

Research Enterprise

October 15, 2015

INSIDE THIS ISSUE:

- [Message from the Vice Chancellor for Research](#)
- [Feature Stories](#)
- [Announcements](#)
- [Center Spotlight](#)
- [Institute Spotlight](#)
- [Faculty Spotlight](#)
- [Student Spotlight](#)
- [Translational Research Impact](#)
- [OVCR Internal Grant Deadlines](#)
- [OVCR Events and Workshops](#)
- [Other Events and Workshops](#)
- [Recent External Funding Awards](#)
- [Current External Funding Opportunities](#)
- [Identifying Funding Opportunities](#)

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:

[Development Administration](#)
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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:

The Indiana University [Grand Challenges](#) initiative is upon us, and many investigators across campus are involved in discussions around one of the proposals being developed in Indianapolis and Bloomington. Pre-proposals for the first round of Grand Challenges are due November 9th, so time is short for additional participants to join these teams. All the active proposals are linked from the IU [Grand Challenges](#) website, with contact information for each. Proposals selected for development of a full proposal will work closely with schools, campuses and university administration and it's quite likely that they will change significantly as the final proposals emerge. This is intended to be an open process that continues to engage the university community and also reaches out to our community.



Vice Chancellor Simon Atkinson

Many of you have discussed ideas that may not fit within the framework of one of the current proposals or that aren't on the scale or scope envisioned by the Grand Challenge program. I strongly encourage you to continue these conversations. You might have the kernel of a competitive proposal for the next round of funding (likely to be in 2017). We will also be working on mechanisms to help you to transform these discussions into funded initiatives, as we work to support the continued growth and development of our campus's research, scholarship and creative activity.

Simon Atkinson

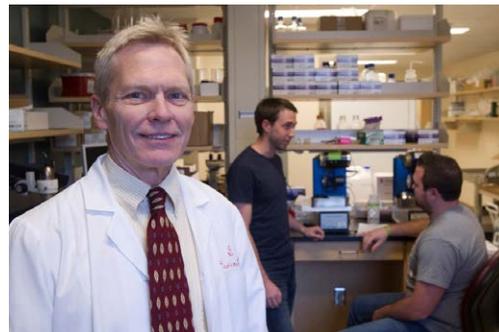
Vice Chancellor for Research

FEATURE STORIES

NIH training grant to grow IU musculoskeletal research and recruitment

To boost the population of scientists studying musculoskeletal disorders and ultimately to improve treatment, the National Institutes of Health has awarded the Indiana University School of Medicine a \$1.6 million, five-year grant for a Comprehensive Musculoskeletal Training Program.

The grant for the new musculoskeletal training program will fund three pre-doctoral graduate students from any area of basic science or biomedical engineering, three post-doctoral fellows in labs involved in musculoskeletal research and three to five first-year medical students in a summer research program.



David Burr, Ph.D.

The funding comes at a time when the aging of baby boomers is expected to dramatically increase rates of musculoskeletal disorders such as arthritis, bone fractures, back pain and muscle weakness. And while musculoskeletal disorders are the leading cause of disability in the U.S., federal investment in this research is disproportionately low.

The grant was awarded in early 2015 and implemented in July, with five first-year medical students completing the summer program in 2015 and three pre-doctoral students currently at work. Recruitment is underway for the three post-doctoral fellows.

"We're always looking for skilled physician-scientists who can complement their clinical work with academic research. The post-doctoral positions can help us develop physician-scientists," said David Burr, Ph.D., and principal investigator on the grant. "At the same time, this training grant will help support the new Center for Musculoskeletal Health's initiative to bring together both basic and clinical investigators in synchronized pursuit of solutions to musculoskeletal disease."

Three IU projects receive \$690,000 in latest round of National Endowment for the Humanities funding

The National Endowment for the Humanities has awarded \$690,000 to three Indiana University research and learning projects.

The NEH grants will fund a summer training program for university and college faculty interested in exploring the cultures of African and African diaspora cities; a workshop series on applying digital methods to issues in Native American and Indigenous studies; and the Santayana Edition's ongoing publication of writings of American philosopher George Santayana.

