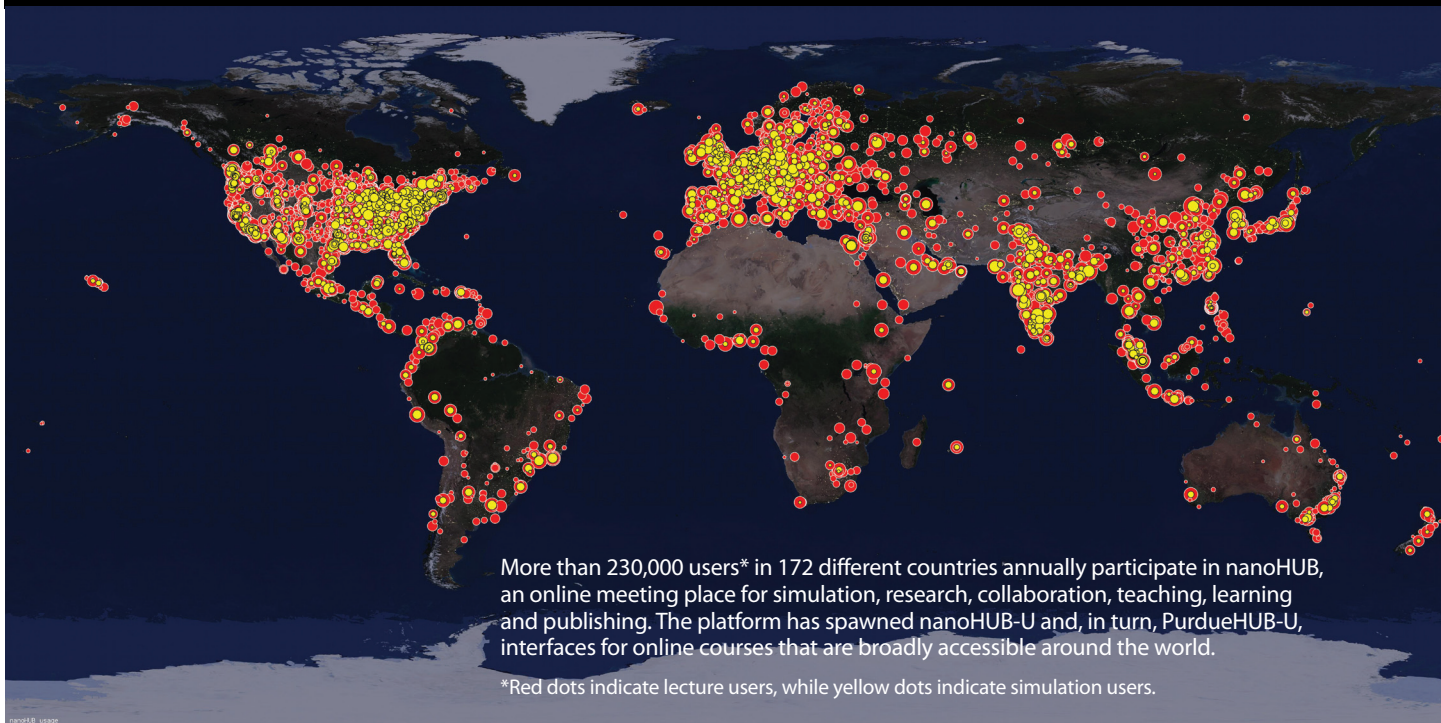


DIMENSIONS *of* DISCOVERY



» Worldwide Learning

Welcome

"Globalization, facilitated by the rapid development of new information and communication technologies, though representing a challenge for cultural diversity, creates the conditions for renewed dialogue among cultures and civilizations." — UNESCO

It's no secret that yesterday's land-grant universities have become today's global institutions. Simply look at the map above to see one illustration of Purdue's global reach today. In this issue, we highlight not only domestic partnerships but also global collaborations, from worldwide education initiatives (see story at right) to conferences on women's health and breast cancer, to published works viewed in print and on mobile devices around the world. ■

Global Online Education Initiatives Debut

Imagine your students learning the effects of different kinds of batteries on electric vehicles or the basics of pharmaceutical manufacturing in a digital clean room — all while they're sitting in coffeehouses and apartments all over the world. That's the vision of PurdueHUB-U, a \$2 million online education initiative that will extend Purdue's reach from campus classrooms to the farthest corners of the world.

Based on HUBzero, a powerful computing platform developed at Purdue and combined with an emphasis on learner-centered modular course development and distribution, PurdueHUB-U is intended to share the discoveries and expertise of Purdue faculty members.

"There's demand for affordable, targeted education that still allows students to ask questions and get feedback," says Tim Sands, acting president of Purdue. "Short, targeted modules will allow students and professionals to construct their own educational programs to meet their specific needs."

Adds Ananth Iyer, director of PurdueHUB-U, "This will be an online learning environment providing unique, new certifications not offered on campus. Professors will be creating content grounded on the millions of dollars in research funding they attract each year."

Leveraging cyberinfrastructure

PurdueHUB-U has evolved from nanoHUB-U, an initiative spearheaded by Mark Lundstrom, the Don and Carol Scifres Distinguished Professor of Electrical and Computer Engineering and founding director of the Network for Computational Nanotechnology (NCN), and Supriyo Datta, the Thomas Duncan

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Mitchell E. Daniels, right, meets with key Purdue administrators in preparation to become the university's 12th president in January 2013, replacing President France A. Córdova. Timothy D. Sands, left, is serving as acting president until Daniels assumes the post. Daniels' second and final term as Indiana's 49th governor ends in January. Sands, who has been at Purdue since 2002, has served as executive vice president for academic affairs and provost since 2010. Vic Lechtenberg will serve as acting provost during the transition. (Purdue University photo/Mark Simons). ■

Distinguished Professor of Electrical and Computer Engineering. Last year, Datta taught a two-part pilot course on the basics of nanoelectronics, attracting 900 students from 27 countries, most of whom were graduate students or industry professionals who paid \$30 for the class and a certificate of completion.

The course leveraged cyberinfrastructure already available through nanoHUB, the working platform for NCN users. "NanoHUB has been in business as a federally funded national project for 10 years. It now serves over 230,000 users annually with innovative nanotechnology course materials — the growth in annual usage is nothing but astounding," says Gerhard Klimeck, former NCN technical director and a professor of electrical and computer engineering, who now leads the NCN as its director.

