

DIAC Meeting Update on Research 2 April 2015

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Recent Research Highlights

- [Innovate IUPUI: Open Labs at Research Day April 17, 2015 2:30PM](#)
- BME professor Chien-Chi Lin receives NSF Career Award, \$490K for hydrogel polymer materials applied to cancer stem cell research
- Nature Communications published ME professor Jian Xie's research on graphene-based nano-materials for advanced Li-ion batteries
- IUPUI mechanical and biomedical engineering students win top prizes in 4th annual competition:
[Ideas Solving Social and Economic Challenges](#)
 - #1 SafeBay for urban motorcycle storage
 - #2 NeoWarm Pouch for mom+solar premie care



Innovate IUPUI

Open Labs at Research Day

School of Engineering and Technology, IUPUI

FRIDAY

APRIL 17, 2015

2:30 P.M.

Collaborative Research, Connecting with Practitioners

**Ψ INDIANA UNIVERSITY
PURDUE UNIVERSITY
INDIANAPOLIS**

- » Tour newest labs and see live demos
- » Safer streets with self-driving cars
- » Additive manufacturing by 3D printing

- » Nano-medicine delivered by technology
- » Energy storage to stop climate change
- » Nanoscale and 3D imaging

Visit the School of Engineering and Technology and experience innovation.

Innovate IUPUI

Open Labs at Research Day

FRIDAY

APRIL 17, 2015

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Walking Tour:

2:30 P.M.

Campus Center | 420 University Blvd., 1st Floor

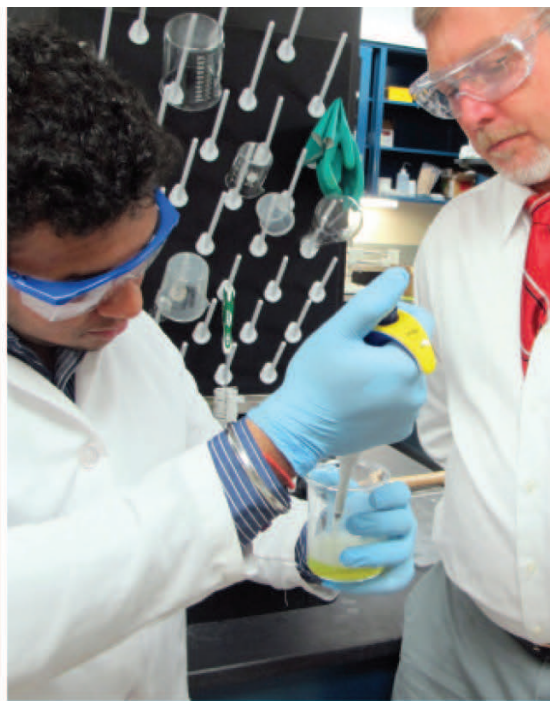
Tour will conclude at the new Science and Engineering Lab Building (SELB) at 350 N. Blackford Street. Parking in North Street Garage is recommended, 819 W. North Street.

No fee. Pre-registration is required since group size is limited on walking tours. Scan QR Code to register or visit: <http://go.iu.edu/o7p>

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School of Engineering and Technology, IUPUI Research Centers

- Transportation Active Safety Institute (TASI)
- Richard G. Lugar Center for Renewable Energy
- Integrated Nanosystems Development Institute (INDI)
- Biomechanics and Biomaterials Research Center (BBRC)



DIAC Research Committee

- Met on Feb 27th, 2015
- Discussed potential topics for focused engagement with School research
- Decided to use the current National Network for Manufacturing Innovation topics as drivers
- Plan to coordinate with IEDC on supporting faculty submitting projects to NNMI
- Will send letter to IABs and DIAC on the plan

NATIONAL NETWORK FOR MANUFACTURING INNOVATION (NNMI)

- Digital Manufacturing and Design Innovation Institute
 - DoD / UI Labs, Chicago
 - IPLI, El-mounayri, Tovar, Zhang, Wasfy, J Chen, Razban
- Institute for Advanced Composites Manufacturing Innovation
 - DoE / UT Knoxville
 - INDI, Agarwal, Zhang, Xie
- Flexible Hybrid Electronics Manufacturing Innovation Institute
 - DoD (AFRL) / ??? FlexTech is our partner
 - INDI, Ryu
- Clean Energy Manufacturing Innovation Institute on Smart Manufacturing
 - DoE / ??? Discussions going on
 - J Chen, others,
- Lightweight Innovations For Tomorrow
 - DoD / EWI, Detroit
 - Tovar??



