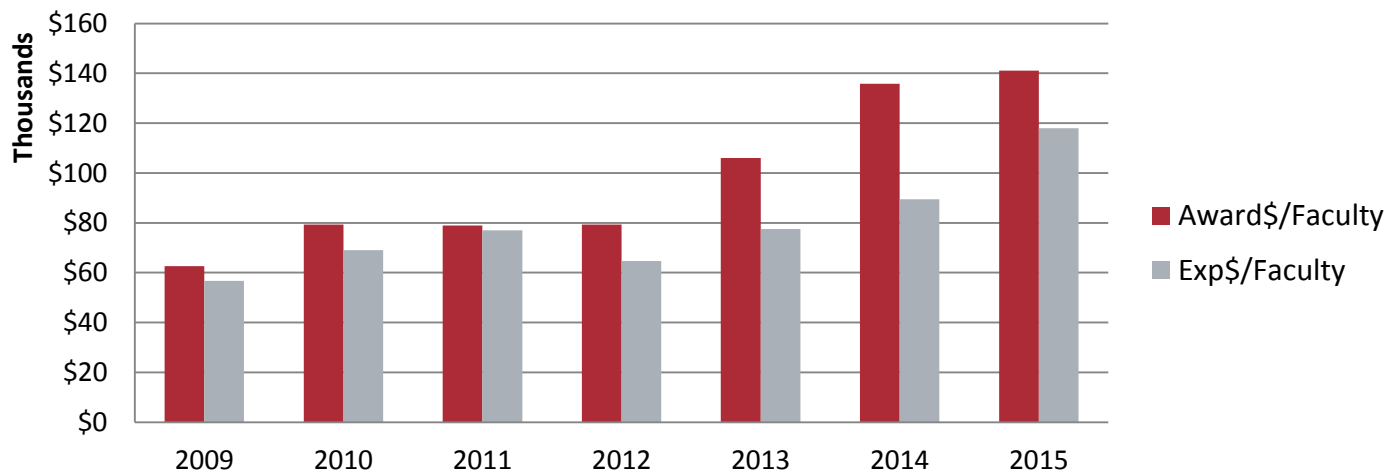




Awards, Expenditures, and TTT Faculty Headcount: 2009-2015

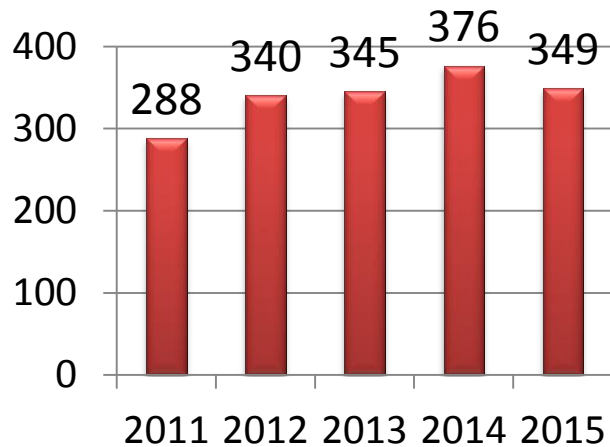


Awards and Expenditures per TTT Faculty Member: 2009-2015

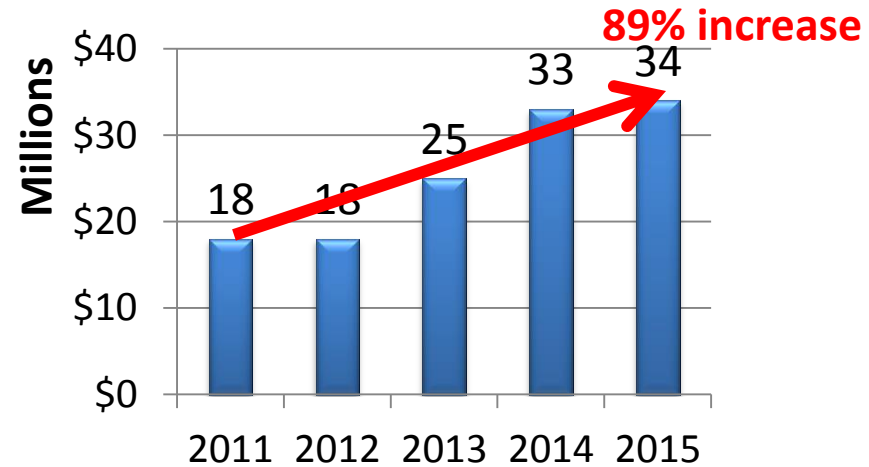


Research Activity and Awards

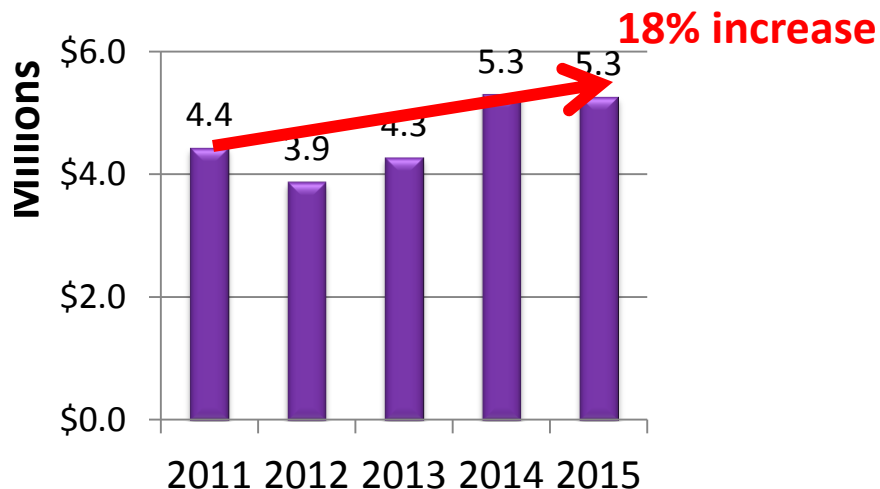
Proposals



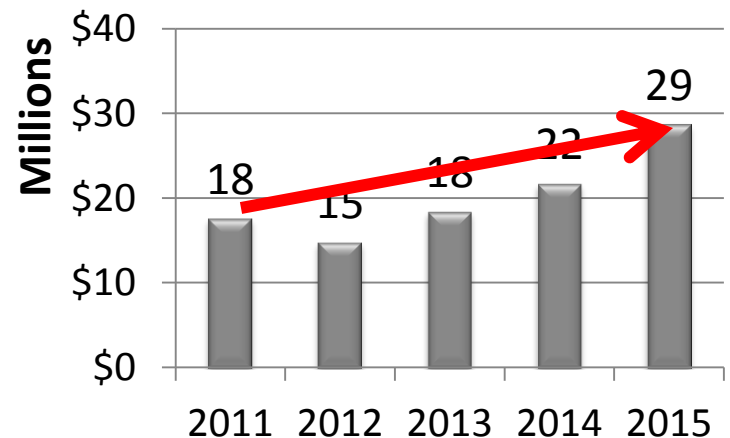
Award Increments



Recovered F&A



Expenditures



IMAGINE A WORLD

- HEALTHY
- SAFE & SECURE
- RESILIENT
- VIBRANT



IMAGINE A WORLD

- **ADVANCED MATERIALS, MANUFACTURING, MOBILITY**
- **HEALTH AND BIOTECHNOLOGY**
- **CYBER, DATA AND SECURITY ENGINEERING**
- **ROBOTICS AND CYBERPHYSICAL SYSTEMS**
- **LEARNING SCIENCES AND TECHNOLOGY**