"Purdue, NCN and nanoHUB have been on the vanguard of online educational resources for a decade," adds Lundstrom. Long before nanoHUB-U was launched, users could upload and view videos, interact with simulations and connect with researchers, industry professionals and students around the world.

Interactive courses

Massive Open Online Courses (MOOCs) like Datta's are a growing trend among working professionals seeking continuing education and students wanting to augment coursework. But while many universities simply upload videos of professors teaching courses, nanoHUB-U's are highly interactive, requiring students to engage in a kind of digital laboratory.

Iyer says that PurdueHUB-U's courses will be similar, adding that they'll be focused on specialty topics. "Initially, these will be niche courses, not a substitute for introductory chemistry," Iyer says. "This will be cutting-edge information for students that want to do more."

New nanoHUB-U classes

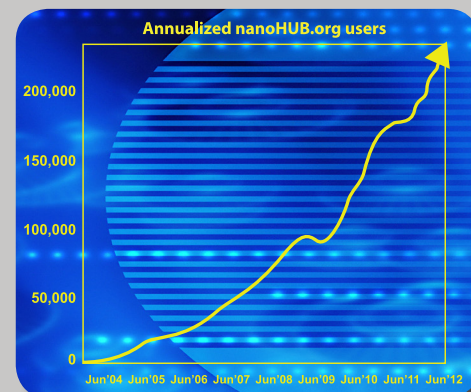
While PurdueHUB-U recruits faculty members and creates the necessary backend technology for a rollout over the next few months, students are currently engaged in the second class offered by nanoHUB-U.

Ron Reifenberger, professor of physics, and Arvind Raman, professor of mechanical engineering, spent months packaging their full-semester course on the atomic force microscope (AFM) into two five-week on-line courses. The first module began in August.

"We are convinced that as more researchers gain a fundamental understanding of AFM, then AFM will become more widely used and accepted," Reifenberger says. "When using an AFM, it's not always straightforward to understand the results. You must be cautious, and it really helps to understand the limitations of the instrument."

The courses will provide students access to 20-minute video lectures, lecture notes, homework with tutorials, quizzes, exams, Q&A forums for interacting with the professors and fellow students, and simulation tools on nanoHUB.

For more information, see www.nanohub.org/u and <http://u.hub.purdue.edu>. ■



Two Receive Presidential Early Career Awards in Washington, D.C.

Two Purdue University researchers have received Presidential Early Career awards for Scientists and Engineers from President Barack Obama.



Ian Kaplan, assistant entomology professor, and **Alice Pawley**, an assistant professor in the School of Engineering Education, were among 96 recipients honored in July by the White House. The award — also known as PECASE — is the highest honor bestowed by the U.S. government on science and engineering professionals in the early stages of their independent research careers.



Awardees are selected for their pursuit of innovative research at the frontiers of science and technology and their commitment to community service as demonstrated through scientific leadership, public education or community outreach.

Kaplan researches ecological approaches to pest management for vegetable crops, seeking to understand plant-insect interactions, the chemical

ecology of insects and sustainable biological control of pests through natural predators.

“This is a big honor, and I’m looking forward to the opportunities this will afford me to further my research,” said Kaplan, who has been at Purdue for nearly three years. “We try to apply ecological principles and ecological theory to best management practices for pests.”

Pawley studies why some groups, including white women and people of color, have remained chronically under-represented in engineering degree programs. “It’s a huge honor to be recognized by the White House,” said Pawley, who also is an affiliate faculty member in Purdue’s Women’s Studies program and the Division of Environmental and Ecological Engineering.

“Such recognition encourages the American public and funding agencies to support studies aimed ultimately at improving diversity in engineering. I am thrilled that feminist research methods hailing from women’s studies, blended with engineering education research questions, have been recognized in this way.” ■

Calcium Expert Honored with University’s Top Research Award

Connie Weaver, head and distinguished professor of nutrition science, is the 2012 recipient of the Herbert Newby McCoy Award, the most prestigious research honor given by Purdue University.

Weaver is being recognized for her work on calcium metabolism in adolescents and the impact of diet, gender, race and sexual maturity on calcium utilization. She also is a member of the Institute of Medicine, which is the health arm of the National Academy of Sciences.

“Professor Weaver’s findings have transformed the way the nation thinks about the value of calcium consumption, and especially its importance in establishing bone health in young girls that will last their lifetime,” says Richard Buckius, Purdue’s vice president for research.

Weaver is an expert in mineral bioavailability, calcium metabolism and bone health, and she has published more than 150 original research articles and 100 books, book chapters and reviews. Today’s calcium requirements for North America and the national recommended dietary guidelines in adolescents are based on her research findings that the optimal calcium intake is 1,300 milligrams for healthy bone mass.

She also has found that boys utilize calcium more efficiently than girls, but they still need 1,300 milligrams a day to build bigger bones, and that black people utilize calcium more efficiently than white people and build 12 percent stronger skeletons on average. Her work also has looked at calcium retention in Chinese-American youth and obese children.

Weaver is deputy director of the National Institutes of Health-funded Clinical and Translational Science Institute. In 2005 she was appointed to the U.S. Dietary Guidelines Advisory Committee, and she served on the National Academy of Sciences Food and Nutrition Board Panel to develop new requirement recommendations for calcium and related minerals.

The McCoy Award, established in 1964 by Ethel Terry McCoy in memory of her husband, is presented annually to a Purdue student or faculty member for outstanding contributions to science. ■



McCoy Distinguished Lecture by Connie Weaver

“Chasing Calcium into Bones and Beyond”

- » When November 14, 3:30 p.m.
- » Where Stewart Center, Fowler Hall

Reception

- » When November 14, 4:30 p.m.
- » Where Stewart Center Art Gallery

NSF CAREER Awards Focus on Knowledge Retrieval, Scattering Theory

Two more Purdue faculty members have received Faculty Early Career Development (CAREER) awards from the National Science Foundation (NSF).

Jeffrey Karpicke, an associate professor of psychological sciences, has received funding for his project, "Retrieval-Enhanced Learning of Foundational Conceptual Knowledge."

Retrieval practice, which engages students in active reconstruction of their knowledge, has been shown to have powerful effects on meaningful learning and long-term retention.

