

# Research Enterprise

November 24, 2015

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The Office of the Vice Chancellor for Research (OVCR) publishes the RESEARCH ENTERPRISE to keep the academic community and the community at large informed about research activities, opportunities and development on the IUPUI campus.

### Research Offices:

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### Editor:

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If you have a news item or recent noteworthy research-related achievement that you would like to share, please see the [Research Enterprise Submission Guidelines](#).

Please be aware that not all news items will be deemed appropriate or timely for publication, but each item will be carefully considered.

## Message from the Vice Chancellor for Research

Dear Colleagues:

November has been a month of new beginnings and new challenges across the campus. Nasser Paydar's installation as IUPUI's fifth chancellor was held on November 17th. In his [installation address](#) he highlighted the importance of research and scholarship in the mission of the campus, and his determination to see the campus achieve its full potential as a center for interdisciplinary research with real impact on the wellbeing and prosperity of our city and state. IU's Grand Challenges initiative will help us to do this. A total of 21 Grand Challenge pre-proposals were received by the November 9th deadline, involving over 400 investigators from across the university. All the proposals can be accessed [here](#), and you'll see the breadth of topics and academic units involved. The hard work now shifts for a while to the [review committee](#), chaired by Janet Carpenter from the School of Nursing. The committee will be digesting the proposals along with turkey and pie this month, facing its own grand challenge of selecting five proposals by the end of the year, to be developed into full proposals from which the first Grand Challenges will be chosen.



Vice Chancellor Simon Atkinson

### Simon Atkinson

*Vice Chancellor for Research*

## FEATURE STORIES

## IU nursing professor receives \$2.2M national award to evaluate end-of-life treatment planning tool

The National Institute of Nursing Research has awarded \$2.2 million to an IU School of Nursing professor at Indiana University-Purdue University Indianapolis to evaluate the use in Indiana nursing homes of a new advance-care planning tool created to help ensure that patients' end-of-life treatment preferences are honored.

The research will provide information about how well the Physician Orders for Scope of Treatment tool reflects patients' treatment preferences and how well patients understand the orders they are choosing. The advance-care planning tool is used by tens of thousands of patients across the United States.

The research team will be led by Susan Hickman, who teaches ethics in the nursing school and is co-director of the IUPUI Research in Palliative and End-of-Life Communication and Training Signature Center. The team will collect data and conduct interviews with nursing-home patients or their legal representatives.

Authorized by legislation adopted by the Indiana General Assembly in 2013, the Indiana POST is for patients near the end of life. Preferences for life-sustaining treatments, including resuscitation as well as medical interventions such as comfort care, hospitalization, intubation, mechanical ventilation, antibiotics and artificial nutrition, are documented as medical orders on the form.

It must be reviewed and signed by a physician to be activated. A patient or representative signature is also required. The POST form transfers throughout the health-care system, and the orders are valid in all settings.

Hickman said POST was developed because one of the challenges in health care is that "we often fail to ask patients what they want."

Nationally recognized for her work with POST, Hickman said, "My goal is to help support patients and families in thinking about what kinds of care they do and don't want and to help them plan ahead."

» [Read more...](#)



Susan Hickman

## ANNOUNCEMENTS

### Cancer fight earns professor innovation award



School of Medicine professor Mark Kelley earned the inaugural Enterprise Research Commercialization Award this

month.

Pancreatic cancer kills in a swift, insidious way. Nearly impossible to detect early, it shows no symptoms until it spreads to other organs. Once it is diagnosed, which happens to nearly 49,000 Americans annually, about 80 percent of patients die within a year -- and about 95 percent within five years.

The list of those taken by pancreatic cancer or its complications is long and distinguished. It includes Steve Jobs and Wernher von Braun, inventors who changed our everyday lives. Others include actor Patrick Swayze, astronaut Sally Ride, jazz trumpeter Dizzy Gillespie and pro football player Harvey Martin. Closer to home, Indiana University's Nobel Prize-winning political economist, Elinor Ostrom, died of it in 2012. So did former IU and NCAA President Myles Brand in 2009.

Finding an effective weapon against pancreatic cancer, plus other forms of cancer and age-related macular degeneration, is Mark R. Kelley's life mission.

Currently the Betty and Earl Herr Chair in pediatric oncology and a professor at the [IU School of Medicine](#), Kelley's groundbreaking work has helped [ApeX Therapeutics](#) - a company he founded in 2005 -- develop a protein signaling inhibitor known as APX3330 that has shown "dramatic" efficacy against pre-clinical models of pancreatic cancer. This includes a two- to threefold reduction in tumors and less metastasis. Human clinical studies into APX3330's effectiveness are expected to begin soon.