Research Themes



**Health and
Biotechnology**



**Robotics and
Cyberphysical
Systems**



**Advanced
Materials,
Manufacturing
and Mobility**



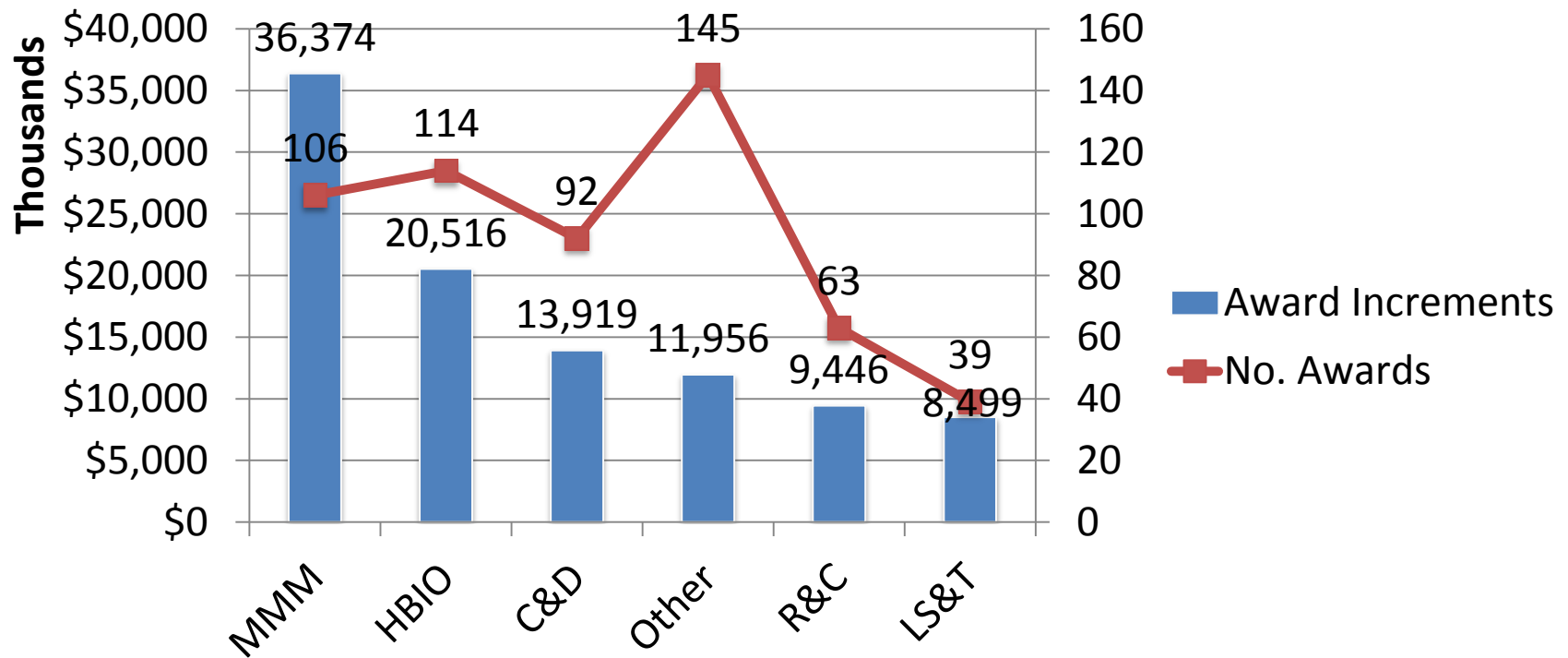
**Cyber, Data
and Security
Science and
Engineering**



**Learning
Sciences and
Technology**

Research Themes Build Upon Strength & Opportunity

Research Themes' Funding FY'11-FY'15





WPI

Cyber, Data and Security
Engineering
Elke Rundensteiner (CS & P3)
Kathi Fisler (CS)
Berk Sunar (ECE)
Craig Shue (CS & P3)
Thomas Eisenbarth (ECE)
Randy Paffenroth (MA)