The three IU projects -- two on the Indiana University-Purdue University Indianapolis campus and one at Indiana University Bloomington -- are among [212 projects sharing \\$36.6 million](#) in recent NEH funding.



George Santayana

"The grant projects represent the very best of humanities scholarship and

programming," NEH Chairman William Adams said. "NEH is proud to support programs that illuminate the great ideas and events of our past, broaden access to our nation's many cultural resources, and open up for us new ways of understanding the world in which we live."

The IUPUI projects, both housed in the IU School of Liberal Arts, are as follows.

"The Digital Native American and Indigenous Studies Project," \$249,817 for a series of three workshops on teaching new digital methods and exploring issues of digital cultural heritage in Native American studies, to be directed by IUPUI assistant professor of history Jennifer Guilliano. Yale University, Arizona State University and IUPUI will in turn host a three-day workshop for 35 participants.

"The Works of George Santayana," directed by associate professor of philosophy Martin Coleman, which involves the preparation for print and digital publication of American philosopher George Santayana's "Three Philosophical Poets" (Vol. 8), "Winds of Doctrine" (Vol. 9), and "Skepticism and Animal Faith" (Vol. 8) and the beginning of work on "Realm of Being," (Vol. 16). A three-year grant of \$225,000 and \$23,623 in matching funds to the Santayana Edition will provide salaries for an editor and graduate student interns who will contribute to the production of the printed and electronic texts.

Indiana University Bloomington received \$191,592 for "Arts of Survival: Recasting Lives in African Cities," a three-week seminar for 25 college and university faculty who will study the arts and culture of Accra, Lagos, Nairobi, New Orleans and Port-au-Prince. The project is led by Eileen Julien, director of IU's Institute for Advanced Study.

"Arts of Survival" will take place on the Bloomington campus in July. The seminar will host high school and college educators and graduate students and will feature presentations by faculty who teach at IU Bloomington and in South Africa. Participants will also spend a weekend in New Orleans to experience first-hand an urban culture examined in the classroom.



Eileen Julien

"We aim to enable seminar presenters and participants to develop a deeper understanding of the lives of individual cities, their challenges and possibilities, and a broad view of the richness, complexity and diversity of contemporary urban experiences across Africa and Africa's Atlantic diaspora," said Julien, who is also a professor of comparative literature at IU Bloomington.

Organizers believe the IUPUI Native American studies project is the first workshop specifically focused on digital humanities that encourages participants in the development of a more systematic approach to integrating digital technologies within and throughout academic institutions, cultural organizations and tribal communities.

"While tremendous work has been done around the preservation and access of analog materials within Native American communities, there has been much less attention paid to the ways in which digital objects, practices and methods function within Native communities and through Native American studies scholarship," Guilliano said.

The international reputation and broad appeal of Santayana justifies the Santayana Edition's aim of preserving and disseminating Santayana's thought in reliable and accurate texts. This will be published as "The Works of George Santayana" so readers can research, evaluate and appreciate Santayana's role in shaping American letters, Coleman said.

ANNOUNCEMENTS

Clinical Practice Initiative award

The Indiana University School of Medicine is one of 39 health care collaborative networks selected to participate in the Transforming Clinical Practice Initiative, announced today by Health and Human Services Secretary Sylvia M. Burwell. The IU School of Medicine will receive up to \$46.4 million to provide technical assistance support to help equip clinicians in the Midwest with tools, information, and network support needed to improve quality of care, increase patients' access to information, and spend health care dollars more wisely.

"Supporting doctors and other health care professionals change the way they work is critical to improving quality and spending our health care dollars more wisely," said Secretary Burwell. "These awards will give patients more of the information they need to make informed decisions about their care and give clinicians access to information and support to improve care coordination and quality outcomes."

As a Practice Transformation Network, the IU School of Medicine will support 11,500 clinicians to expand their quality improvement capacity, learn from one another, and achieve common goals of improved care, better health, and reduced cost. The network will provide implementation science, process improvement and personalized population health management to help participating clinicians meet the initiative's phases of transformation and associated milestones, clinical and operational results.