In recognition of such achievements, Kelley received the inaugural [Innovation to Enterprise Research Commercialization Award](#). The ceremony was part of Wednesday's IUPUI Innovation Forum and Showcase, which highlights the research and successes of faculty, scientists and students throughout IUPUI.

The honor recognizes faculty innovation and social impact. It is sponsored by IUPUI's [Office of the Vice Chancellor for Research](#) and the Indiana University Research and Technology Corp. The event's keynote speaker was Richard DiMarchi, one of IU's most successful inventors and entrepreneurs and a recent inductee to the National Inventors Hall of Fame.

Kelley fills many roles in addition to his IUSM and ApeX duties. He is associate director for both the Herman B Wells Center for Pediatric Research and for Basic Science Research at IU's [Simon Cancer Center](#). He holds numerous patents related to using DNA repair targets for cancer and has published more than 166 articles in peer-reviewed research journals. He is also former chair of the Cancer Etiology Study Section at the National Institutes for Health.

Note: This story is part of an ongoing series highlighting [IUPUI's Strategic Plan](#) initiatives.

## 2016 IUPUI Research Day: Mark your calendars!

**SAVE THE DATE**  
**IUPUI RESEARCH DAY**

FOR ALL WHO CREATE, INNOVATE, AND EXPLORE

**APRIL 8, 2016**  
**9 AM - 3 PM**  
**IUPUI CAMPUS CENTER**  
420 UNIVERSITY BLVD, INDIANAPOLIS, IN 46202

Ψ  
IUPUI  
OFFICE OF THE  
VICE CHANCELLOR  
FOR RESEARCH

## JagStart Student Idea Pitch Competition

On November 18, 2015 we kicked-off one of OVCR's programs in support of student entrepreneurship and innovation—the JagStart Idea Pitch competition. This annual elevator pitch competition will be held on Friday, March 4, 2016, when finalists will compete for cash awards. A panel of judges will select the top three entries (top prize \$2,500), with an additional prize awarded to one finalist by vote of the audience.

The competition is open to all students over the age of 18, who are currently enrolled in a degree program through any school located at either the Indianapolis or the Columbus campuses. Both full and part time students may enter, from any of the undergraduate, graduate and professional degree programs. We're looking for "new ventures/new products" ideas, but the competition also encourages entries for social ventures. There may be some misconceptions on the part of students with respect to the kind of ideas that they might submit, or otherwise feel their ideas are a good fit for the competition. So we are strongly encouraging student to attend one of the Information Sessions scheduled, in order to better understand the competition requirements. ***Faculty and student organizations can also request a brief information session (10-15 min) for courses or special groups.***

### JagStart Idea Pitch Competition: Information Sessions

#### University Library - 1126 Conference Room

IUPUI Campus  
University Library – 1126 Conference Room

#### Wednesday November 18, 2015

Information Session #1: 8:30 AM-9:30 AM  
Information Session #2: 9:30 AM-10:30 AM

#### Tuesday December 1, 2015

Information Session 3: 1:30 PM-2:30 PM  
Information Session 4: 2:30 PM-3:30 PM

#### Monday January 11, 2016

Information Session 5: 1:00 PM-2:00 PM  
Information Session 6: 2:00 PM-3:00 PM

*NOTE: information sessions cover identical information, so students would only sign up for one of the listed options.*

Students can submit their written concept entries beginning on Monday, January 11, 2016 through the **entry deadline of Monday, February 1, 2016 at 5:00 pm.** There will be additional workshops offered to assist students in preparation and submission of their entries during the open submission period. Up to fifteen finalists will be selected to compete in the pitch competition event on March 4.

**Visit the JagStart website to learn more!**

<http://crl.iupui.edu/jagstart/index.asp>

### Submit poster abstracts for RESPECT Center's 2016 palliative care conference

Clinicians and researchers working in palliative and end-of-life care are invited to submit poster abstracts highlighting their clinical programs, quality improvement projects or research for the March 4, 2016, conference, Let's Talk Palliative Care: Continuity Across Settings. The conference is sponsored by the RESPECT Center at IUPUI. Space will be available to present posters throughout the session, and up to 10 authors will be invited to present posters and respond to questions during the morning session.



Those interested in presenting a poster should submit a 250-word abstract to [respectc@iupui.edu](mailto:respectc@iupui.edu) by Jan. 29, 2016, at 5 pm. Submission guidelines are available at [RESPECT Center 2016 Conference](#).