DEVELOPING RESEARCH THEMES SUMMER 2015

The Research Enterprise

November 5, 2015

K. Oates and B. Vernescu

Learning Sciences and
Technology

Neil Heffernan(CS)

Ivon Arroyo (SSPS)

Joseph Beck(CS)

Erin Ottmar(SSPS)

Advanced Materials,
Manufacturing & Mobility

Jamal Yagooby (ME & P3)

Diran Apelian (ME)

Michael Timko (CHE)

Diana Lados (ME)

Health and Biotechnology

Glenn Gaudette (BME)

Greg Fischer (ME)

Arne Gericke (CH & P3)

Diane Strong (BUS & P3)

Luis Vidali (BBT)

Robotics and Cyberphysical
Systems

Taskin Padir (ECE & P3)

Jim Duckworth (ECE)

Ximing Huang (ECE)

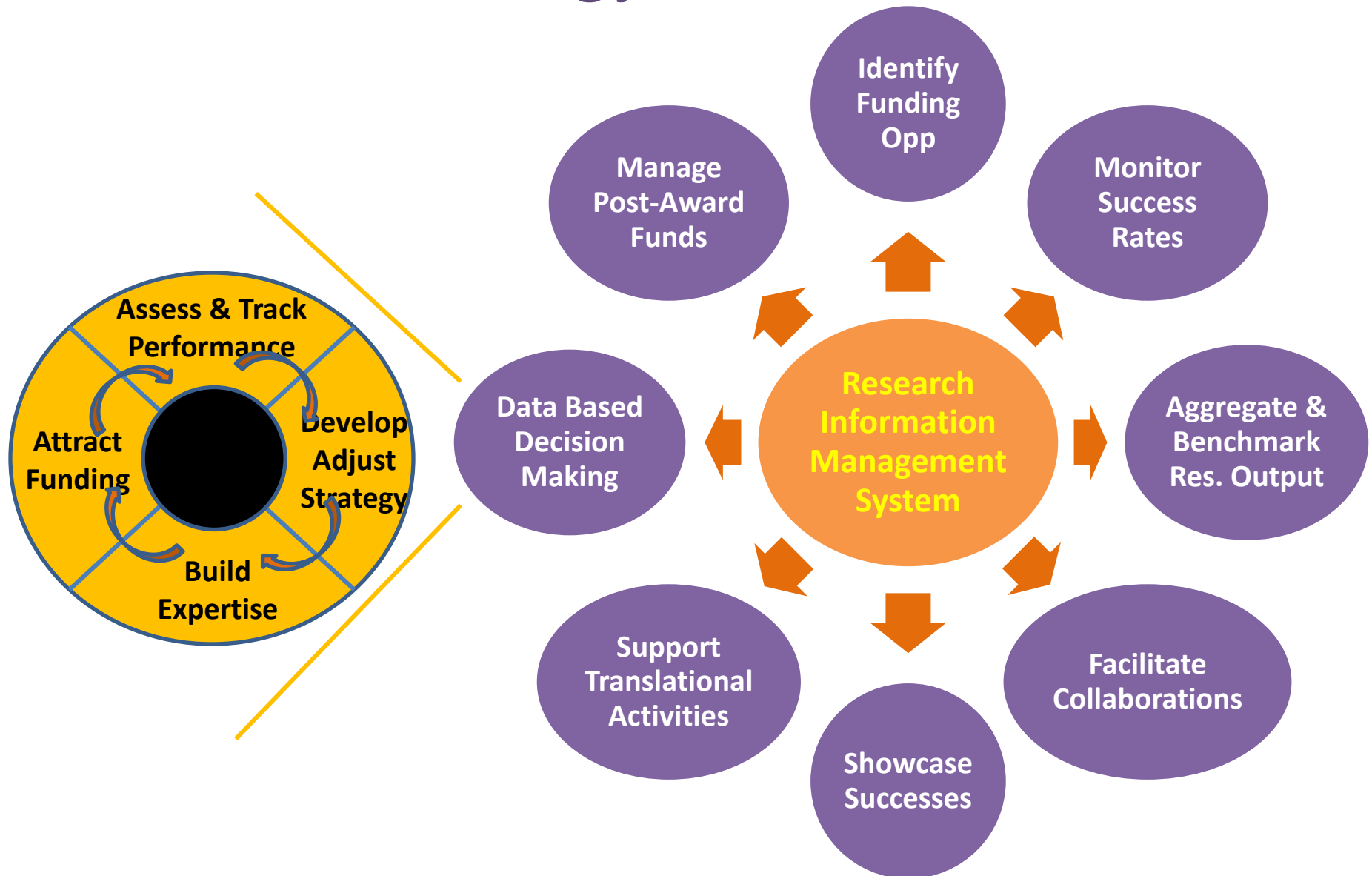
Sonia Cernova (CS)