These awards are part of a comprehensive strategy advanced by the Affordable Care Act that enables new levels of coordination, continuity, and integration of care, while transitioning volume-driven systems to value-based, patient-centered, health care services. It builds upon successful models and programs such as the Hospital Value-Based Purchasing Organization Program, Partnership for Patients with Hospital Engagement Networks, and Accountable Care Organizations.

For more information on the Transforming Clinical Practice Initiative, please visit: <http://innovation.cms.gov/initiatives/Transforming-Clinical-Practices/>

Corson awarded \$100,000 research grant to study pediatric eye cancer

Timothy Corson, Ph.D., assistant professor of ophthalmology at the IU School of Medicine and researcher at the Indiana University Melvin and Bren Simon Cancer Center and the Eugene and Marilyn Glick Eye Institute, has been awarded a \$100,000 Research Grant Award from the [St. Baldrick's Foundation](#) to support his research on retinoblastoma, a cancer of the eye in children that can cause blindness or death.

The award provides funding for year-long research projects that look to find new and better cures for childhood cancers, according to the Foundation.

Dr. Corson's team has developed a new chemical that blocks abnormal blood vessel growth in the eye without side effects. By blocking new blood vessel formation, they will starve a growing retinoblastoma tumor of oxygen and nutrients and stop its growth. If successful, this work will pave the way for development of a new retinoblastoma drug and also testing in other pediatric and adult cancers.

IUPUI Innovation to Enterprise Forum & Showcase

The Office of the Vice Chancellor for Research and the
Indiana University Research & Technology Corporation

(IURTC) invite you to the IUPUI Innovation to Enterprise Showcase & Forum. This annual event highlights the research and creative successes of our faculty, research scientists, and students from across the campus. This year's keynote speaker is Dr. Richard DiMarchi, co-founder of five companies and former Group Vice President for Eli Lilly & Company. The event will also recognize faculty innovation and social impact with presentation of the inaugural Innovation to Enterprise Research Commercialization Award.



Keynote Speaker
Dr. Richard DiMarchi

The event will conclude with a networking reception and showcase featuring new ventures arising from faculty research at the Indianapolis campus, hosted by SpinUP Business Catalyst group. SpinUP was created to help IU researchers bring promising technologies to market by starting their own companies, and helps with the early administrative functions of running a business so faculty members can focus on the research that drives it.

To register for this event, go to <https://crm.iu.edu/CRMEvents/InnovationForum2015/>.

Questions can be directed to Karen White at kfwhite@iupui.edu or (317) 274-1083.

Call for Applications for 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/). (<https://iupui.infoready4.com/>).

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

Webinars for Applicants and Grant Administrators: What You Need to Know About NIH Application Submission and Review

The National Institutes of Health (NIH) Center for Scientific Review (CSR) is hosting two upcoming webinars in November 2015, primarily targeted to new NIH applicants, their mentors, and grant administrators at their institution. These webinars are designed to give participants useful insights into our application submission and peer review processes. CSR is the portal for NIH grant applications and their review for scientific and technical merit.

Each Webinar Will Have a Different Focus

Webinar Focus	Date
University Research Administrators	November 5, 2015

All of the webinars will run from 2:00 to 4:00 p.m. EST, including a 30 minute Q&A period.

Viewers will see presentations by five CSR/NIH experts on the following topics.

- The Review of Your NIH Grant Application Begins Here
- What You Need to Know about Application Receipt and Referral
- How Your Application Is Reviewed
- Key Things to Know About the NIH Grants Program
- Jumpstart Your Career with CSR's Early Career Reviewer Program (R01 webinar only)

To learn how to participate in the webinar and view archived webinars, go to <http://grants.nih.gov/grants/guide/notice-files/NOT-OD-15-154.html>.

If you have general questions about the NIH application and review processes at other times, please visit the [CSR](#) or the [NIH Grants and Funding](#) websites. The [NIH Information Service](#) can address specific questions.