Karpicke will apply recent findings about the effectiveness of retrieval practice to science education to determine the impact on students' learning in introductory undergraduate biology.

Around 200 students will participate in the study, which will integrate retrieval practices with science concepts in biology to test for meaningful learning and long-term retention of knowledge gains.



Peijun Li, assistant professor of mathematics, also has received funding for his project, "Direct and Inverse Scattering Problems for Wave Propagation in Complex and Random Environments."

The dramatic growth of computational capability and the development of fast algorithms have transformed

the methodology for scientific investigation and industrial applications in the field of scattering theory.

Li proposes to develop mathematical models, examine mathematical issues and design computational methods for new and important classes of direct and inverse problems that arise from acoustic and electromagnetic wave propagation in complex and random environments. ■



Showalter Awards

Parkinson's disease, muscle regeneration and multi-drug resistant bacterial infections are some of the research topics being investigated by Purdue's 2012 Showalter Award recipients.

Since 1975, Purdue researchers have benefited from grants through the Ralph W. and Grace M. Showalter Research Trust Fund. Eligible areas of research, as described by the benefactors, are air and water pollution, biochemistry, disease control and prevention, new technologies in food production, and medical and biophysical instrumentation.

This year's honorees are:

Bryan W. Boudouris, chemical engineering, "Synthesis and Microstructural Characterization of Functional Block Copolymer Membranes for Enhanced Therapeutic Protein Purification," \$75,000

Albert Bowers and **Tony R. Hazbun**, medicinal chemistry and molecular pharmacology, "Harnessing Orphan Drugs: Accessing the Anticancer Activity of Thiazolyl Peptides," \$73,302

Ryan Drenan, medicinal chemistry and molecular pharmacology and **Julia A. Chester**, psychological sciences, "Nicotinic Acetylcholine Receptors as Therapeutic Targets in Parkinson's Disease," \$75,000

Yava Jones, comparative pathobiology, **Doug LaCount**, medicinal chemistry and molecular pharmacology, **V. Jo Davisson**, medicinal chemistry and molecular pharmacology and **Harm HogenEsch**, school of veterinary medicine, "Selective Antagonism of v-ATPase to Treat Viral Infection," \$75,995

Shihuan Kuang, animal sciences and **Riyi Shi**, basic medical sciences, "Bioactive Scaffolds for Highly Efficient Muscle Regeneration," \$75,000

Wanqing Liu, medicinal chemistry and molecular pharmacology and **Min Zhang**, statistics, "A Genome-wide Integrated Analysis of MicroRNAs in Human Hepatic Fat Accumulation," \$75,000

Amy Lossie, animal sciences and **Joseph Irudayaraj**, agricultural and biological engineering, "Quantification and Real-time Imaging of Pre-MicroRNAs/mRNAs in Live Cells Using Super-Resolution," \$75,000

Russell Main, basic medical sciences, "Estrogen Receptor Beta is Critical in Governing Skeletal Growth and the Anabolic Response to Mechanical Stimuli," \$74,947

Kinam Park, biomedical engineering, "Glucose Detection in Exhaled Breath Condensate," \$60,000

Mohamed Seleem, comparative pathobiology and **Mark Cushman**, medicinal chemistry and molecular pharmacology, "Development of Novel Antimicrobial Compounds Against Multidrug Resistance Bacterial Pathogens, Including Methicillin-Resistant Staphylococcus Aureus (MRSA)," \$75,000 ■

» Appointments and Positions

Raymond Leads Center for Environment

Purdue political science professor **Leigh Raymond** has been selected as the new director of Discovery Park's Center for the Environment, a research center dedicated to meeting the world's emerging environmental challenges.



Raymond's primary role will be to foster a culture of inclusiveness among the wide range of research and interests in environmental issues and themes already under way at Purdue. He co-authored the original proposal creating the center in 2006 and is an expert on environmental and alternative energy policy issues.

He has an undergraduate degree in philosophy from Yale University and master's and doctorate degrees in environmental science, policy and management from

the University of California, Berkeley. ■

Bertino Becomes Cyber Center Director

Elisa Bertino, professor of computer science, has been named director of Discovery Park's Cyber Center.

Bertino, who joined the Purdue faculty in 2004, also serves as research director for the Purdue-based Center for Education and Research in Information Assurance and Security (CERIAS). She has a doctorate in computer science from the University of Pisa and is considered a research leader in information security, database systems, and computer applications covering a range of areas from medicine to the humanities.



The Cyber Center, launched in 2005, is focused on creating systems and tools to disseminate and preserve scientific and engineering knowledge. ■

Irudayaraj Named Deputy Director of Bindley Bioscience Center

Purdue biological engineering professor **Joseph Irudayaraj** has been selected as the inaugural deputy director of the Bindley Bioscience Center in Discovery Park.

Irudayaraj, who has been at Purdue since 2005, will focus on working across the Purdue campus to create and maintain a high level of collegiality among faculty, researchers, staff and students. In addition, he will assist in the day-to-day leadership of Bindley.



Irudayaraj, who received his doctorate degree in biosystems engineering from Purdue in 1990, is researching bionanotechnology techniques that allow for multiplex mechanistic sensing and quantification of molecular markers, genetic material, DNA modifications and drug localization in biological systems. ■

Associate Deans of Research

Associate deans for research work closely with their deans, department heads, faculty, and graduate students and the Office of the Vice President for Research to facilitate research program development for their school or college.