Dmitri Berenson (CS)

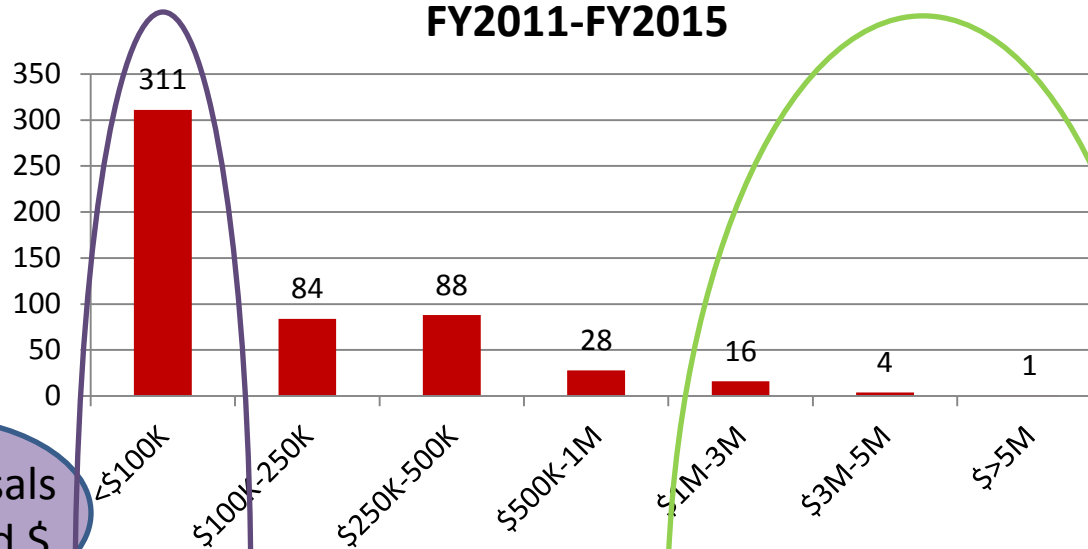
WPI's Research Enterprise

Aspirational Goal: WPI is nationally recognized as a research university, with areas of global excellence, by pursuing scientific and technological advances across disciplines, with societal and industrial impact.