## **Institute for Broadening Participation STEM funding and research opportunities on PathwaysToScience.org**

The mission of Institute for Broadening Participation mission is to increase diversity in the Science, Technology, Engineering and Mathematics (STEM) workforce. IBP designs and implements strategies to increase access to STEM education, funding, and careers, with special emphasis on reaching underserved communities and diverse underrepresented groups. [www.PathwaysToScience.org](http://www.PathwaysToScience.org) makes it easy for faculty and administrators to access resources that can assist them in their efforts to reduce barriers to participation, create environments rich in the positive factors that support student success on the STEM pathway, and conduct outreach to underserved communities and underrepresented groups by implementing recruitment and retention strategies that broaden participation and increase diversity.

### ***Paid Summer 2016 Undergraduate Research Placements:***

Over 800 programs -- NSF REU, NASA and other paid summer research opportunities for undergrads

<http://www.pathwaystoscience.org/undergrads.aspx>

### ***For Financial Support in Graduate School :***

Fellowships and graduate programs in a wide variety of STEM disciplines:

<http://www.pathwaystoscience.org/grad.aspx>

### ***For tips on applying and associated resources:***

<http://www.pathwaystoscience.org/toolbox.aspx>

### ***For opportunities specifically in the Ocean Sciences:***

<http://www.pathwaystoscience.org/oceanscience.aspx>

### ***For opportunities specifically in Engineering:***

<http://www.pathwaystoscience.org/engineering.aspx>

## **Application deadline for predoctoral training awards and positions is Dec. 14**

Graduate students interested in applying for predoctoral funding awards and training positions through the Indiana Clinical and Translational Sciences Institute (CTSI) have until Monday, Dec. 14, to submit applications.

Funding is available for predoctoral students interested in translational research. The research may involve applying discoveries made during work in a lab, developing clinical trials and studies in humans, or carrying out research aimed at enhancing best practices. Predoctoral training positions are designed to provide students an opportunity for mentorship in research-intensive multidisciplinary settings as they work toward developing careers in translational research.

For application details and eligibility requirements, visit [indianactsi.org](http://indianactsi.org).

## **Call for Applications the FY2016 Imaging Technology Development Program (ITDP)**

The objective of the ITDP is to seed pilot projects for the development of new, innovative, imaging-related technologies that enhance broader, multidisciplinary, research programs. It is expected that the funded pilot projects will provide the preliminary studies needed to demonstrate the feasibility of developing and

implementing the new imaging-related technology and serve as the basis for securing additional external funding sources to further the new imaging technology and its utilization.

More complete descriptions of the ITDP and application guidelines are available on the IUPUI Office of the Vice Chancellor for Research InfoReadyReview portal. (<https://iupui.infoready4.com/>).

**Applications are due 5 p.m. Friday, January 15, 2016.** Questions regarding the ITDP should be directed to Etta Ward at [emward@iupui.edu](mailto:emward@iupui.edu) or 317-278-8427.

## CENTER SPOTLIGHT

### Nanotechnology-based sensor developed to measure microRNAs in blood, speed cancer detection

A simple, ultrasensitive microRNA sensor developed and tested by researchers from the schools of science and medicine at Indiana University-Purdue University Indianapolis and the Indiana University Melvin and Bren Simon Cancer Center holds promise for the design of new diagnostic strategies and, potentially, for the prognosis and treatment of pancreatic and other cancers.

In a study published in the November issue of [ACS Nano](#), a peer-reviewed journal of the American Chemical Society focusing on nanoscience and nanotechnology research, the IUPUI researchers describe their design of the novel, low-cost, nanotechnology-enabled reusable sensor. They also report on the promising results of tests of the sensor's ability to identify pancreatic cancer or indicate the existence of a benign condition by quantifying changes in levels of microRNA signatures linked to pancreatic cancer. MicroRNAs are small molecules of RNA that regulate how larger RNA molecules lead to protein expression. As such, microRNAs are very important in biology and disease states.

"We used the fundamental concepts of nanotechnology to design the sensor to detect and quantify biomolecules at very low concentrations," said Rajesh Sardar, Ph.D., who developed the sensor. "We have designed an ultrasensitive technique so that we can see minute changes in microRNA concentrations in a patient's blood and confirm the presence of pancreatic cancer." Sardar is an assistant professor of chemistry and chemical biology in the [School of Science at IUPUI](#) and leads an interdisciplinary research program focusing on the intersection of analytical chemistry and the nanoscience of metallic nanoparticles.