College of Agriculture — **Karen I. Plaut**, associate dean of agriculture, director of agricultural research programs, professor of animal science, 494-8362 or kplaut@purdue.edu

College of Education — **James D. Lehman**, associate dean for discovery and faculty development, 494-8474 or lehman@purdue.edu

College of Engineering — **Melba M. Crawford**, associate dean of engineering for research, professor of agronomy, civil and electrical and computer engineering, chair of excellence in earth observation, 496-3224 or mcrawford@purdue.edu

College of Health and Human Sciences — **Dorothy Teegarden**, associate dean for research and graduate programs, professor of nutrition science, 494-8246 or teegarden@purdue.edu

College of Liberal Arts — **Andrew S. Buckser**, associate dean for research and graduate education, professor of anthropology, 496-2857 or buckser@purdue.edu

Krannert School of Management — **Ananth Iyer**, associate dean of graduate studies, Susan Bulkeley Butler Chair in Operations Management, 494-4514 or aiyer@purdue.edu

College of Pharmacy — **Eric L. Barker**, associate dean for research, associate professor of medicinal chemistry and molecular pharmacology, 494-9940 or barkerel@purdue.edu

College of Science — **Joseph S. Francisco**, associate dean for research and graduate education, William E. Moore Distinguished Professor of Physical Chemistry, 494-7851 or francisc@purdue.edu

College of Technology — **Edie Schmidt**, interim associate dean for research and professor of information technology, 494-1097 or schmidte@purdue.edu

School of Veterinary Medicine — **Harm HogenEsch**, associate dean for research and professor of immunopathology, 496-3467 or hogenesch@purdue.edu

The Graduate School — **Phillip E. Pope**, senior associate dean and professor in forestry and natural resources, 494-4586 or ppope@purdue.edu

International Programs — **Michael A. Brzezinski**, interim vice provost for global affairs and dean of international programs, 494-5770 or mbrzezinski@purdue.edu

Libraries — **D. Scott Brandt**, associate dean for research, professor of library science, 494-2889 or techman@purdue.edu ■

Free, Fast BLAST Processing with Friendly Web Interface Now Available at Purdue

BLAST, the popular bioinformatics software that finds regions of similarity between biological sequences, is now available to Purdue researchers and their students at no charge through Purdue's DiaGrid distributed computing system.

The easy-to-use web-based tool, called BLASTER, is available at <http://diagrid.org/resources/blastgui>.

DiaGrid

84,996,678 jobs run to date

No Forms. No waiting. Just instant access to high-throughput computing

[Register Now](#)

It only takes a minute. [Sign Up](#), confirm your email address and you're in.

Tools
We support BLAST, OpenSees, and other programs used by thousands of researchers. Find a tool, click the launch button, and start computing. Coming soon, visit our DIY area to use your own tools on DiaGrid. Watch our

Incentives
Earn your way to VIP Status and receive more cycles and higher priority. Tell us about what you're doing and earn more cycles. Get involved by asking/answering questions in the community or suggest improvements.

"DiaGrid is particularly suited for research using large scale BLAST searches because it involves numerous serial computations that can be parceled out to any number of available processors," says Carol Song, senior research scientist at the Rosen Center for Advanced Computing, ITaP's research computing unit. "Generally, the more processors the better, and DiaGrid can make thousands of processors available at a time."

DiaGrid taps idle processors in offices, student computer labs, cluster supercomputers and more. It is based on the Condor distributed computing system, which works by pooling machines over the Purdue campus network and off campus via the Internet and fast research networks. The pool now includes nearly 50,000

processors.

ITaP introduced BLAST on DiaGrid in December 2011 and developed the BLASTER Web interface based on user feedback. Version 1.1, released this summer, adds support for custom databases, allowing researchers to upload their own protein or nucleotide sequences to search against.

"BLASTER is very useful," says Nick Marra, a doctoral student in Professor Andrew DeWoody's lab who's studying genes involved in evolutionary adaptation. "The availability of BLASTER on DiaGrid has reduced the time of results for some of my computations from days to a couple of hours." ■



Nick Marra, doctoral student in Professor Andrew DeWoody's lab, says the BLASTER tool has reduced his processing time on some jobs from days to hours.

Greg Kline is a science and technology writer, Information Technology at Purdue, 765-494-8167 (office), 765-426-8545 (cell), kline@purdue.edu.



Jon Miller, ITaP's data center and enterprise storage manager, with Purdue's new EMC Corporation cloud storage system, which gives faculty, staff and students 100 gigabytes of space.

Storage Project Gives Purdue Researchers a Lot More Room for Their Data

A partnership between Purdue and digital storage giant EMC Corporation not only gives campus researchers more freedom to store and access their large data sets, but also promises to yield advances in data analysis technology.

The new BoilerBackpack service, which gives faculty, staff and students 100 gigabytes of cloud storage, is just the first step in the partnership between the University and EMC. The service is a Purdue version of popular cloud data services, which typically offer only 2 GB to 7 GB of free storage. Like those services, Backpack will allow students and faculty to sync files, access those files from any computer, and share files or folders with others after it rolls out gradually this fall. BoilerBackpack apps will eventually be available for Android smartphones, Apple iPhones and iPads, as well as Windows and Macintosh laptop and desktop computers.

Perhaps more importantly, Purdue and EMC have begun a five-year collaboration to address challenges in analyzing massive data sets — so-called Big Data — to gain insights and forecast outcomes.

“We wanted to look well beyond current practices and work to develop new solutions that can advance data science and move research forward,” says Gerry McCartney, vice president for information technology, chief information officer and Olga Oesterle England Professor of Information Technology.

The hardware behind BoilerBackpack is a new storage-oriented high-performance system made up of nodes from EMC and featuring nearly 3 petabytes of storage space with ample room for growth.

“That’s already twice the storage ITaP had throughout the campus previously,” says Jon Miller, ITaP’s data center and enterprise storage manager. “The storage system is located in an ITaP data center on campus, which makes it faster for Purdue users to access their data than remote cloud storage would be and adds a level of security.” ■

BoilerBackpack Features

- » The cloud will generally be faster and more secure than server farms in farflung locations because data will be stored in one of Purdue’s data centers and won’t have to travel far to researchers’ computers.
- » In addition to their 100 GB cloud allotment, Purdue researchers will be able to purchase other storage on demand as needed.
- » EMC and Purdue will jointly develop a new architecture for research data management and curation.
- » EMC and Purdue will work to develop new technologies to ingest, analyze, transfer and manage enormous research data sets, especially bioinformatics data.
- » With EMC’s assistance, Purdue will begin building a repository of all Purdue intellectual property.
- » Research engineers and scientists from Purdue and EMC will collaborate on academic papers and presentations, as well as presentations at trade conferences. ■

Greg Kline is a science and technology writer, Information Technology at Purdue, 765-494-8167 (office), 765-426-8545 (cell), kline@purdue.edu.

>> New Books, Journals by Purdue Faculty Members





With nearly 2,700 Purdue faculty members representing 78 different countries and more than 200 different major areas of study, it's not surprising that the scope of their published work is wide.