Inquiries can be directed to the Center for Scientific Review at 301-435-1111 or AskExperts@csr.nih.gov.

CENTER SPOTLIGHT

IU scientists to lead \$12 million national initiative for new treatments for inherited cancers

The Indiana University School of Medicine has been selected to lead a five-year, \$12 million national research project to develop new treatments for diseases of a genetic mutation that leads to disfiguring and life-threatening tumors and other developmental disorders, mainly in children.

The grant, one of the highly competitive and coveted projects funded by the National Cancer Institute's [Specialized Programs of Research Excellence](#) initiative, is the first such SPORE grant to focus on pediatric cancers.

"This grant enables us to engage in research from the basic science lab to clinical trials to discover new treatments for a broad range of devastating cancers and related disorders, drawing on a team of some of the finest researchers in this field across the country," said D. Wade Clapp, M.D., chairman of the [Department of Pediatrics](#) at the [IU School of Medicine](#) and a member of both the [IU Melvin and Bren Simon Cancer Center](#) and the [Herman B Wells Center for Pediatric Research](#).



Dr. Wade Clapp, M.D.

Dr. Clapp, who will serve as the corresponding principal investigator for the new project, said the funding will enable researchers to determine the complete genetic sequence of the research participants, providing unique opportunities to design precise treatments for patients, to adopt new research techniques, and better understand how tumors develop resistance to drugs.

The disease at the heart of the project is neurofibromatosis type 1, which affects 1 in 3000 children and is the most commonly inherited syndrome causing a

predisposition to cancer. Neurofibromatosis is more prevalent than cystic fibrosis, Duchenne muscular, dystrophy and Huntington's disease combined, according to the Children's Tumor Foundation.

The mutation in the NF1 gene leads to a variety of symptoms, from mild to severe. Patients can develop café au lait spots and disfiguring tumors on or just under the skin. Internally, tumors can develop along nerve tissue and cause problems if they begin to press against vital organs or the windpipe. Some patients suffer from chronic pain.

In addition, recent research has found NF1 mutations in a variety of other types of cancers. NF1 mutations also affect an important molecular signaling protein called Ras, which, Dr. Clapp noted, is involved with more than a third of all cancers. In the process of developing better treatments for those with NF1 disorders, the research should also point the way toward new therapies for many other cancers, he said.

Dr. Clapp and colleagues at IU have been leaders in neurofibromatosis research, having first reported in 2008 that the drug Gleevec appeared to be the first effective treatment for neurofibromatosis type 1 tumors. Subsequent research substantiated that finding but also determined that in some patients' genetic factors and tumor resistance hampered Gleevec's effectiveness.

The National Cancer Institute's Specialized Programs of Research Excellence, generally known as SPORE, are highly competitive grants awarded to projects that assemble research activities ranging from a better understanding of basic human biology all the way to clinical trials that lead to new treatments.

In addition to researchers from IU, the neurofibromatosis SPORE group -- Developmental and HyperActive Ras Tumor (DHART) SPORE, or simply DHART SPORE -- will include collaborators from the University of California at San Francisco, the National Cancer Institute, the University of Texas Southwestern, Johns Hopkins University, the University of Alabama-Birmingham, and the University of North Carolina.

INSTITUTE SPOTLIGHT

Researchers to develop breathalyzer-type low blood sugar warning device for diabetes

A multidisciplinary team of researchers at Indiana University-Purdue University Indianapolis has been awarded a \$738,000 National Science Foundation grant to develop a breathalyzer-type device to detect the onset of hypoglycemia, or low blood sugar episodes, in people with diabetes.

"Existing technology tracks current blood sugar levels, but it doesn't alert the patient to an upcoming hypoglycemic episode," said principal investigator Kody Varahramyan, senior aide to the chancellor and professor of electrical and computer engineering.

Hypoglycemia can be dangerous if it remains undetected. Children and the elderly with Type 1 diabetes are especially prone to sudden drops in blood sugar.

