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Center Advances Science of Information



Purdue Awarded \$25 Million for State's First NSF Science and Technology Center

How can we extend classical information theory — which paved the way for the Internet, DVDs, and iPods — to meet new challenges posed by rapid advances in networking, biology, and quantum information processing?

Researchers at Purdue are collaborating with institutions across the country to find the answers. Purdue University has been awarded \$25 million to create the first National Science Foundation Science and Technology Center in Indiana.

The Science of Information Center aims to define principles underlying the next generation of information theory by integrating elements of space, time, structure, semantics, and context, validating these theories on diverse applications from economic modeling to analyses of biological systems.

“The center brings together world-class scholars from top universities to collectively develop a comprehensive science related to how information is extracted, manipulated, and exchanged,” says Richard Buckius, Purdue’s vice president for research. “The team will attack these problems by rigorous theoretical studies driven by critical real-world problems in domains as diverse as biology, social networks, and computer communication networks. The outcomes promise to be transformative, just as development of reliable and affordable digital communication transformed 20th century life.”

Wojciech Szpankowski, Purdue’s Saul Rosen Professor of Computer Science, has been appointed as project leader of the center. Along with fellow faculty members, he hopes to partner with industry representatives to develop long-term technological solutions and tools for analysis and modeling in life sciences, communications, finance, and consumer behavior.

“Classical information theory, with bits and bytes as the measure of information, revolutionized computing and communication,” he says. “We are reaching the limits of this foundation and need to extend it. A new theory of information that goes beyond bits and bytes will allow us to harness the knowledge available in the massive amounts of data we’ve collected but not yet been able to truly tap.”



Vincent Walter, Photographer

Wojciech Szpankowski



For example, information theory, established by Claude Shannon in 1948, finds the limits of compressing, reliably storing, and communicating data. While Shannon's theory has led to efficient codes and electronic transmission of information, it needs to be extended to include space, time, structure, semantics, and context.

"Information is different from data," Szpankowski says. "A person is able to look at data and pull more information from it than what is presented on its face. We naturally take context into account and can tell instantly whether the word 'bank' refers to a river, a financial institution, or to count on something. We need to enable computers to evaluate information more like a person does."

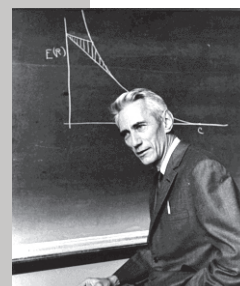
Co-PI Madhu Sudan of the Massachusetts Institute of Technology says he's eager to dive into such endeavors. "There is a prevailing commonplace belief that the science of computing is finished and that current-day computers can achieve all we would want to do," he says. "Yet researchers at the forefront of the technology know that we have only explored the tip of the iceberg."

In fact, says P.R. Kumar, a collaborator from the University of Illinois at Urbana-Champaign, "We envision a future consisting of wireless and wireline networks that may well be revolutionary by today's standards. Instead of transporting just data, they may transport information."

Along with advancing the science of information, Szpankowski and his colleagues will establish scholarships and fellowships and create interdisciplinary undergraduate and graduate courses. Students will be able to access a cyberinfrastructure powered by HUBzero™ software, studying tutorials, publications, and simulations. They'll also interact with top faculty from partner universities and leading private sector scientists.

Of particular concern to researchers is creating a pathway for underrepresented students from Bryn Mawr College (an all-women's undergraduate institution) and Howard University (a historically black university) into STEM (science, technology, engineering, and mathematics) graduate programs at partner institutions. To meet this goal, they are planning open houses, cross-institution visits, summer research experiences, seminars, and mentoring programs. ■

Writer: Elizabeth Gardner is communications and marketing specialist for Purdue Marketing and Media.



Claude Shannon

Partners

The Science of Information Center is one of five new NSF science and technology centers chosen from 247 preliminary proposals.

Partners of the five-year award include:

- » Bryn Mawr College
- » Howard University
- » Massachusetts Institute of Technology, **Madhu Sudan**, Co-PI
- » Princeton University, **Sergio Verdu**, Co-PI
- » Stanford University, **Andrea Goldsmith**, Co-PI
- » University of California-Berkeley, **Bin Yu**, Co-PI
- » University of California-San Diego, and
- » University of Illinois at Urbana-Champaign.





www.purdue.edu/research/gpri/

Global Policy Research Institute
at Purdue University

“Purdue can use its strengths in research and international programs to translate issues from public policy into research”



Arden Bement

Courtesy of Journal and Courier

Global Concerns

The Global Policy Research Institute will concentrate on critical worldwide concerns:

- » Agriculture: crop development; food security; safety
- » Environment: climate change; sustainability; water, air, and arable land
- » Energy systems: alternative sources; delivery; efficiencies
- » Economy: global commerce; development
- » Health: healthcare engineering; disease; drug research
- » Security: defense; space; cyber technology
- » Society and Leadership: family; governance; community resilience □

Global Policy Research Institute

Purdue’s Global Policy Research Institute (GPRI) has opened its doors to the world.