Data driven strategy

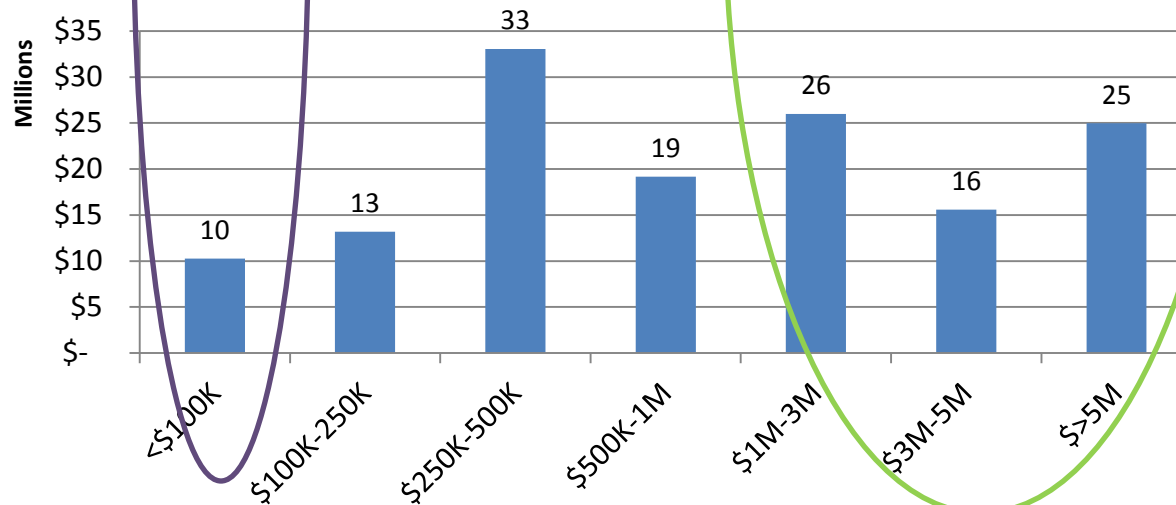


Proposals funded, by size FY2011-FY2015



58% proposals
7% of award \$

Value of funded proposals, by size FY2011-FY2015

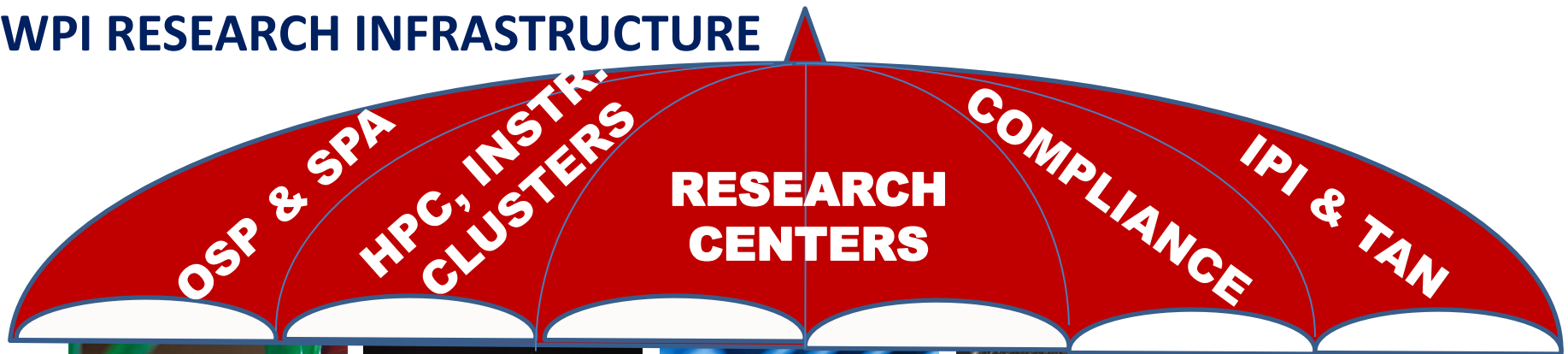


4% proposals
46% of award \$

WPI CENTERS' EXPENDITURES FY15

Apelian	MPI - All MPI Centers	6,654,500.32
Yagoobi	Center for Advanced Research in Drying (CARD)	23,001.50
Ma	Center for Inorganic Membrane Studies	1,281,304.30
McNeill	New England Center for Analog & Mixed Signal IC Design	116,597.50
Gaudette	Regenerative Biosciences	410,420.02
Cyganski/Duckworth	Center for First Responder Technology	330,955.68
Datta	Fuel Cell Center	19,742.29
Ludwig	Center for Imaging and Sensing	113,076.97
Lados	Integrative Materials Design Center	327,532.71
Lambert	Center for Neuroprosthetics and BioMems	74,216.39
Tilley	Center for Industrial Mathematics & Statistics (CIMS)	198,864.27
Easson	Center for Bioprocessing & Tissue Engineering	50,381.63
Rice	Center for Entrepreneurship & Innovation	192,501.56
Vera Tice	Healthcare Delivery Institute, HDI	1,750,542.09
TOTAL WPI CENTERS		11,528,839.71