"If we can establish that there is cancer in the pancreas because the sensor detects high levels of microRNA-10b or one of the other microRNAs associated with that specific cancer, we may be able to treat it sooner," said Murray Korc, M.D., the Myles Brand Professor of Cancer Research at the [IU School of Medicine](#) and a researcher at the [IU Simon Cancer Center](#). Korc, worked with Sardar to improve the sensor's capabilities and led the testing of the sensor and its clinical uses as well as advancing the understanding of pancreatic cancer biology.



Rajesh Sardar, Ph.D. (L) and Murray Korc, M.D. in the Sardar lab at the School of Science Photo credit: Whitney Walker (IUPUI undergrad)

» [Read more...](#)

## INSTITUTE SPOTLIGHT

### **Precision monitoring to transform health care: Right data, right person, right time**

Precision medicine – prevention and treatment strategies taking individual patient variability (genes, environment, lifestyle) into account – is emerging as a way to revolutionize the practice and outcomes of medical care. In a similar way, with the advent of electronic health record systems in hospitals and doctors' offices, precision monitoring of care – using available information on an individual to ensure that the right person receives the right data at the right time – also is emerging as a way to promote high quality, efficient care and improve patient outcomes.



With the support of a new \$5 million award from the U.S. Department of Veterans Affairs, researcher-clinicians with the Richard L. Roudebush VA Medical Center, the Regenstrief Institute and Indiana University School of Medicine are at the forefront of this change.

The new VA award funds the unique five-year, multi-site Precision Monitoring (PRIS-M) program. PRIS-M will use existing VA electronic health data to implement actionable, personalized, timely monitoring to generate data to transform care quality and outcomes.

Projects will take place in various health care environments including the Emergency Department, inpatient units and outpatient units, and will focus on diverse medical conditions. In addition to studying the technical solutions to precision monitoring, investigators also will study how providing actionable data can be used to activate healthcare providers and teams to engage in improvement activities without drowning in information overload.

"The VA is the single largest provider of health care in the United States with a wealth of patient information and a single unified electronic health record. It is ideally poised to apply precision monitoring to transform care and outcomes for veterans and to exert national leadership in this important area," said co-principal investigator of the new program, Linda S. Williams, M.D.

"The potential impact of our study is vast," said Dr. Williams. "I believe what we are dealing with in the VA is similar to what other healthcare systems will encounter as they move forward to meet new government regulations and envision and manage care as an accountable care organization rather than as a single hospital or clinic." Dr. Williams is an investigator with the Roudebush VA Medical Center in Indianapolis and the Regenstrief Institute, and a professor of neurology at the IU School of Medicine.

» [Read more...](#)

## FACULTY SPOTLIGHT

### **Biomarker predicting transplant complications may be key to treating them**

A protein that can be used to predict if a stem cell transplant patient will suffer severe complications may also be the key to preventing those complications, an international research team based at the Indiana University School of Medicine

reported Wednesday.

In the study, reported in the journal [Science Translational Medicine](#), researchers said that blocking the activity of the protein called ST2 offers a potential new treatment for graft-versus host-disease, an immune problem that affects many transplant recipients.



Sophie Paczesny, M.D., Ph.D.

Although transplant specialists have been able to reduce its impact, graft-versus-host disease remains a leading cause of death among patients who receive a stem cell transplant from another person, known as an allogeneic transplant. Such transplants are used to treat blood and bone marrow cancers such as leukemia, lymphoma and multiple myeloma, often as a last resort. Graft-versus-host disease occurs when immune cells from the transplant see the patient's body as foreign and attack it.

In previous research, Sophie Paczesny, M.D., Ph.D., professor of pediatrics and of microbiology and immunology, and colleagues reported that patients with a high level of ST2 were more than twice as likely to have graft-versus-host disease that resisted standard treatment with steroids; and nearly four times as likely to die within six months of the transplant.

In the new research, Paczesny and colleagues determined that the version, or isoform, of ST2 associated with graft-versus-host disease is produced at high levels in the intestines, where much of the damage from the disease occurs.

Using mouse models of the disease, the researchers found that blocking the activity of ST2 resulted in reduced severity of graft-versus-host disease and lower mortality. In addition, blocking ST2 did not reduce the effectiveness of the transplant as a treatment for leukemia.

The results, said Dr. Paczesny, "provide a proof of principle that this molecule and associated pathways are potential targets for new therapies that could provide targeted treatment for patients most at risk for severe graft-versus-host disease."