From its new home in the Schowe House on Northwestern Avenue, the think tank will increase the visibility of Purdue’s research findings and enhance the impact of the University’s discoveries for the common good.

“Purdue can use its strengths in research and international programs to translate issues from public policy into research and to enlighten and provide new options that play an important role in reaching political consensus,” says Arden Bement, who will become director of the institute on June 1. Bement is former head of the School of Nuclear Engineering and former director of the National Institute of Standards and Technology. Since 2004, he has served as head of the National Science Foundation, a position he will leave when he assumes responsibility for the GPRI.

Drawing on strengths

Purdue has long been known for research with global impact. It is recognized for an international campus culture, and is celebrated for top-ranked graduate programs. Bement, who has extensive experience in foreign relations and public policy, will draw on these strengths to form strategic partnerships from the local to international level.

The GPRI stands apart from the nearly 1,500 other policy institutes around the country, Bement says, since few other institutes have such a solid foundation in the STEM (science, technology, engineering, and mathematics) disciplines. Even fewer can operate on a global scale. Such strengths are vital at a time when innovation is fueling rapid change.

“With the advance in communication and information technology, the world is shrinking and global issues are proliferating. These issues are complex enough that they are beyond any one university or nation to address,” Bement says.

Global and Local

Although global in name, the institute will focus on policy at all levels, from local government to international agencies. Among its offerings will be student internships and a graduate program in public policy and public administration. Through workshops and symposia, the institute will bring world experts to campus, fueling cross-disciplinary and cross-national research.

Still, Bement emphasizes that the institute will not play an advocacy role. Instead, he says, “Our role is to provide opportunities for debate by identifying new concepts in science that can have bearing on key policy issues.” In so doing, the GPRI may strengthen connections between science and society, ultimately preparing all members of the University community to be responsible, engaged citizens. ■

Writer: Linda Thomas Terhune is senior writer and managing editor for Purdue Marketing and Media.

David E. Salt Wins Prestigious Research Award

David E. Salt, professor of horticulture and landscape architecture in the College of Agriculture, is the winner of the 2010 Herbert Newby McCoy Award, the most prestigious research award given by Purdue University. He was recognized for his pioneering and innovative efforts in the use of genome-scale biological approaches and information technologies to define and drive the field of ionomics.

Established in 1964 by Ethel Terry McCoy in memory of her husband, a Purdue alumnus, the McCoy Award is presented annually to a Purdue student or faculty member for outstanding contributions to science. The winner is nominated by colleagues and selected by faculty representatives and the Purdue president.

An international leader in the field of plant nutrition, Salt has made significant impacts on environmental sustainability, agriculture, and human health. Among his many accomplishments, he was part of a global team that earlier this year demonstrated a specialized mapping technique that could speed work in genomic fields by quickly finding genetic associations to shape an organism's observable characteristics.

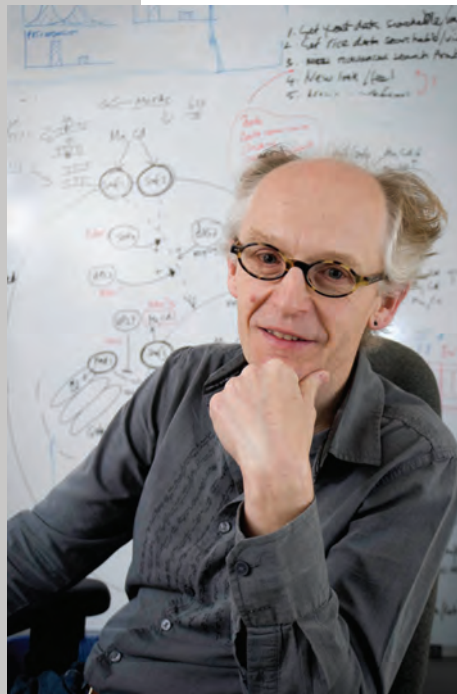
Using plants from 93 different *Arabidopsis thaliana* populations, the team led by the Gregor Mendel Institute of Plant Biology in Austria was able to find genetic associations among multiple phenotypes, or traits, suggesting that the same genes or closely related genes controlled those traits.

Salt, who co-authored the team's paper that appeared in *Nature* this March, says the ability to find these types of genetic links could speed scientists' ability to find and isolate genes and understand their function. "This may show that multiple phenotypes are being controlled by a specific region of the genome," Salt says. "It helps us understand the mechanisms."