Here is a snapshot of journals and books authored recently by Purdue investigators, capturing the fascinating world of research and scholarship unique to this university — from the case for peak oil, to the science and art of winemaking, contemporary marketing of agricultural products, the effects of deployment on families, the emerging field of metascience and life for the Chicago Cubs before the curse.

Learn more about the work of your colleagues at www.purdue.edu/research/vpr/publications/collage/index.php, or scan the QR code below. ■



New Center for Drug Discovery

A newly created center on the West Lafayette campus is designed to facilitate Purdue's growing drug discovery enterprise.

The Center for Drug Discovery, approved in August, will help to showcase the depth and breadth of Purdue's drug discovery programs to pharmaceutical companies and other entities. Phil Low, the Ralph C. Corley Distinguished Professor of Biochemistry and founder of the biopharmaceutical company Endocyte, will serve as its director.

"There's a huge strength on campus in drug discovery, but it's very diverse — different departments, different schools, different diseases," says Marietta Harrison, associate vice president for research and deputy director of the new center. "This will facilitate efforts by enabling a coordinated response to funding opportunities."

Academic research has evolved from very basic research to more translational work. But many compounds developed in academic laboratories never get beyond the test tube because researchers don't have funding for pre-clinical studies.

The new center will help overcome that hurdle by promoting Purdue's drug discovery efforts more prominently. One initiative already in place is *Drug Discovery at Purdue* (www.purdue.edu/research/vpr/publications/index.php), a catalogue of faculty members that debuted in 2011 and is being updated each year. Other efforts, such as a drug discovery website and membership in multi-institutional consortia, are currently in the works.

The center, which will be affiliated with the drug discovery building (pictured below) currently being constructed, also will offer educational and networking opportunities.

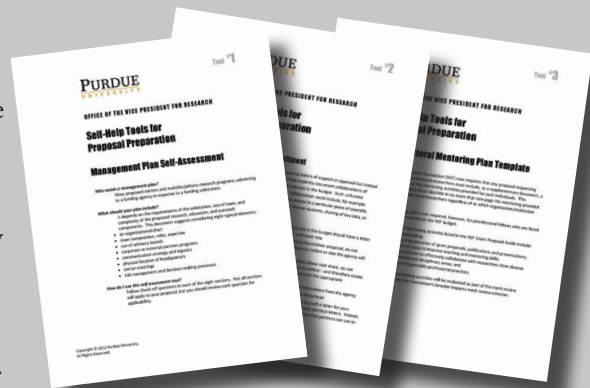
"We will sponsor workshops and seminars, and we'll facilitate collaborations both within Purdue and outside, with a particular emphasis on clinical partners such as IU Health Arnett and the IU School of Medicine," Harrison says. ■



New Resources for Preparing Successful Research and Education Proposals

The Office of the Vice President for Research (OVPR) has announced new online resources to help faculty members with the proposal preparation process.

"The goal is to provide a suite of agency-responsive, on-demand resources that busy faculty teams can draw from to create higher quality proposals in perhaps a little less time," says Sally Bond, lead proposal coordinator. Step-wise guidance and tailorable samples are available on the OVPR website: www.purdue.edu/research/vpr/rschdev/proposal_prep_resources.php. They include a new series of downloadable self-help tools for proposal development, citable Purdue institutional description text, and a Frequently Asked Questions option for quick response to common inquiries.



Self-Help Tools

Three self-help tools in the growing series are already available: a step-by-step Management Plan Self-Assessment, sample Annotated Letters of Individual or Institutional Commitment, and a Postdoctoral Mentoring Plan Template that will be particularly useful for National Science Foundation submissions. Additional self-help tools are coming online soon, including a Budgeting 101 for Proposals, Dos and Don'ts of Creating an Education Plan, and Increasing the Diversity Component of Your Proposal.

Citable Institutional Text

When a funding agency requires general information about a submitting institution, faculty members now can use the new citable Purdue institutional text in its entirety or can cut and paste just the most appropriate paragraphs. Bond advises faculty members to cite the provided reference so that they will avoid any plagiarism issues.

FAQs

"We now vet questions, comments, and suggestions from Purdue faculty and on a 24/7 FAQ site," Bond says. "We will respond to you directly and also post the FAQ question/answer to inform the rest of the campus community." The FAQs are located at www.purdue.edu/research/vpr/rschdev/FAQs.php.

All of these new online resources are part of an expanding set of proposal preparation resources in the OVPR that includes proposal coordinator and consultation services available upon request to Purdue principal investigators. For details, see www.purdue.edu/research/vpr/rschdev/proposal_preparation_assistance.php.

"One of the central purposes of our Research Development team is to lower barriers to proposal preparation," says Jeff Bolin, associate vice president for research. "These new tools were developed with this goal in mind and to target common areas of faculty needs." ■

Increasing the Impact of Transportation Research through Campus Partnership

For 75 years now, the Joint Transportation Research Program (JTRP) — a partnership between Purdue and the Indiana Department of Transportation (INDOT) — has helped the state save millions of dollars through innovation in the transportation infrastructure. The results of these collaborative research projects are documented in 1,500 technical reports, which are relevant far beyond Indiana's borders. And now, thanks to the assistance of Purdue Libraries, this information is more accessible than ever.

In 2010, in response to a request from JTRP director Darcy Bullock, a professor of civil engineering, Purdue Libraries began digitizing all printed technical reports and importing them into Purdue e-Pubs, the Libraries' online publishing platform. Faculty and staff also enhanced bibliographic components, added digital object identifiers (DOIs) to make each publication citable and discoverable, and worked with Purdue University Press to streamline publication of new reports.

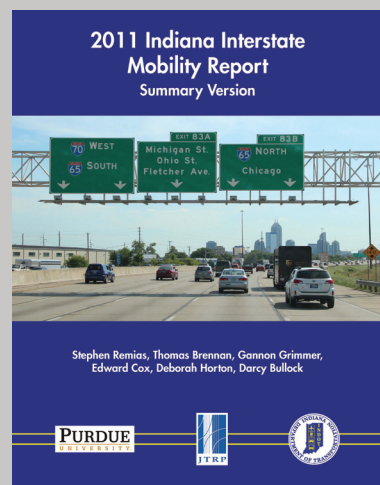
Today, JTRP reports are easily discoverable through scholarly search engines, including Google Scholar and TRID, the federal index of transportation literature. PDF versions can be downloaded free of charge from Purdue e-Pubs (<http://docs.lib.purdue.edu/jtrp>) or ordered in print-on-demand format. Road School presentations are also available online a few weeks after the end of each event.