» [Read more...](#)

## STUDENT SPOTLIGHT

### Can Undergraduate Save the World with Science?



Elliot Boyle, Undergraduate, Earth Sciences



Elliot Boyle wants to save the world. He might not admit to such a lofty goal, but as an environmental sciences major he is excited to make an impact on conserving and protecting our planet through sustainable scientific approaches.

Growing up, Boyle's family spent much of their time outdoors and put an emphasis on traveling, encouraging him to develop an affinity for diverse ecosystems and environmental concerns from a young age.

"I chose my degree to gain a better understanding of the natural systems of the earth, and how humans currently work to sustain them," he shared. "I hope to use my knowledge of science to help solve some of the environmental issues that we are currently facing and will continue to fight against in the future."

### ***Understanding the environment***

Wasting no time in gaining hands-on experience with environmental sciences research, Boyle began an internship with the Heritage Research Group the day after he graduated high school. Nearing the end of his fourth year with Heritage, Boyle works in environmental remediation to solve compliance issues that companies face due to environmental regulations.

Through this internship, along with campus and international research programs, Boyle says he has gained a deeper appreciation for the interdisciplinary work that goes into solving problems in environmental fields.

In *Philanthropolis*, a project through IUPUI's [Multi-Disciplinary Undergraduate Research Institute](#), Boyle explored the contrast between non-profit organizations and city governments in the creation of major public works through anthropology and sustainable policy perspectives.

Boyle also participated in an IUPUI study abroad program in Russia where he worked on projects that combined law, climate change, and conservation perspectives to study the Russian environment.

## TRANSLATIONAL RESEARCH IMPACT

### **IU researchers to use \$5 million grant to improve diabetes management in children**

With a \$5 million grant from The Leona M. and Harry B. Helmsley Charitable Trust, an Indiana University-led team will develop and test interventions to help families with young children with type 1 diabetes better manage the disease.

The project, led by [Linda A. DiMeglio](#), M.D., M.P.H., professor of [pediatrics at the IU School of Medicine](#), will focus on barriers to the use of new diabetes management technologies, such as continuous glucose monitoring systems, in children younger than 8 years old. The goal, Dr. DiMeglio said, is to make it easier for parents to help their children keep their blood sugar levels within recommended ranges and improve quality of life for families.



Linda A. DiMeglio, M.D., M.P.H.

"We have known for a long time that low blood sugar levels are bad for the developing brain, but there's evidence from recent studies that high blood sugar levels also affect brain development. So there's a great need to work with families and caregivers of young children to get more of their blood sugars in range," Dr. DiMeglio said.

About 1.25 million Americans have type 1 diabetes, which occurs when the body does not produce insulin that is needed to convert glucose into energy. Those with the disease must take insulin to keep blood sugars as close to normal as possible. Dangers of low blood sugar levels include seizure and coma. High blood sugar levels can also be life-threatening and over time can lead to chronic complications.

For more on the interventions, visit [IUSM Newsroom](#).

## OVCR INTERNAL GRANT DEADLINES

**Release Time for Research (RTR):** IUPUI maintains a robust research enterprise. To support faculty with adequate time to prepare competitive proposals, the IUPUI Office of the Vice Chancellor for Research has developed the Release Time for Research (RTR) internal funding mechanism. This funding program allows IUPUI faculty a "buyout" of teaching time to prepare high quality grant/contract proposals for submission to external funding agencies. It also supports non-tenure track faculty who are full-time senior lecturers or clinical track faculty possessing terminal degrees relevant to their fields, and who have a desire to engage in research or creative activity in an area that directly relates to their teaching or service mission. *The next RTR application deadline is **February 1 and July 1, 2016**.* For grant guidelines and application forms, go to <http://research.iupui.edu/funding/>.

**IUPUI ARTS AND HUMANITIES INTERNAL GRANT (IAHI):** The IAHI Grant Program exists to support campus-wide attainment of excellence in research and creative activity in arts and humanities. It is designed to enhance the research and creative activity mission of IUPUI by supporting research projects and scholarly activities that are conducted by arts and humanities faculty. *The IAHI application deadline is **February 15, 2016**.* For grant guidelines and application forms, go to <http://research.iupui.edu/funding/>.

**Developing Diverse Researchers with InVestigative Expertise (DRIVE):** The Developing Diverse Researchers with InVestigative Expertise (DRIVE) program is designed to enhance the diversity and research and creative activity mission of IUPUI. Faculty from historically underrepresented populations, usually defined as African-American, Latino-American, Native American, Pacific Islanders, and women, are particularly encouraged to apply. The DRIVE program supports projects that have the potential for sustainability through external funding. *The next DRIVE application deadline is **March 1, 2016**.* For grant guidelines and application forms, go to <http://research.iupui.edu/funding/>.