WPI RESEARCH INFRASTRUCTURE



**Health and
Biotechnology**



**Robotics and
Cyberphysical
Systems**



**Advanced
Materials,
Manufacturing
and Mobility**



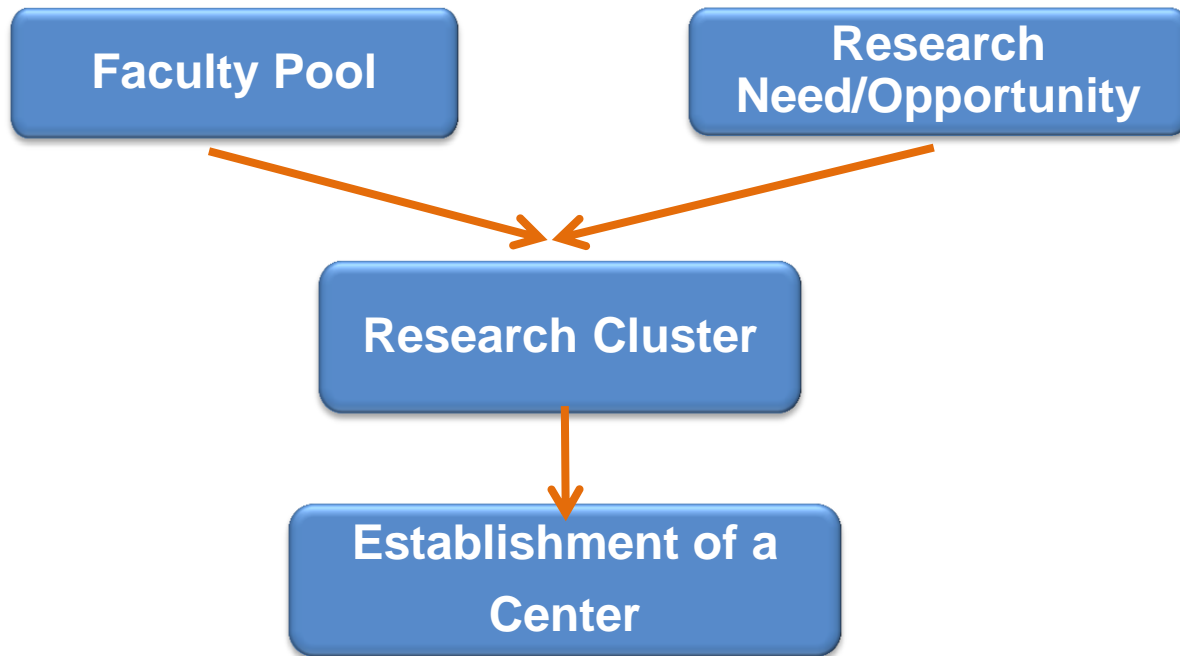
**Cyber, Data
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Science and
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**Learning
Sciences and
Technology**