The three-year grant will fund research to:

- Identify the signature odorants that are



Researchers in the Integrated Nanosystems Development Institute Lab are developing nanosensors to identify the signature

produced in human breath by specific volatile organic compounds created by the metabolic processes that lead to hypoglycemia, or low blood sugar.

breath odorants that are produced in human breath by specific volatile organic compounds that are created by the metabolic processes that lead to hypoglycemia.

- Develop a nanosensor array to detect those odorants.
- Incorporate the nanosensor array into a portable smart device that transmits health information to the diabetic, caregivers and family members.

“Researchers will identify the signature odorants, which are unknown to the medical community, using breath samples collected from patients,” said Mangilal Agarwal, a co-principal investigator. Agarwal directs the Integrated Nanosystems Development Institute and is associate director of research development in the Office of the Vice Chancellor for Research.

The odorants will be verified with diabetes alert dogs that recognize the onset of hypoglycemia from those odorants. Patients would blow into the small device, and its sensor system would then communicate the patient’s hypoglycemic status along with tracking information that provides a historical summary.

The research is expected to improve health-monitoring options for people with diabetes, decrease health care costs, and improve lifestyles for diabetics.

The grant is part of an effort by the federal government to accelerate the development and use of innovative approaches that would support the transformation of health care from reactive and hospital-centered to preventive, proactive, evidence-based, and person-centered focused on well-being rather than disease.

The project will provide interdisciplinary research experiences to graduate and undergraduate students. In addition, this project will support participation of underrepresented groups and educational outreach programs for K-12 students and teachers across Indiana and the U.S.

“This research is particularly well-suited to an institution like IUPUI, with its focus on health and life sciences, and its ability to marshal experts from across disciplines, including engineering, science, medicine and informatics and computing,” Agarwal said.

Other investigators are Anthony Faiola, an associate professor in the School of Informatics and Computing; Peter Roach, director of the Center for Diabetes Research, School of Medicine; Sudhir Shrestha, an assistant research professor in the School of Engineering and Technology; Amanda Siegel, postdoctoral research associate in the School of Science; and Dana Hardin, a pediatric endocrinologist at Peyton Manning Children's Hospital at St. Vincent.

FACULTY SPOTLIGHT

Herron professor receives \$100,000 fellowship for art-based community health project

Herron School of Art and Design associate professor Greg Hull is the recipient of one of the first two Transformational Impact Fellowships awarded by the Arts Council of Indianapolis.

Under the Transformational Impact Fellowship Pilot Program, launched this year, Hull and fellow recipient Bryan Fonseca, producing director and founder of the Phoenix Theater, each will receive \$100,000, two-year fellowships to work in creative, artistic community partnerships that will have a



Herron Dean Valerie Eickmeier (left) and Transformational Impact Fellow Greg Hull

positive impact on Marion County.

Artists were invited to submit proposals for fellowship projects in March for the new program funded by Lily Endowment Inc. Winners were announced at the September 4th Arts Council's annual Start With Art luncheon.

Hull teaches Sculpture at Herron. His fellowship proposal involves a collaboration with the art therapy program at Herron and the work of Dr. Robert Pascuzzi of the IU School of Medicine's Department of Neurology. The plan is to create an interactive art project that will help patients with neurological disorders that limit mobility, such as ALS and Parkinson's, "to create and connect outside themselves," Hull said.



Transformational Impact Fellow and Herron Associate Professor Greg Hull at work during IUPUI student art installation

The new Arts Council fellowship program is part of an effort to more effectively engage professional artists in civic and community development projects to benefit citizens.

Often, with community development and city and civic projects, artists are brought in toward the end of the project and asked to do something "really amazing and creative to this project that we have already done," said Shannon Linker of the Arts Council.

"Ideally they would be at the table from the beginning. What we are doing is we are giving them the opportunity through this fellowship to create the idea and bring together a team ... to really create something that can transform a neighborhood, a place, a group of people, a street in Marion County," Linker said in a February WISH-TV interview announcing the program.