**Funding Opportunities for Research Commercialization and Economic Success (FORCES):** The FORCES program is designed to support IUPUI researchers in the successful transformation of their research findings into commercially viable outcomes. The key goals of FORCES are to support: 1) realization of short-term projects that will enhance commercial value of IUPUI intellectual property assets, by facilitating commercialization of inventions, technologies, or other intellectual property derived from existing research projects; and 2) development of research initiatives that show great promise for commercialization of the research outcomes. *The next FORCES application deadline is **March 15, 2016**.* For grant guidelines and application forms, go to <http://research.iupui.edu/funding/>.

## CURRENT EXTERNAL FUNDING OPPORTUNITIES

Funding opportunities in this section include selected current grant announcements from federal agencies for new initiatives and changes to existing programs. Announcements with limited scope are not listed here but instead are sent directly to IUPUI School Deans. For comprehensive coverage of funding opportunities, please use the links below to search online tools.

## National Endowment for the Humanities

**Next Generation Humanities PhD Implementation Grants:** In recent years, research has revealed that humanities PhDs pursue careers in many different professions--both inside and outside academia. Yet most humanities PhD programs in the United States still prepare students primarily for tenure-track professor positions at colleges and universities. The increasing shortage of such positions has changed students' expected career outcomes. NEH therefore hopes to assist universities in implementing a new model of doctoral education, which can both transform the understanding of what it means to be a humanities scholar and promote the integration of the humanities in the public sphere.

Next Generation Humanities PhD Implementation Grants support universities in instituting wide-ranging changes in humanities doctoral programs. Humanities knowledge and methods can make an even more substantial impact on society if students are able to translate what they learn in doctoral programs into a multitude of careers. These grants are designed to produce plans that will transform scholarly preparation in the humanities at the doctoral level. Students will be prepared to undertake various kinds of careers, and humanities PhD programs will increase their relevance for the 21st century. *Deadline: Application: February 17, 2016.*

<http://www.neh.gov/grants/challenge/next-generation-humanities-phd-implementation-grants>

## NATIONAL INSTITUTES OF HEALTH

**Molecular Transducers of Physical Activity Bioinformatics Center (U24):** The overall goals of the Bioinformatics Center are to provide a database and associated tools for storage and integration of clinical physiological and metabolic data along with multiple types of chemical analysis data derived through metabolomics, proteomics, genomics, transcriptomics, or similar technologies. In addition, the Bioinformatics Center will coordinate implementation of data and ontology-based metadata standards, provide tools for analysis and visualization of data, provide rapid access to accumulated data and tools through the use of cloud-based computing, and conduct preliminary data analysis of the diverse datasets submitted by other MoTrPAC elements.

Six companion FOAs will establish the elements of the MoTrPAC. Clinical Centers will collect tissues such as blood, muscle, and fat from well-characterized participants engaging in physical activity. Biospecimens will be analyzed by Genomics, Epigenomics, and Transcriptomics Chemical Analysis Sites and Metabolomics and Proteomics Chemical Analysis Sites. Preclinical Animal Studies Sites (PASS) will provide additional tissues that cannot be obtained from human subjects and allow for further characterization and validation of molecular transducers identified from the chemical analysis of human samples. A Bioinformatics Center will oversee data standardization, integration, and storage and will implement data sharing and computational tools for the integrated analysis of clinical and molecular data. Overall coordination will be provided by a Consortium Coordination Center (CCC). *Deadlines: Letter of Intent: February 18, 2016; Proposal: March 18, 2016.*

<http://grants.nih.gov/grants/guide/rfa-files/RFA-RM-15-012.html>

**Household Air Pollution (HAP) Health Outcomes Trial (UM1):** This opportunity seeks applications from institutions/organizations for a cooperative agreement research grant to conduct a clinical trial across three or more Low and Middle Income Country (LMIC) settings to test improved stove and fuel interventions on health outcomes in exposed populations. In addition, each application must include a biomarker center element for the development and validation of clinical, physiological, chemical, biochemical and/or microbiological markers of: a) exposure, and b) pathophysiological responses.