In 2008, Salt received the National Science Foundation Interactive Media Award in the Science and Engineering Visualization Challenge for development of an interactive biology gaming system. The Genomics Digital Lab (GDL), which Salt developed with Purdue University Professor Tommy Sors and Jeremy Friedberg of Spongelab, offers curriculum-aligned and integrated games, modules, and interactive simulations. A continually expanding interactive online environment, GDL allows users to experience biology through discovery-based learning.

Salt, who will address the Purdue community at the McCoy Distinguished Lecture later this year, received his PhD in plant biochemistry from Liverpool University, a master's degree in computer studies from Hallam University, and a bachelor's degree in biochemistry from University College North Wales. Since 2004, he has been scientific director of genomics research and technology for the Bindley Bioscience Center, Purdue University. He also is a University Faculty Scholar.

Before coming to Purdue, Salt was an associate professor of biochemistry at Northern Arizona University. He also was assistant research professor in the Center for Agricultural Molecular Biology at Rutgers University. ■



David E. Salt

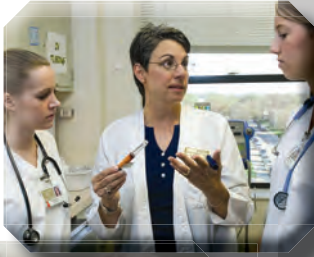
Vincent Walter, Photographer



Professor Salt compares growth rates of the plants used in his ionomics research.



New College of Health and Human Sciences



Purdue Strengthens Health, Human Sciences with College Realignment

This summer, Purdue University will unveil a new college dedicated to improving the health and quality of life of people.

The new College of Health and Human Sciences, which is replacing the College of Consumer and Family Sciences, is designed to enhance student opportunities, promote faculty collaboration, and attract more external research funding. It will house the departments of Health and Kinesiology; Psychological Sciences; Speech, Language, and Hearing Sciences; Child Development and Family Studies; Foods and Nutrition; Consumer Sciences and Retailing; and Hospitality and Tourism Management, as well as the schools of Nursing and Health Sciences.

The nine academic units are currently spread across three colleges. Combining them will strengthen interdisciplinary efforts in such areas as premedicine, predoctoral, and preveterinary fields, says William Harper, professor and head of the Department of Health and Kinesiology and chair of the task force that developed the new college.

“Interdisciplinary collaborations among these academic units have always been strong, but bringing us all together under one college is just the beginning of even more opportunities, especially with the potential to benefit our students,” he explains. “For example, this college will expand course offerings to enhance existing and emerging graduate degree programs, such as the recently created master’s of public health program.

Ultimately, the combination of these academic programs in the college will facilitate opportunities for students to discover and broaden their career aspirations, as well as enhance the coordination of distance learning, internships, and study abroad.”

Christine Ladisch, vice provost for academic affairs, will serve as inaugural dean for Purdue University’s College of Health and Human Sciences. “I am excited about this opportunity to bring together faculty, staff, and students in the health and human sciences-related disciplines. The possibilities for new research collaborations, academic programs, and student opportunities aimed at improving human health and the quality of life are endless,” says Ladisch, who has served as vice provost for academic affairs since July 2005. ■

Writer: Amy Patterson Neubert is a communications/marketing specialist for Purdue Marketing and Media.



Purdue Research Foundation Names Assistant Vice President and Director of the Office of Technology Commercialization



Elizabeth Hart-Wells

Elizabeth “Libby” Hart-Wells of New Market, Maryland, has been named assistant vice president and director of the Purdue Research Foundation’s Office of Technology Commercialization (OTC).

Hart-Wells, who most recently served as executive director of Commercial Ventures and Intellectual Property of the University of Maryland, Baltimore, begins her position in May.

The Purdue Research Foundation’s Office of Technology Commercialization serves Purdue University faculty, students, and staff members through the commercialization of their discoveries and inventions. In 2008, the University generated a record \$333.4 million in sponsored research funding and \$3.4 million in royalties. The office also filed 227 invention disclosures and received 24 issued patents.

“Libby brings a wealth of experience to the position, particularly in the commercialization of intellectual property, patent analysis, and business development,” says Joseph B. Hornett, senior vice president, treasurer, and COO of the Purdue Research Foundation. “She is the right person to lead this important office and to bring new ideas and vision.”

Hart-Wells says she intends to create a branding campaign that promotes the OTC’s contributions to the Purdue strategic plan. She also wants to strengthen relationships with Purdue representatives and the business community.

Hart-Wells earned a PhD in chemistry from Rice University in 2001 and a bachelor’s degree in chemistry from Indiana University in 1993. She previously served as a Congressional Fellow for the American Association for the Advancement of Science, a patent agent for Fulbright & Jaworski LLP, and a research associate for the National Academy of Sciences. ■

Writer: Cynthia Sequin is a communications/marketing specialist for Purdue Research Foundation.