Over the last year, JTRP reports have been downloaded almost 150,000 times and have attracted thousands of online visits from overseas, especially China and India, as well as all 50 states. Some older reports, including a 1967 manual on herbicide use, have been surprisingly popular.

"As the University's center of excellence in the management and dissemination of information, Purdue Libraries is a natural partner for JTRP to effectively and efficiently communicate our research findings," says Bullock.

"Every meeting we have suggests new collaborative projects through which we can extend the value JTRP offers to INDOT and Indiana taxpayers even further."

For example, the partnership has recently produced the first Indiana Interstate Mobil-



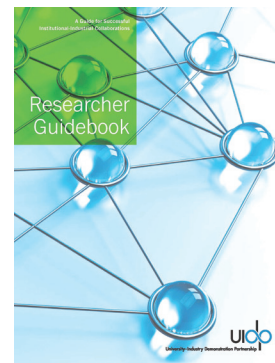
ity Report, which uses geospatial data from mobile devices to characterize traffic flow and congestion on Indiana's interstates. That data is essential for the state to assess the impact of recent capital construction projects and identify emerging needs for transportation infrastructure investments. ■

Charles Watkinson is head of scholarly publishing services for Purdue Libraries, and director of Purdue University Press.

The partnership has recently produced the first Indiana Interstate Mobility Report, which uses geospatial data from mobile devices to characterize traffic flow and congestion on Indiana's interstates.

Researcher Guidebook Aims to Improve Institutional-Industrial Partnerships

A team of contributors from universities, industry and national laboratories has created a publication aimed at helping industrial and institutional researchers work together more effectively.



The Researcher Guidebook — A Guide for Successful Institutional-Industry Collaborations is now available online as a resource for active researchers from academia, government laboratories and industry.

The practical manual was prepared by a working group of more than 30 organizations and institutions that belong to the University-Industry Demonstration Partnership. The UIDP is an organization of universities and companies designed to enhance the value of collaborative partnerships between university and industry in the United States.

The guide is divided into two sections — one to address issues specific to university, non-profit and government researchers and another focused on issues specific to industry researchers. By presenting these two different perspectives, the guidebook identifies key elements for developing more successful collaborations and provides practical advice on a range of topics.

Representatives from Purdue's Office of the Vice President for Research, Office of Engagement and Krannert College of Management assisted in the book's development.

To download the document, visit http://sites.nationalacademies.org/PGA/uidp/PGA_055253. You may also purchase a copy for Kindle devices at www.amazon.com. ■

New Regulatory Resources Available Online

The Office of Research Integrity and Regulatory Affairs added new items to its website to assist investigators in managing regulatory responsibilities.

New Resource for Export Controls

The site offers additional guidance through an interactive web tool about export control considerations when traveling. The web tool is a short, uncomplicated series of questions and tips about how to minimize risk. Users will be able to link to helpful resources and find places to direct questions. To access this new resource, please see www.purdue.edu/research/vpr/rschadmin/rschoversight/export/index.php and click on "Traveling."

New Resources for Responsible Conduct of Research Training

Investigators sponsored by the National Science Foundation (NSF) will find additional resources to assist with the Responsible Conduct of Research (RCR) requirement. Detailed instructions for completing the online RCR training are now featured in a quick reference card on the website.

Because investigators are required to retain auditable documentation of RCR training, the site now features a tracking form to help with this process. The tracking form can be used by faculty to keep up-to-date electronic or hard-copy records of RCR training completion as mandated by NSF.

The tracking form is an optional resource. To access the new tools for RCR, please see www.purdue.edu/research/vpr/rschadmin/rcr/index.php and scroll to the bottom of the page.

Questions? Please feel free to e-mail our team at vprregulatory@purdue.edu or export-controls@purdue.edu. ■

Ianthe "Cookie" Bryant-Gawthrop is director, research regulatory compliance within the Office of Research Integrity and Regulatory Affairs.

New Conflict of Interest Requirements for All Investigators on NIH Grants

New requirements for disclosure of investigator financial interests and management of resulting conflicts of interest became effective for proposals submitted to and grants funded by National Institutes of Health (NIH) and other Public Health Service (PHS) agencies on or after August 24, 2012.

This regulation includes changes to the responsibilities of project "investigators," the grantee Institution (Purdue), and the PHS agency (such as NIH) sponsor. "Investigators" are all individuals, regardless of title or position, who are responsible for proposing, conducting and/or reporting research under a PHS/NIH grant.

New requirements of the regulation include:

- » a requirement that investigators complete a tutorial related to financial conflict of interest prior to participating in PHS agency-funded research;
- » a modification to the definition of "Significant Financial Interest" and resulting expansion of the information that must be disclosed by investigators at the time of proposal submission;
- » an increase in the information that must be reported to the PHS agency sponsor and made accessible to the public when a conflict of interest is identified;
- » an increase in Purdue's responsibilities for oversight of disclosure of Significant Financial Interest and management of conflicts of interest by subcontractors and other subrecipients from a Purdue grant; and
- » more explicit requirements for institutional response to investigator non-compliance.

The full text of the new regulation, titled "Responsibility of Applicants for Promoting Objectivity in Research for which Public Health Service Funding is Sought and Responsible Prospective Contractors," which was published in the Federal Register (Vol. 76, No. 165, August 25, 2011), is available via a link from the NIH Conflict of Interest homepage (<http://grants.nih.gov/grants/policy/coi/index.htm>).

Additional information about the new regulation is available on the OVPR website at www.purdue.edu/research/vpr/rschadmin/

[coi/index.php](http://www.purdue.edu/research/vpr/rschadmin/coi/index.php). If you have questions about the requirements of the new regulation, contact Peter E. Dunn, associate vice president for research (pedunn@purdue.edu). ■

Peter E. Dunn is associate vice president for research (pedunn@purdue.edu).