Expertise by Department

Engineering Expertise						
BME	ECE	MUS	ME	Tech.	TLC	CIT/CGT
BioInstruments/Cardiology	Controls, Active Safety	Behavioral Interventions Research Methodology	Energy, Biomechanics	Learning Assessment	Human Resource Management, Leadership Development	Programming, SODAL, Research Methods
Medical Devices	VLSI, MEMS, Sensors	Music pedagogy/community music learning	PLM, Manufacturing	BIM Building Information Modeling	International education, cross- cultural communication	Animation, Motion Graphics
Biomaterials	Nanotechnology	Live Performance Audiotechnologies	Controls, Mechatronics	CAD/PLM	Human Resource Development, Administrative Coaching	Web Development, Mobile Apps
Biomechanics/Biofluids	Embedded Systems, Active Safety	MOOC	Energy	Fuel Cells	STEM, Organizational Leadership	Entrepreneurship
Biomaterials/Tissue Engineering	Medical Imaging, VHDL, FPGA, VLSI, 3D	Computer Interactivity, telematics, HCI	Materials, Energy	Clinical Technology	Sustainability	Animation, Motion Graphics
Biomechanics/Biofluids	Power Electronics, Renewable Energy	Computer Interactivity	Biomechanics	Manufacturing	Technical communication	Computer Applications
Neurosciences	Signal Processing, Multi- media, Audio	Networked music applications	Energy, Microfluidics	Motorsports Engr.	STEM Education	Network Security, IT
Biomechanical/MuscularSkeletal	Networks, Sensors, Real Time Systems	Media Enrichment	Combustion	Lighting, On-Line Teaching	Organizational Leadership, STEM	Wireless Network & Security,
Biomaterials/Polymers	Encryption, Security, Algorithms, S/ W Development	Creative Computing, Machine Learning	Energy, Robotics	Embedded Processors	Leadership Development	Wireless Network & Security, IT,
Biomechanical/Bone	Active Safety, Controls		Nano technology	Energy	Ethics, CIT	Interactive Media & Video
Neural Engineering	GPU H/W Accelerators, Computer Sys, FPGA		Energy, Biomechanics	Sustainability, Intl Service	Linguistics, Patient Provider Communication, Technical Communication	Program Management for CN
	Wireless Communication		Mod & Simulation, optimization	Motorsports Engr.	Technical communication, Curriculum Development	Bio Informatics, Data Management
	Controls, Active Safety		Energy, Materials	Civil Infrastructure		
	Power Systems		Electrochemistry, Batteries	Power Electronics, Controls		
	Artificial Intelligence		CFD, turbulence	Civil Infrastructure		
	Signal/Image Processing, Multi- media, Compression			Networks		
	Bio Energy, Renewable Energy			Strength of Materials		
	Undergraduate Projects, STEM			Bldg Security, Commercial Design		
				BIM Bldg Info Modeling & Service Learning		
				Construction Management		
				Healthcare Systems Engineering		
				Manufacturing, Vibration Analysis		
				Freshman Experience		
				Construction Management		
				Quality		