Components of Participating Organizations: National Heart, Lung, and Blood Institute

(NHLBI), National Cancer Institute (NCI), Eunice Kennedy Shriver National Institute of Child Health and Human Development (NICHD), National Institute of Environmental Health Sciences (NIEHS), Fogarty International Center (FIC), Office of Strategic Coordination (Common Fund). *Deadlines: Letter of Intent: December 1, 2015; Application: January 19, 2016.* <https://grants.nih.gov/grants/guide/rfa-files/RFA-HL-16-012.html>

**Advanced Clinical Trials to Test Artificial Pancreas Device Systems in Type 1 Diabetes (UC4):** This opportunity will support the conduct of advanced clinical trials designed to test the outpatient clinical safety and efficacy of artificial pancreas (AP) device systems in type 1 diabetes with the objective of improving glycemic control, reducing acute complications and improving quality of life. These trials should generate data able to satisfy safety and efficacy requirements by regulatory agencies regarding the clinical testing of AP device systems. *Deadlines: Letter of Intent: February 9, 2016; Application: March 9, 2016.* <http://grants.nih.gov/grants/guide/rfa-files/RFA-DK-16-008.html>

## NATIONAL SCIENCE FOUNDATION

**Cybersecurity Innovation for Cyberinfrastructure (CICI):** The objective of the Cybersecurity Innovation for Cyberinfrastructure (CICI) program is to develop and deploy security solutions that benefit the scientific community by ensuring the integrity and reliability of the end-to-end scientific workflow. This solicitation seeks unique ways to protect scientific instruments, resources, cyberinfrastructure and data that extend beyond building better perimeters and point solutions.

The scope of workflow encompasses instruments, processing software, analysis tools, computing and storage resources as well as information repositories and data archives. In order to produce accurate results, each data source must be identifiable and trustworthy. Systems must guarantee that data sets cannot be altered, which could potentially modify the analytic outcomes. CICI comprises three Program Areas: 1. Secure Architecture Design, 2. Data Provenance for Cybersecurity, and 3. Cybersecurity Center of Excellence.

NSF-funded cyberinfrastructure presents unique challenges for operational security personnel. The research environment is purposefully built as an "open" one, in which data is freely accessed among collaborators. As such, sites, centers, campuses and institutions that host cyberinfrastructure must find the right balance of security, privacy and usability while maintaining an environment in which data are openly shared. Many research organizations lack expertise in technical and policy security and could benefit from an independent, shared security resource pool. *Deadline: June 2, 2016.* [http://nsf.gov/funding/pgm\\_summ.jsp?pims\\_id=505159&org=NSF&sel\\_org=NSF&from=fund](http://nsf.gov/funding/pgm_summ.jsp?pims_id=505159&org=NSF&sel_org=NSF&from=fund)

**Tectonics:** The Tectonics Program supports a broad range of field, laboratory, computational, and theoretical investigations aimed at understanding the deformation of the terrestrial continental lithosphere (above lithosphere-asthenosphere boundary). The Program focuses on non-magmatic deformation processes and their tectonic drivers that operate at any depth within the continental lithosphere, on time-scales of decades/centuries (active tectonics) and longer, and at micro- to plate boundary/orogenic belt length-scales.

The Tectonics Program is part of the Division of Earth Sciences (EAR). EAR provides funding for the conduct of research concerning the solid Earth and its surface environment. EAR supports investigations of the Earth's structure, composition, evolution, and the interaction of the lithosphere with the Earth's biosphere, atmosphere, and hydrosphere. In addition, EAR provides support for instrumental and observational infrastructure, cyberinfrastructure, and innovative educational and outreach activities. Projects may employ any combination of field, laboratory, and computational studies with observational, theoretical, or experimental approaches.



*Deadline: June 27, 2016.* [http://www.nsf.gov/funding/pgm\\_summ.jsp?pims\\_id=13673](http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=13673)

**Expeditions in Computing:** The Expeditions in Computing (Expeditions) program has been created to tap the great reservoir of opportunities that fundamental research advances in computing and information promise for the future. The program is designed to inspire the research and education community to be as creative and imaginative as possible in the design of bold Expeditions that explore new scientific frontiers. Investigators in the computer and information science and engineering fields and beyond are encouraged to come together within and/or across departments or institutions in the development of compelling, transformational research agendas that promise disruptive innovations in computing and information for many years to come.