Sponsored Program Year-to-Date Activity

Awards by Sponsor

July 1, 2011 to June 30, 2012

SPONSOR	FY2012 (YTD 6/30/2012)		FY2011 (YTD 6/30/2011)		% Change	
	NO.	\$ AMOUNT	NO.	\$ AMOUNT	NO.	\$ AMOUNT
National Science Foundation	330	89,221,628	330	98,398,191	0%	-9%
Dept. of Health and Human Services	271	45,812,614	310	58,987,465	-13%	-22%
Dept. of Defense	262	34,573,899	289	39,569,086	-9%	-13%
Dept. of Energy	130	20,484,904	141	35,678,390	-8%	-43%
Dept. of Agriculture	152	23,656,528	161	31,436,041	-6%	-25%
National Aeronautics and Space Administration	67	6,235,592	60	6,028,311	12%	3%
Other Federal	81	9,601,709	123	13,364,348	-34%	-28%
Dept. of Education	21	4,722,728	22	9,120,927	-5%	-48%
Environmental Protection Agency	23	2,005,378	26	2,566,336	-12%	-22%
Dept. of Transportation	28	4,699,931	14	3,187,660	100%	47%
Agency for International Development	8	1,007,423	27	8,381,406	-70%	-88%
Total Federal	1,373	\$242,022,335	1,503	\$306,718,161	-9%	-21%
Industrials and Foundations	1,724	73,224,587	1,671	65,596,871	3%	12%
State/Local Governments	171	22,391,985	202	27,184,500	-15%	-18%
Purdue Research Foundation/ Purdue University	1,023	13,682,936	801	12,894,862	28%	6%
Foreign Governments	29	2,230,533	22	7,164,115	32%	-69%
Total Non-Federal	2,947	\$111,530,041	2,696	\$112,840,348	9%	-1%
Total Purdue System-wide	4,320	\$353,552,376	4,199	\$419,558,510	3%	-16%

Data provided by Sponsored Program Services

A comprehensive monthly awards list, including search and sort capabilities, is available online. Please visit the OVPR website at www.purdue.edu/research/vpr/ or scan the QR code at right to view on your mobile device.



SEPTEMBER

Purdue Water Community Fall Gathering and Drought Information Session

- » **When:** September 6, 4:00 p.m. - 7:00 p.m.
- » **Where:** Hall for Discovery and Learning Research, Rooms 131 and 134
- » **Contact:** Jill Wable, jwable@purdue.edu, 494-1610
- » **URL:** www.purdue.edu/discoverypark/water/events/view.php?id=1030

The program will include two presentations on the impact of the ongoing drought on our natural resources and the price of food. A reception and an opportunity to converse with others interested in all aspects of water will follow.

Fourth Annual Senator Richard G. Lugar Collegiate Energy Summit

- » **When:** September 14, 9:30 a.m.-5 p.m.
- » **Where:** Discovery Park
- » **Contact:** Anthony Wurl, energyforum@purdue.edu
- » **URL:** www.purdueenergyforum.org/energy-summit.html

The summit is designed to engage, motivate and encourage collegiate student leaders to focus on America's energy security. Events include tours, workshops and a presentation by Senator Dick Lugar, a long-time advocate of energy independence.

HUBBUB 2012!

- » **When:** September 24-25, 9 a.m.-5 p.m.
- » **Where:** IUPUI University Place Conference Center, Indianapolis
- » **Contact:** Diana Hancock, 494-0840, or Nikki Huang, 494-0524; hubbub@hubzero.org
- » **URL:** www.HUBzero.org

This two-day symposium will show how HUBzero open source software solution empowers projects in nanotechnology, health-care research and other areas of engineering and science. Speakers will include researchers, educators and practitioners addressing topics such as the role of cyberinfrastructure in research and education, team science and community sharing. The use case tutorial track will help participants learn about the power of hubs.

Shell Energy Day: Research and Recruitment Symposium

- » **When:** September 27, 8:30 a.m.-5 p.m.
- » **Where:** Hall for Discovery and Learning Research, Room 131
- » **Contact:** Pankaj Sharma, sharma@purdue.edu, 496-7452
- » **URL:** www.purdue.edu/discoverypark/energy/events/view.php?id=983



OCTOBER

Third International Symposium on Breast Cancer Prevention

- » **When:** October 10-12
- » **Where:** Stewart Center, Room 206
- » **Contact:** Kris Swank, 494-4674
- » **URL:** www.purdue.edu/breastcancer/

The event will bring together global public health actors, advocates, and researchers on breast cancer prevention, to discuss biological and engineered models, animal models, nanotechnology, tissue banks and data hubs; nutritional models and behavioral models; and economic and business models, healthcare policy models and communication.

Cancer Culture and Community Colloquium (Part One) — Creating Hope - Look Good Feel Good Health Fair

- » **When:** October 28, 2012, 1:30-3:30 p.m. (health fair); 5-8 p.m. (entertainment)
- » **Where:** Jefferson High School
- » **Contact:** Susan McCreery, smccreer@purdue.edu, 496-6147
- » **URL:** www.purdue.edu/discoverypark/oncological/programs/ccf.php

Part of the 2012 Cancer Culture and Community Colloquium, the event will include information booths showcasing community resources for people with cancer, along with a talent show featuring music, dancing, drama and personal testimonials. Artwork by Indiana artists also will be on display.

Regenstrief Center for Healthcare Engineering Fall Speaker

- » **When:** October 24, 2012, 8-10 a.m.
- » **Where:** Faculty Lounge, Purdue Memorial Union
- » **URL:** www.purdue.edu/rche

Allen Vaida, executive vice president for the Institute of Safe Medication Practices (ISMP), will present about current efforts to improve hospital medication safety, including the use of infusion pumps. Vaida's presentation is open to the public and coincides with the Infusion Pump Informatics member conference, also hosted by RCHE.

NOVEMBER

Cancer Prevention Retreat with Gary Stoner

- » **When:** November 2, 11:30 a.m.-3 p.m.
- » **Where:** Stewart Center, Room 218
- » **Contact:** Kris Swank, kswank@purdue.edu, 494-4674

This joint retreat of the Cancer Prevention and Control Group and the Obesity and Cancer Discovery Group will feature Dr. Gary Stoner, professor of medicine at the Medical College of Wisconsin and director of the Molecular Carcinogenesis and Chemoprevention Program in the new Cancer Center.