Hull is known for his creation of public art, including the kinetic sculpture installed in the atrium of the Indianapolis International Airport. That work, titled "[Breathe.](#)" consists of 11 red, hollow forms suspended at various levels. When operating, the forms seem to inflate and deflate, changing shape from long to elliptical to round and back again, each set on a different timing mechanism. The effect is that of a set of organic, "breathing" sculptures.

Hull came to Herron as a visiting assistant professor in 1999. He holds a bachelor's degree in fine arts from the Kansas City Art Institute and a master's degree in fine arts from the University of Delaware.

STUDENT SPOTLIGHT

Six IUPUI project teams selected for ITEC's 2015-2016 session

Six project teams selected by this year's Innovation-to-Enterprise Commercialization (ITEC) program presented their initial

project proposals on September 18th to an audience of business professionals and IUPUI faculty for the program's official project launch.

The ITEC projects provide opportunities for students to become involved in the "innovation to enterprise" process beyond what they would typically encounter in existing academic coursework or other campus activities.

IUPUI students are chosen to participate in the business development research project through a competitive process as ITEC Scholars. The program begins with team selection and acceptance of project proposals for the first semester of the academic year. Teams are formed for either faculty-led projects or for projects proposed by one or more of the student team members.

Each team will work through the upcoming academic year to further develop and optimize a product, venture, or business concept. IUPUI faculty work with the student teams either to advance commercial development of their own projects or as advisors to the students who have proposed their own ideas.

"I am extremely excited to be a part of IUPUI's ITEC initiative," said Textron Aviation Quality Assurance Manager Eric Hubbard, one of the local volunteer business professionals working with faculty to mentor students in the program, "The students participating in this 'experience' are receiving critical business tactical skills that can only be learned through practical interaction with seasoned professionals; I truly believe that this program will place the students light years ahead of their peers when they graduate and enter the real world."

This year's project teams are:

ADRIT Software

Team members Itika Arora and Enming Zhang, from the IU School of Informatics and Computing, with Neha Singhal, of the IU School of Liberal Arts are collaborating with Professor Jake Chen of the IU School of Informatics and Computing. Together with a local startup MedeoLinx they will support commercial development of a software platform, ADRIT (Approved Drug Recommender for Individualized Treatment). The project combines genomics and biopharmaceutical informatics database development to provide both patients and physicians with the ability to compare and assess the potential benefits of different drug therapies based on the individual's existing therapies and conditions.



Engineering student William Pearson introduces the need for his product, a motorcycle storage facility.



ITEC Volunteer and Quality Assurance Manager at Textron Aviation Eric Hubbard discusses Professor Jake Chen's proposal after the project launch.

About MedeoLinx: <http://www.medeolinx.com/about-medeolinx.html> Mobile Application for the Mathematics Assistance Center (MAC) at IUPUI

Professors Kevin Berkopes of the Purdue School of Science, Zebulun Wood of the IU School of Informatics & Computing, and Brad McKinney of the IU Herron School of Art and Design are leading a student team to develop a database-driven, customizable mobile app for both faculty and students to improve the Math Assistance Center experience and contribute to the growing importance of learning assistance centers as places to facilitate peer-to-peer interaction and enhance learning outside of the classroom. Members of the student team Luke Brown, Patrick

Burton, Levi Hadley, and Kelly Nauert will be involved in the design and programming of the mobile application.

Electric Snowmobile

Michael Golub of the Purdue School of Engineering and Technology with his student team seek to design, build, and test a light-weight, electric snowmobile with the goal of bringing it to the marketplace to sell to customers. The idea builds on the current IUPUI electric snowmobile project that entered in the 2015 SAE Clean Snowmobile Challenge (CSC) earlier this year. Student team members include Dileep Balaji, Guiming Chen, Yu-Ren Chen, and Brandon Watson from the Purdue School of Engineering and Technology and Wenying Zhao from the IU Kelley School of Business.

SafeBay™

Led by Purdue School of Engineering and Technology students Edward Kello, William Pearson, and James Rutan, the SafeBay team has developed a product concept to provide a secure and effective means for motorcycle storage. The proposed product is a steel enclosure ideal for public and personal use in urban areas. The idea is in response to the lack of motorcycle parking in Indianapolis-area parking garages.