Appointments

James Cooper, the Jai N. Gupta Professor of Electrical and Computer Engineering, has been selected as interim director of the Birck Nanotechnology Center.

Richard Cosier, currently dean of the Krannert School of Management, will become the Avrum and Joyce Gray Director of the Burton D. Morgan Center for Entrepreneurship in January 2011.

Karen Plaut, chair of the Department of Animal Science at Michigan State University, will become director of Agricultural Research Programs in Purdue University’s College of Agriculture, effective June 1.

Jefferson Science Fellowships from the U.S. Department of State

Suresh V. Garimella, Purdue’s R. Eugene and Susie E. Goodson Distinguished Professor of Mechanical Engineering, and **Jay Gore**, the Reilly Professor of Combustion Engineering and director of the Energy Center in Purdue’s Discovery Park, received Jefferson Science Fellowships from the U.S. Department of State, where their expertise and insights will help guide U.S. foreign policy.

American Council on Education Fellows Program

Audeen Fentiman, associate dean of engineering for graduate education and interdisciplinary programs, and professor of nuclear engineering; and **Eckhard Groll**, director of the Office of Professional Practice, and professor of mechanical engineering, were selected for the 2010-11 class of the American Council on Education Fellows Program.

Sloan Research Fellowship

Svitlana Mayboroda, an assistant professor of mathematics, is the recipient of a 2010 Alfred P. Sloan Foundation Research Fellowship. The Sloan Research Fellowships are awarded to early-career scientists and scholars of outstanding promise. □

»» Bindley Bioscience Center Expansion

NIH Awards \$14.9 Million for Expansion of Bindley Bioscience Center

Purdue University has received \$14.9 million in funding from the National Institutes of Health to expand Discovery Park's Bindley Bioscience Center.

Awarded through a federal stimulus measure, the 29,000-square-foot expansion will establish the Multidisciplinary Cancer and Disease Research Facility, where investigators will develop new disease models and therapeutics.

"This major Bindley Bioscience Center expansion addresses a critical need for disease researchers from across multiple disciplines at Purdue," says Richard Kuhn, director of the Bindley Bioscience Center and professor and head of the Department of Biological Sciences. "This also builds on the University's strengths in cancer research, drug discovery and development, engineering, chemistry and instrumentation, and veterinary medicine with a disease research-focused, multidisciplinary facility for biomedical research."

Laboratories are planned for cancer cell biology, therapeutic and medical device development, cell-based screening, medicinal chemistry, and next-generation imaging. The expansion will complement Bindley's capabilities in biophysical and biomolecular analyses, conventional cell imaging and separation, and high-throughput screening technologies, says Timothy Ratliff, the Robert Wallace Miller Director of the Purdue University Center for Cancer Research.

Since Bindley is located next to the Birck Nanotechnology Center, the addition also will help advance nanotechnology research for disease diagnosis and treatment.

"This National Institutes of Health funding builds on Purdue's and Indiana's success in advancing bio- and life-science research, helping create jobs and increasing the competitiveness of the state's work force," says Richard Buckius, vice president for research. "A larger Bindley Bioscience Center also helps position Indiana to gain a larger share of the \$14 billion market for life sciences research and development, an industry segment that's growing 15 percent a year."

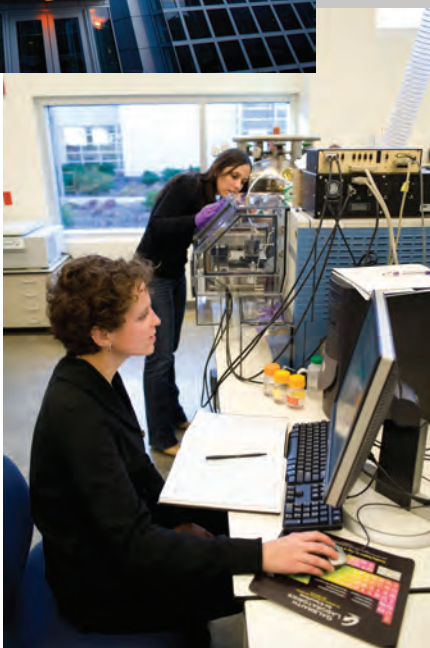
Located on the south side of the building, the addition will be designed to achieve silver level Leadership in Energy and Environmental Design (LEED) certification. About 165 jobs will be created during construction, which is expected to begin in August 2011. Completion is tentatively set for April 2013.