Purdue Water Community Fall Meeting

- » **When:** November 6, 4:00 p.m. - 7:00 p.m.
- » **Where:** Hall for Discovery and Learning Research, Rooms 131 and 134
- » **Contact:** Jill Wable, jwable@purdue.edu, 494-1610
- » **URL:** www.purdue.edu/discoverypark/water/events/view.php?id=1031

How to Write an NIH Proposal or Resubmission: Strategies, Grantsmanship and Review Process

- » **When:** November 6, 11:30 a.m.-1 p.m.
- » **Where:** Stewart Center, Room 322
- » **Contact:** Perry Kirkham, pkirkham@purdue.edu, 496-3645
- » **URL:** www.purdue.edu/research/vpr/rschdev/events.php

The presentation will help resolve common questions and misconceptions surrounding a successful NIH proposal, including proposal content, templates, and the review process, while also reviewing Purdue resources available to PIs.

6th Science Journalism Laureates Town Hall Meeting

- » **When:** November 8, 10:30 a.m.
- » **Where:** Lawson Computer Science Foyer

A panel of top science journalists will join new science laureates in a one-hour public town hall meeting. Moira Gunn, a Purdue alumnus and Producer of *Tech Nation* and her colleague David Ewing Duncan, chief correspondent for BioTech Nation will serve as co-moderators of the discussion, during which questions will be taken from the audience. Event is free and open to the public. The forum will be taped for later broadcast on the radio show *Tech Nation*.

Cancer Culture and Community Colloquium (Part Two) —

- » **When:** November 8, 7:30 p.m.
- » **Where:** Stewart Center, Fowler Hall
- » **Contact:** Kris Swank, kswank@purdue.edu, 494-4674
- » **URL:** www.purdue.edu/discoverypark/oncological/programs/ccp.php

Will Reiser, screenwriter of the movie *50/50* and a cancer survivor, will be the featured speaker at this year's Cancer Culture and Community event, which examines people's responses to cancer as exhibited through the arts and literature.

Write Winning Grants Seminar

- » **When:** November 16, 8:30 a.m. - 4:30 p.m.
- » **Where:** Stewart Center, Room 302
- » **Contact:** Sue Grimes, sgrimes@purdue.edu, 494-5858
- » **URL:** www.purdue.edu/research/vpr/rschdev/events.php

David Morrison, of Grant Writers' Seminars and Workshops, LLC, will return to the Purdue campus for this popular grant writing seminar. Contact your associate dean for research to learn more about the seminar and subsequent opportunities. Registration is required and will open in early October.

JANUARY

Title Class Offering (ABE 691): Life of a Faculty Entrepreneur — Discovery, Development, Translation

- » **When:** Thursday evenings beginning January 20, 2013
- » **Where:** Burton D. Morgan Center for Entrepreneurship
- » **Contact:** Michael Ladisch, ladisch@purdue.edu, 494-7022
Nathalie Duval Couetil, natduval@purdue.edu, 494-7068

The course will introduce graduate students and faculty mentors to the intellectual, financial and management processes involved in translating research into tangible products through university initiated startup activities. Instructors and guest speakers will present case studies of technologies and pathways to commercialization. Students will earn three credits for attendance. ■

→|| OFFICE OF THE VICE PRESIDENT FOR RESEARCH

Hovde Hall
610 Purdue Mall
West Lafayette, IN 47907-2040

»» Research Services Directory

- » General Information & Questions; 494-9806
- » Vice President for Research; 494-6209; Richard Buckius, rbuckius@purdue.edu
- » Discovery Park; 496-6625; Alan Rebar, rebar@purdue.edu
- » Research Core Facilities; 496-1938; Jeff Bolin, jtb@purdue.edu
- » Cost Sharing; 494-0702; Mary Millsaps, millsaps@purdue.edu
- » Internal Competitions, 494-4231; Marietta Harrison, harrisom@purdue.edu
- » Industry Research and Technology Programs; 494-0743; John Schneider, jas@purdue.edu
- » Research Development: Workshops, Competitions; 494-5858, Sue Grimes, sgrimes@purdue.edu
- » Research Development: Proposal Coordination/Writing; 496-1985, Sally Bond, sbond@purdue.edu
- » Research Integrity; 494-3996; Peter Dunn, pedunn@purdue.edu
- » Research Regulatory Compliance, 494-7458; Ianthe Bryant-Gawthrop, ibg@purdue.edu
- » Research Quality Assurance, 496-6653; Michael Szczepanski, mikes@purdue.edu
- » Conflict of Interest; 496-1763; Voichita Dadarlat, voichi@purdue.edu
- » Export Controls; 494-1852; Michael Reckowsky, mreckowsky@purdue.edu
- » Human Research Protection Program: 494-5942; irb@purdue.edu
- » Animals; 494-7206; Lisa Snider, ldsnider@purdue.edu
- » Biohazards; 494-1496; Bob Golden, rwgolden@purdue.edu

Award Information

- » Sponsored Program Services; 494-1055; www.purdue.edu/sps
- » Proposal Information, Transmittal to Agency; 494-6204; proposal@purdue.edu

Technology Commercialization

- » Patent & Copyright Information; 588-3475; Elizabeth Hart-Wells, otcip@prf.org

Co-editors » Pam Burroff-Murr, burroff@purdue.edu; Angie Roberts, akroberts@purdue.edu

Layout » Linda A. Howell, lahowell@purdue.edu

Proofreading/fact-checking » Cindy Larson, cindylarson@purdue.edu

Contributing Writers » Ianthe Bryant-Gawthrop, Phillip Fiorini, Greg Kline, Angie Roberts, Charles Watkinson, Pete Dunn

Photography » Andrew Hancock, Mark Simons, Vincent Walter

Design » Cathy Swick Design

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Incentive Grants and Research-Equipment Grants Available

Grants through the Office of the Vice President for Research to West Lafayette faculty members are available for:

- » Interdisciplinary research – up to \$300,000; letters of intent (LOI) by Sept. 6
- » Single-disciplinary research – up to \$100,000; LOI by Sept. 6
- » Laboratory research equipment – \$100,000 or less; LOI by Sept. 5
- » Nonlaboratory research infrastructure and equipment; proposal deadline details at website

These programs were first announced on p. 5 in the summer issue of *Dimensions of Discovery*. For more information, including where to send letters of intent and proposals, go to www.purdue.edu/research/vpr/rshdev/fund_main.php.