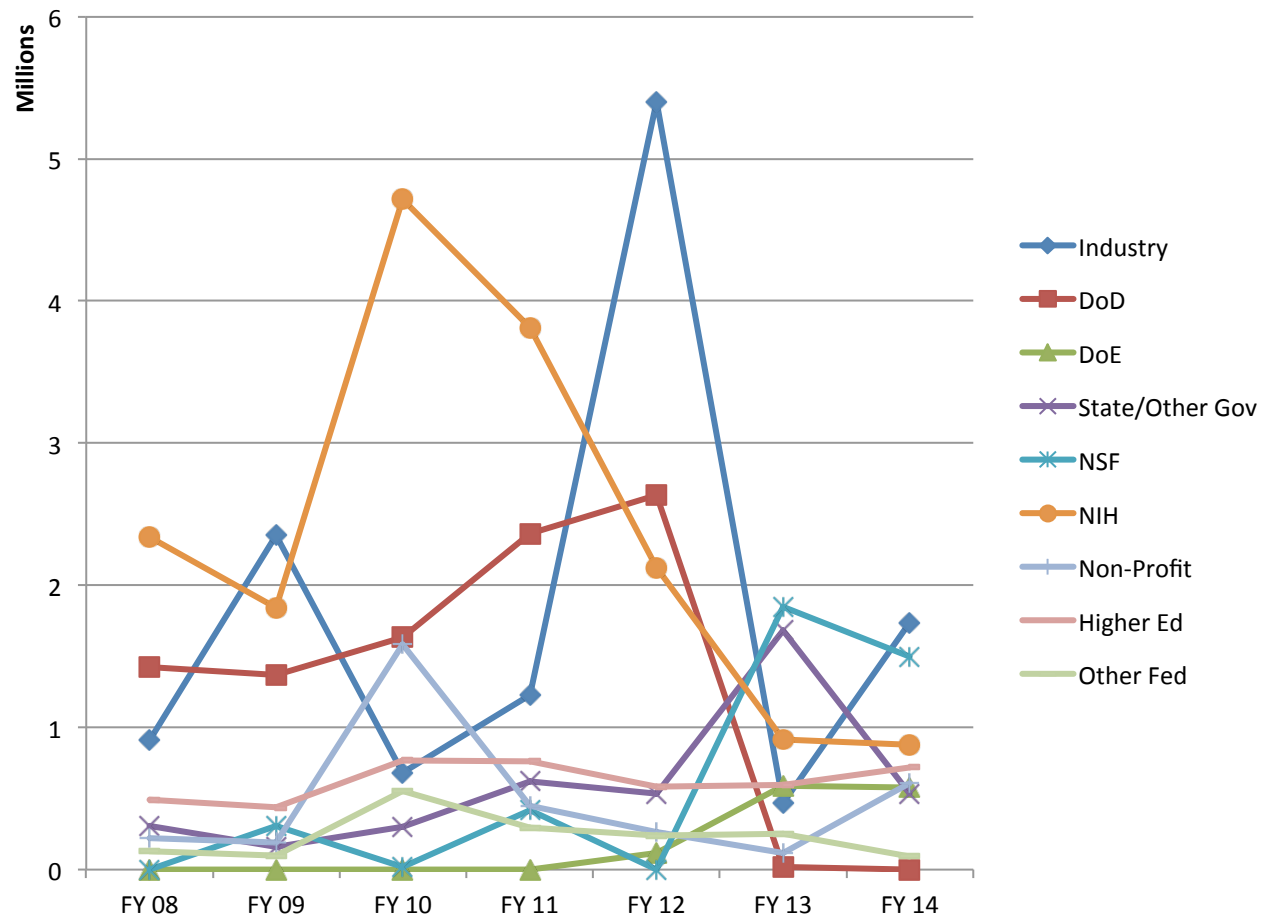


Microsoft Excel
97-2003 Worksheet

FY 15 Research Awards & Expenditures

- YTD as of March 2015
 - Received \$4.2M in 33 awards
 - Expended \$ 4.7M
 - 92 proposals for \$26.1 M
- Lower than last year, big impact of one PI
- Sponsor and department leaders are shifting

FY 2008 to FY2014 Awards by Sponsor Type



FY 12 to March 31, 2015

Awards by Department