Bindley Bioscience Center is named for 1962 Purdue graduate William E. Bindley, who in 2002 contributed \$52.5 million to the University. Bindley designated \$7.5 million of his gift to cover half the cost of the two-story, 50,000-square-foot research facility, with the rest funded by earnings from unrestricted endowments. The center opened to researchers in October 2005. ■

Writer: Phillip Fiorini is a writer/editor with Purdue Marketing and Media.



Bindley Bioscience Center researchers Allison Dill, in foreground, and Livia Ebertin analyze molecular fingerprint signatures gathered from a miniature mass spectrometer combined with a technique called desorption electrospray ionization, known as DESI. The device and technique, developed by a team led by Purdue Professor R. Graham Cooks, will be an essential research tool for the planned Multidisciplinary Cancer and Disease Research Facility.



Vincent Walter, Photographer

» Facility for High Performance Buildings Research

NIST Awards \$11.75 Million for High Performance Buildings Facility Upgrade to Ray W. Herrick Laboratories

Purdue University is creating a \$23.5 million Center for High Performance Buildings at the Ray W. Herrick Laboratories to design systems for future buildings that are more environmentally and user friendly, energy efficient, and safe.

Half of the project's cost — \$11.75 million — is being funded by federal stimulus money from the U.S. Commerce Department's National Institute of Standards and Technology. The other half will come largely from private donors (see sidebar).

"The research will attack some of the most daunting and complex problems confronting the world, such as rising energy consumption and environmental pollution, climate change, public health, comfort and security, and issues associated with an aging population," says Leah Jamieson, Purdue's John A. Edwardson Dean of Engineering and Ransburg Distinguished Professor of Electrical and Computer Engineering.

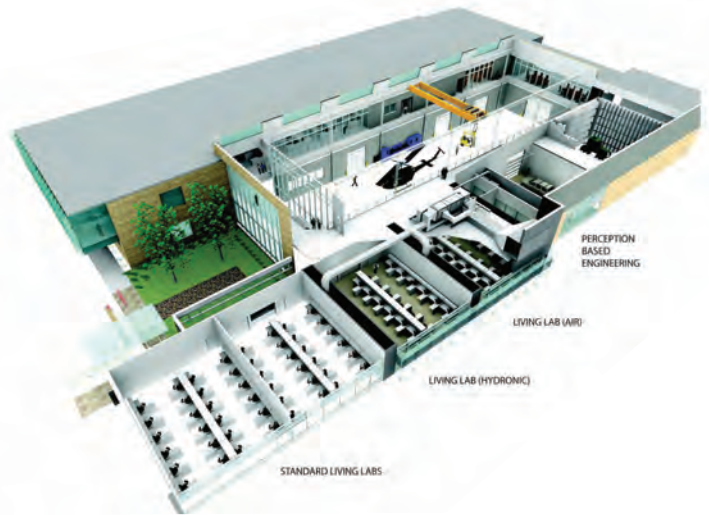
As Jim Braun, professor at the Ray W. Herrick Laboratories, noted in the proposal to NIST, "In the U.S., buildings are responsible for roughly 40 percent of primary energy usage, 71 percent of electricity, and 38 percent of the country's CO2 emissions. Furthermore, Americans typically spend over 90 percent of their time indoors and about 20-30 percent of occupants have health problems related to built environments." The economic impact related to health and lost productivity from poor indoor environments is an estimated \$200 billion per year in the United States, according to the report.

"One of the grand challenges of the center will be to develop an understanding of the relationships between indoor environments and human comfort, health, and productivity, which will lead to improvements in the design and performance of building systems and that will make buildings better for people," says Patricia Davies, director of the Herrick Labs and a professor of mechanical engineering.

The Center for High Performance Buildings will be housed in a new 68,000-gross square-foot facility upgrading Purdue's Ray W. Herrick Laboratories. This is the first phase of an upgrade project that will, when all phases are completed, double the lab's existing research space.

The building will include a perception-based engineering lab that will be used to develop models of human responses to noise, vibration, indoor air quality, temperature, and humidity, and a living laboratory for testing and validating new building systems and for gathering data to improve building simulation tools. Engine test cells, vibrations, and electro-mechanical systems research areas are also part of Phase I. Construction is expected to begin this fall and be completed by December 2012. ■

Writer: Emil Venere is a writer/editor with Purdue Marketing and Media.