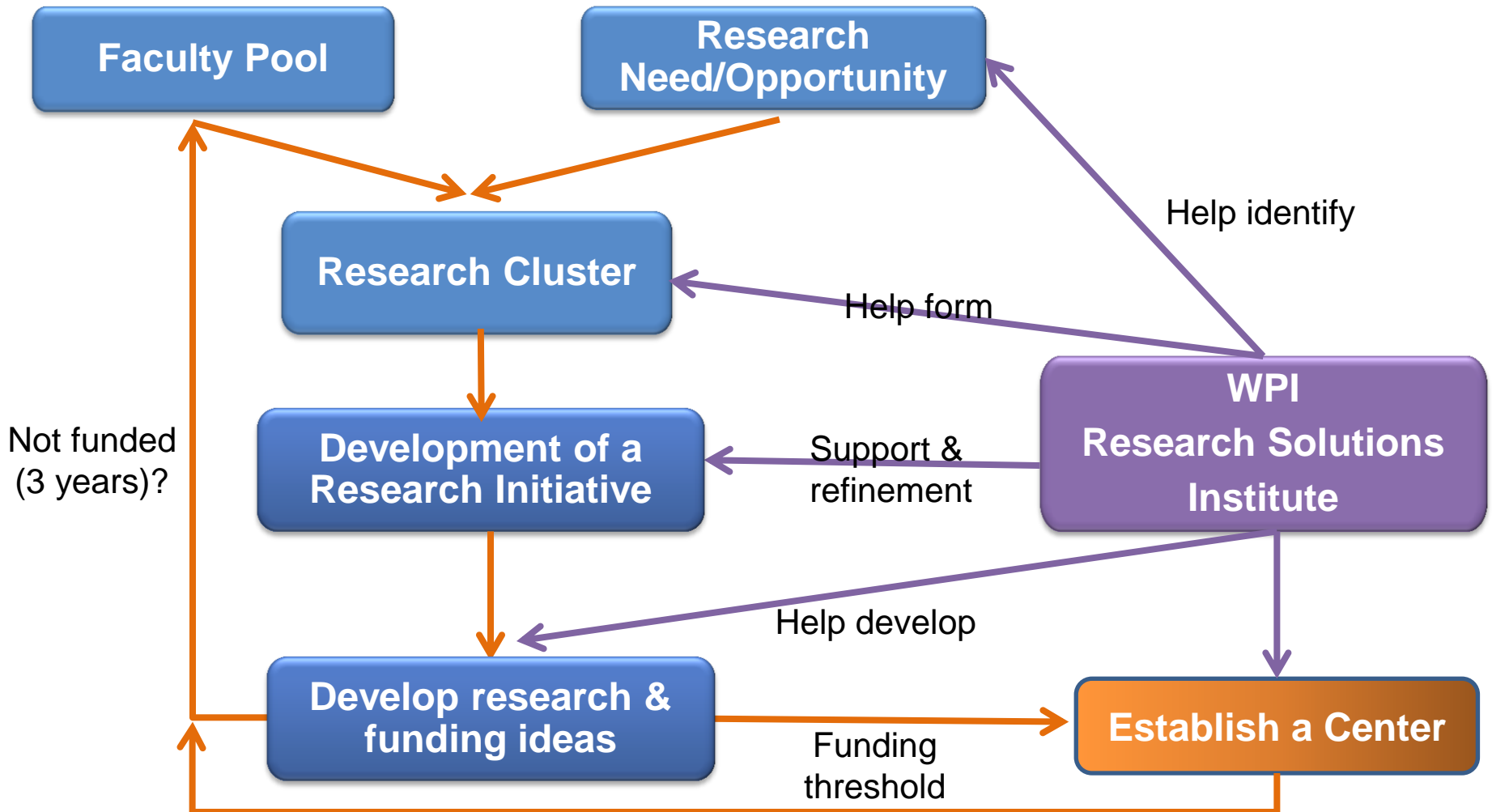
Research Themes Build Upon Strength & Opportunity

WPI research infrastructure



Enhance WPI's Research Infrastructure

WPI Research Solutions Institute



WPI's Research Enterprise

Three Year Goals:

- Establish faculty cluster hiring
- Strengthen the research infrastructure
- Launch the WPI Research Solutions Institute
- Submit significant research center (STC, ERC,...) proposals (two per year)
- Increase corporate, foundation and government funding by 50%
- Increase graduate research fellowships by 50%