The Expeditions program has three goals: 1) To catalyze far-reaching research explorations motivated by deep scientific questions or hard problems in the computing and information fields and/or by compelling applications that promise significant societal benefits; these explorations may exploit advanced cyberinfrastructure to enable and accelerate discovery and innovation across disciplines; they should be ambitious and potentially transformative, but also focused toward achieving concrete progress given the anticipated duration and funding levels; 2) To inspire current and future generations of Americans, especially those from under-represented groups, to pursue rewarding careers in computer and information science and engineering; and 3) To stimulate significant research and education outcomes that, through effective knowledge transfer mechanisms, promise scientific, economic and/or other societal benefits. *Deadlines:* Preliminary Proposal: *March 9, 2016; Application: Dec. 14, 2016.*

[http://www.nsf.gov/funding/pgm\\_summ.jsp?pims\\_id=503169](http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=503169)

## U.S. Department of Justice

**New Approaches to Digital Evidence Processing and Storage:** The U.S. Department of Justice (DOJ), Office of Justice Programs (OJP), National Institute of Justice (NIJ) is seeking applications for funding for research and technology development leading to the introduction into practice of new, innovative means to: (1) speed forensic processing of large capacity digital media, and (2) reduce digital evidence storage requirements. This program furthers the Department's mission by sponsoring research to provide objective, independent, evidence-based knowledge and tools to meet the challenges of crime and justice, particularly at the State and local levels. *Deadline: April 28, 2016.*

<http://www.nij.gov/funding/pages/current.aspx>

**NOTE:** All faculty, researchers, and scientists on continuing contracts at IU interested in applying for Department of Defense funding are eligible for assistance by the consulting firm--Cornerstone Government Affairs-- arranged by the Vice President for Research. Those interested in securing assistance from Cornerstone must submit a two-page summary of their research project and a CV or biosketch to the VP for Research Office at [vpr@iu.edu](mailto:vpr@iu.edu). Prior to submission, the IUPUI Office of the Vice Chancellor for Research is offering assistance with the two-page summaries. For more information, contact Ann Kratz [akratz@iupui.edu](mailto:akratz@iupui.edu).

## IDENTIFYING FUNDING OPPORTUNITIES

On-line search tools are available to IUPUI investigators who are interested in identifying funding opportunities in their areas of interest.

**Community of Science (COS) Pivot:** Pivot is a primary on-line search tool for identifying funding opportunities. To take advantage of this tool, register at

<http://pivot.cos.com/register>. Once you have completed the short registration process, you can personalize your search by selecting the option entitled "launch your workbench". You can access federal, local, corporate, foundation, nonprofit and other funding opportunities using key terms and save the results of up to 20 searches and have them delivered to you weekly via email.

**National Institutes of Health (NIH) "NIH Guide"**: To take advantage of this search tool, register at <http://grants.nih.gov/grants/guide/listserv.htm>. It allows you to receive discipline specific funding opportunities that are delivered to you weekly via email.

**National Science Foundation (NSF) "MyNSF"**: To take advantage of this search tool, register at [http://service.govdelivery.com/service/multi\\_subscribe.html?code=USNSF&custom\\_id=823](http://service.govdelivery.com/service/multi_subscribe.html?code=USNSF&custom_id=823). It allows you to receive discipline specific funding opportunities that are delivered to you weekly via email.

**Federal Business Opportunities "FedBizOpps"**: FedBizOpps is the single government point-of-entry for Federal government procurement opportunities over \$25,000. To take advantage of this search tool, visit <https://www.fbo.gov>. Opportunities found at this site include, but are not limited to, presolicitations and special notices for research and service contracts for specific projects and some national centers and surveys that would not be found in Grants.gov and may not be found in the Community of Science.

#### **Limited Submission Funding Opportunities:**

Many federal agencies and foundations offer grants, awards and fellowships that limit the number of applications that can come from one institution or require special handling. In order to comply with agency and foundation guidelines and increase the chances of Indiana University (IU) succeeding in such limited submissions and special handling opportunities, IU policies and procedures are in place and are utilized by the Office of the Vice Chancellor for Research and other IU research offices to facilitate internal coordination and competitions.

Individuals interested in responding to limited submission opportunities must inform the Office of the Vice Chancellor for Research about their intent to apply to a given limited submission opportunity, such that they can be included in the internal review and selection process. Failure to do so may disqualify individuals from consideration for submission to the funding opportunity.

Individuals interested in a limited submission opportunity or have any questions about the internal coordination process, contact Etta Ward at [emward@iupui.edu](mailto:emward@iupui.edu) or 317-278-8427. For a description of upcoming limited submission funding opportunities, as well as guidelines and application forms, go to: [http://research.iu.edu/limited\\_sub.shtml](http://research.iu.edu/limited_sub.shtml). Please note that this is not a comprehensive list, and that any external funding opportunity that imposes any type of submission limitation is subject to the IU limited submission policy and procedures.

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