Plans for Ray W. Herrick Laboratories facilities upgrade

Funding for the Center for High Performance Buildings at the Ray W. Herrick Laboratories will come from federal stimulus money and private donors. Here's a breakdown of major contributions to date:

- » \$11.75 million: U.S. Commerce Department's National Institute of Standards and Technology
- » \$2 million: from mechanical engineering alumnus Gerald D. Hines
- » \$3.5 million: ME alumnus Roger Gatewood
- » \$3 million: Ford Fund
- » \$1 million: Cummins
- » \$1 million: Herrick Foundation

Birthplace of Stars

2010 American Association for the Advancement of Science Fellows

Seven Purdue faculty members have been elected as fellows into the American Association for the Advancement of Science (AAAS) for 2010. They include **Natalia Dudareva**, professor of horticulture and landscape architecture; **Donna Fekete**, professor of biological sciences; **Jonathan Harbor**, professor and head of the Department of Earth and Atmospheric Sciences; **Anant K. Ramdas**, Lark-Horovitz Distinguished Professor of Physics; **Anita Roychoudhury**, associate professor of curriculum and instruction; **Marcy Hamby Towns**, associate professor of chemistry; and **Mary J. Wirth**, the W. Brooks Fortune Professor of Chemistry at Purdue.

NSF Faculty Early Career Development Awards

Fourteen Purdue University faculty members have won the National Science Foundation's most prestigious honor for outstanding young researchers. They are **Yong Chen**, the Miller Family Assistant Professor of Nanoscience and Physics; **Demetra Evangelou**, assistant professor of engineering education; **Thomas Hacker**, assistant professor of computer and information technology; **Kevin Gurney**, associate professor of earth and atmospheric sciences and agronomy; **Matthew Jones**, associate professor of physics; **Krista Nichols**, assistant professor of biological sciences; **Dev Niyogi**, assistant professor of biological sciences; **Zheng Ouyang**, assistant professor of biomedical engineering and electrical and computer engineering; **Jeffrey Rhoads**, assistant professor of mechanical engineering; **Ann E. Rundell**, assistant professor of biomedical engineering and electrical and computer engineering; **Chih-Chun Wang**, assistant professor of electrical and computer engineering; **Chen Yang**, assistant professor of physical chemistry; **Dabao Zhang**, assistant professor of statistics; and **Xiangyu Zhang**, assistant professor of computer science.

DOE's New Early Career Research Program

Two Purdue University researchers are among 69 chosen nationwide by the U.S. Department of Energy to receive awards through the DOE's new Early Career Research Program: **Jean Paul Allain**, assistant professor of nuclear engineering, and **Denes Molnar**, an assistant professor of physics.

NIH Five-Year Career Development Award

Zhao-Qing Luo, assistant professor of biological sciences, received an NIH five-year Career Development Award to support research on the redirection of protein trafficking by a bacterial pathogen.

National Association for Research in Science Teaching

Three Purdue professors of educational psychology have been honored by the National Association for Research in Science Teaching. **Helen Patrick**, **Panayota Mantzicopoulos**, and **Ala Samarapungavan** won the 2010 Journal of Research in Science Teaching Award for their article "Motivation for Learning Science in Kindergarten: Is There a Gender Gap and Does Integrated Inquiry and Literacy Instruction Make a Difference." Their article received the highest ratings from a selection committee of their colleagues among all articles in the journal's 2009 volume. ■

» Using Memorandum of Understanding

→|| RESEARCH ADMINISTRATION

Memoranda of Understanding for Regulatory Oversight Matters

It's an all-too-common occurrence — an investigator needs to conduct preliminary research before developing a proposal for regulatory investigations, but is not ready to apply to a campus regulatory committee. Perhaps he or she must develop a reagent before conducting an animal study, for instance, or perform a literature review before collecting data from human participants.

When the sponsor's guidelines permit, Purdue may temporarily fulfill regulatory requirements through a memorandum of understanding (MOU) which states that project funds will not be expended for research involving human participants, vertebrate animals, and/or recombinant DNA until a campus committee has approved the proposal.

In such cases, Sponsored Programs Regulatory Administrator Ianthe Bryant-Gawthrop will issue the memorandum, to be signed by the principal investigator and the Office of Research Administration. The MOU can then be filed with the proposal, documenting the investigator's agreement to use funds for project development and other general expenses unrelated to the regulated research.

Several federal sponsors, however, do not accept MOUs as placeholders for committee approval, including the National Institutes of Health, United States Department of Agriculture, Department of Defense, and the National Science Foundation. When seeking federal funds, Bryant-Gawthrop advises that researchers follow protocols for the Institutional Review Board, Institutional Biosafety Committee, or the Purdue Animal Care and Use Committee.

To ensure that proposals receive the appropriate regulatory review, she also suggests that principal investigators reference the use of human participants, vertebrate animals, and/or recombinant DNA in submission forms. For more information, contact her at ibg@purdue.edu. ■

Writer: Ianthe Bryant Gawthrop is regulatory administrator for sponsored programs in the Office of the Vice President for Research.



OVPR Releases Annual Report

From aerospace to nanotechnology, Purdue researchers have made enormous contributions to our daily lives. To highlight their most recent accomplishments, the Office of the Vice President for Research has released its 2008-09 annual report.

Advancing the Frontiers of Knowledge and Delivering Innovative Solutions is the theme of the report, which profiles veteran researchers, rising stars, and promising graduate students. Along with articles and photographs from University staff and local professionals, the report features images from NASA's Hubble Space Telescope, copies of which were donated to Purdue by Margaretha Motes McBride ('68), former director of the Muncie Community Schools Planetarium.

The report is available online at www.purdue.edu/research/vpr/publications.

Comments are welcome. Direct your comments or requests for hard copies of the report to Pam Burroff-Murr at burroff@purdue.edu. □

» CoeusLite Debuts with Around-the-World Access



New NSF Terms and Conditions

In January 2010, the National Science Foundation updated its terms and conditions for all new and active awards. The new terms and conditions included two significant changes, the Project Outcomes Report and the Responsible Conduct of Research.

Project Outcomes Report

Unless otherwise specified in the award, investigators are now required to submit a Project Outcomes Report to the general public within 90 days following the expiration date of the award. The project report must be submitted electronically via www.research.gov.

This report serves as a brief summary, prepared specifically for the public, of the nature and outcomes of the project. For more information about the content of the report, please see Chapter II.E.3 in the Awards and Administration guide: www.nsf.gov/pubs/policydocs/pappguide/nsf10_1/aag_2.jsp#IIE3

Responsible Conduct of Research

In accordance with Section 7009 of the America COMPETES Act, NSF requires that grantees have a plan in place to provide appropriate training and oversight in the responsible and ethical conduct of research (RCR) to undergraduates, graduate students, and postdoctoral researchers who will be supported by NSF to conduct research. Training plans are subject to review by NSF, upon request.

To view Purdue's plan, please visit the following link from the Office of the Vice President for Research: www.purdue.edu/research/vpr/rschadmin/rctr/.

Writer: Mike Waling is senior account manager for Sponsored Program Services.

→|| SPONSORED PROGRAM SERVICES

CoeusLite: Proposal Records and Budget Estimates at Your Fingertips

Since 2001, Sponsored Program Services (SPS) and business office staff members have used Coeus, an electronic research application that allows researchers to create and manage their own proposal records and budget estimates without administrative assistance. Now, research teams have direct access to many Coeus functions through the newly implemented Web-based application CoeusLite.

With an Internet connection anywhere in the world, you can:

- » Initiate and add details to proposal records
- » Generate budget estimates, including applicable institutional fringe benefit, inflation, salary, and F&A rates. Once a budget for a single project period is completed, the application will generate subsequent years automatically.
- » Provide a central and secure location for collaborative proposals by attaching proposal documents through a standard browse-and-upload function.
- » Interact with team members using a single record database source. All users can access, review, and edit information, no matter which one originally created the record.
- » Review records from past proposals.

Resources, including an online manual, quick reference pages, and video tutorials, are accessible at the Purdue Coeus Web site, www.purdue.edu/coeus. Email help is available at coeuslitehelp@purdue.edu. Trainers also can provide phone, online, or in-person sessions for individuals or small groups.

To begin using CoeusLite, simply complete the online access request form found on the Coeus Web site under the Requests tab. You'll receive a New Investigator User pack with login and navigation instructions via e-mail.

A demonstration video link is available at www.purdue.edu/research/vpr/videos/Lite_Demo/Lite_Demo_controller.swf.

For any questions regarding the CoeusLite interface or Coeus functionality, please contact Chris Tompkins at tompkinc@purdue.edu or the Help listserv at coeuslitehelp@purdue.edu. ■

Chris Tompkins is the research administration system manager for Sponsored Program Services.

» Minors in Research Laboratories

→|| RADIOLOGICAL AND ENVIRONMENTAL MANAGEMENT

Summer Research Safety: Keep Minors Safe in Labs

Summertime brings many teenagers to campus, both through organized camps and informal visits with professors. While laboratory experiments enhance such educational experiences, novices also need to be kept safe when visiting labs.

“We must ensure that anyone working in laboratories at any time be carefully familiarized with all potential hazards, know how to recognize them, and be thoroughly trained in techniques and equipment to protect against injury and illness,” says Jim Schweitzer, radiation safety officer and director of Radiological and Environmental Management (REM). “This training and information should be systemically delivered and documented for all employees and graduate students as well as visiting scientists and students.”

Minors in particular require extra attention, not only because of state and federal regulations, but also because they are generally inexperienced and may lack critical-decision making skills in such settings. Regulations for minors — defined as people younger than 18 years of age who are not enrolled as regular undergraduates — cover any laboratory work that is potentially hazardous, even if students are not being paid.

Here are some regulations and conditions to keep in mind:

- » Minors under 15 years old are allowed to participate only in group class and workshop activities formally organized by the University.
- » Minors are never allowed to work or conduct any studies or research
 - involving operating farm machinery or state vehicles,
 - in any facility engaged in BSL-3/ABSL-3 (or higher) work, or in a machine shop,
 - in any room where select agent or explosives are used or stored, or
 - which involves direct handling of radioactivity, BSL-2 or higher materials (including tissues or cell cultures, pathogens, animals, rDNA, or human blood).
- » Minors 15 to 17 may handle hazardous chemicals and equipment and/or work in an animal facility under careful direct supervision only when they are sponsored by a Purdue faculty member and recommended by their high school teacher.

In addition to complying with these regulations, sponsoring faculty members should complete the REM document “Minors in Research Laboratories or Animal Facilities.” Once appropriate persons have signed the document, the faculty member should submit it to REM along with copies of all training certificates.

For more information, contact Jim Schweitzer at jfschwei@purdue.edu, or Linda Swihart at swihart@purdue.edu in REM. ■

Writers: Linda Swihart, industrial hygienist and Jim Schweitzer, director of Radiological and Environmental Management.



Vincent Walter, Photographer

- » **What** Frontiers in Bioenergy Symposium 2010
- » **When** May 24-25
- » **Where** Stewart Center, Purdue University
- » **Contact** Luanne Ludwig, lml@purdue.edu, 494-2276

- » **What** University Government Industry Micro/Nano Symposium
- » **When** June 28-July 1
- » **Where** Purdue University
- » **Contact** www.nano.purdue.edu/UGIM

- » **What** 1st International High Performance Buildings Conference
- » **When** July 12-15
- » **Where** Purdue University
- » **Contact** <https://engineering.purdue.edu/Herrick/Events/2010conf/index.html>
- » **Re** The 1st International High Performance Buildings Conference at Purdue will cover several areas of building design and performance, including building thermal systems, solar energy use in buildings, sustainable buildings and green technologies, building envelope/facades, net-zero building design, ventilation building-integrated photovoltaics, indoor environment and human comfort, acoustics, building simulation, integrate building design and related case studies.

- » **What** WIndiana 2010
- » **When** July 21-22
- » **Where** Indianapolis Convention Center
- » **Re** For more information on content, please visit the Indiana Office of Energy Development Web site at www.in.gov/oed/2413.htm. □

SPONSOR

- » National Science Foundation
- » Dept. of Health and Human Services
- » Dept. of Defense
- » Dept. of Energy
- » Dept. of Agriculture
- » National Aeronautics and Space Administration
- » Other Federal
- » Dept. of Education
- » Environmental Protection Agency
- » Dept. of Transportation
- » Agency for International Development

Total Federal

- » Industrials and Foundations
- » State/Local Governments
- » Purdue Research Foundation/Purdue University
- » Foreign Governments

Total Non-Federal

Total Purdue System-wide

Program Year-to-Date Activity

Comprehensive monthly awards list includes search and sort capabilities

A search and sort Excel file of sponsored program awards received is available online at www.purdue.edu/research/vpr/. Included in the awards are non-competitive awards, such as Purdue Research Foundation research grants, Purdue assistantships, gift and voluntary support activities, fellowships, ARP/USDA awards, and industrial awards.

Awards by Sponsor

July 1, 2009 to March 31, 2010

	FY2010 (YTD 03/31/2010)		FY2009 (YTD 3/31/2009)		% Change	
	NO.	\$ AMOUNT	NO.	\$ AMOUNT	NO.	\$ AMOUNT
	328	99,176,726	210	50,394,259	56%	97%
	222	43,173,932	186	33,798,454	19%	28%
	173	25,250,986	155	20,502,488	12%	23%
	100	47,887,225	99	21,917,640	1%	118%
	137	18,203,749	126	12,477,433	9%	46%
	45	3,339,764	51	3,816,822	-12%	-12%
	77	17,869,578	61	7,511,917	26%	138%
	19	4,132,818	22	4,568,149	-14%	-10%
	10	675,280	12	1,254,369	-17%	-46%
n	18	4,405,116	19	4,273,770	-5%	3%
	16	2,999,956	15	2,378,170	7%	26%
	1,145	\$267,115,131	956	\$162,893,471	20%	64%
	1,060	44,321,464	1,345	73,086,617	-21%	-39%
	157	23,154,229	146	19,330,678	8%	20%
	258	3,556,142	158	2,468,177	63%	44%
	22	1,189,381	23	1,110,615	-4%	7%
	1,497	\$72,221,216	1,672	\$95,996,086	-10%	-25%
ide	2,642	\$339,336,347	2,628	\$258,889,557	1%	31%

Data provided by Sponsored Program Services

www.purdue.edu/research/vpr/

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- » Proposal Information, Transmittal to Agency; 494-6204; proposal@purdue.edu

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