Medication Adherence System

IU School of Informatics and Computing student Harry Tunnell will be working with Ibrahim Momoh, a student from the Purdue School of Engineering and Technology. They are working to develop and integrate Internet-based systems and smart technologies with a smart phone app to create a system to help patients improve their medication taking behavior by detecting changes in medication taking environments.



Human Computer Interaction student Harry Tunnell discusses ways to improve medication adherence.

Wireless Gun Safety

Team members Abigail Parham of the IU School of Public and Environmental Affairs and Hunter Tobe of Purdue School of Engineering and Technology will be working with Ross Brenner, a student in the IU School of Dentistry, on his product concept for a wireless system for gun safety. This team is developing a device to detect when a firearm has been moved from its resting place by someone other than the owner. The device would coordinate with a smart phone app to provide an immediate notification to the owner with the goal of preventing gun theft and misuse.

"I'm enthusiastic about the ITEC program, the community participation, and the leadership evident here at IUPUI," said Kevin Berkopes, one of the faculty members leading an ITEC project, "I think we have real momentum to embed the entrepreneurial spirit into the undergraduate experience to better prepare our young people and also provide an avenue for innovation towards solving the complex problems of our changing world."

ITEC is sponsored by the Office of the Vice Chancellor for Research as an experiential learning program affiliated with the Center for Research and Learning at IUPUI.

For more information on the ITEC program, or how to get involved in future ITEC programs, please visit <http://crl.iupui.edu/programs/I2E/>.

TRANSLATIONAL RESEARCH IMPACT

November 4, 2015: IUPUI Translating Research Into Practice (TRIP) Community Showcase featuring the 2015 Bantz-Petronio TRIP Faculty Award recipient Susan Hickman

Beginning at 5 PM in the IUPUI Campus Center Multi Purpose Room on the 4th floor, several of IUPUI'S distinguished faculty scholars present their translational research and illustrate how they improve people's lives at the IUPUI TRIP Community Showcase. From health care to information technology, forensic sciences to tourism marketing, and Indiana to the world, these faculty members have translated their research into viable practices that improve our communities. Susan Hickman, the 2015 Bantz-Petronio TRIP Faculty Award Recipient will present "Decisions That Matter: Using Evidence-Based Strategies to Improve Advance Care Planning" highlighting her translational research.

[RSVP](http://trip.iupui.edu/Events/Showcase) for this no cost event at <http://trip.iupui.edu/Events/Showcase>.

Other IUPUI faculty showcasing their translational research include:

Your Life. Your Story: Latino Youth Summit

Sylvia Bigatti

Fairbanks School of Public Health

The Joint Dynamics Between Automotive Events and Car Enthusiasts' Brand Communities

Yao-Yi Fu

School of Physical Education and Tourism Management

Using mobile technology for psychosocial interventions

Sara Konrath

Lilly Family School of Philanthropy

Starting from Scratch: Building Community Support for Labor Organizing

Tom Marvin

School of Liberal Arts

Facilitating People-Centered Design Research and Community Engagement

Pamela Napier

Herron School of Art & Design

What's the Difference Between OT and PT?

Sharon Pape

Health and Rehabilitation Science

Translating patient experiences into patient education: Impact of the liver transplantation process on everyday lives

Patricia Scott

Health and Rehabilitation Science

IUSM Orthopaedic Surgery partners with NASA and Department of Defense

The IU School of Medicine Department of Orthopaedic Surgery, NASA, and the U.S. Department of Defense are partnering to study bone regeneration and to make new discoveries in bone regeneration for



2015 Bantz-Petronio TRIP Faculty Award recipient Susan Hickman

osteoporosis, bone healing for fractures, and bone disorders.

This project is under the leadership of Melissa Kacena, Ph.D., associate professor of orthopaedic surgery, August M. Watanabe Translational Scholar and Showalter Scholar. Todd McKinley, M.D., professor of orthopaedic surgery, Tien-Min Gabriel Chu, D.D.S., Ph.D., associate professor of restorative dentistry and orthopaedic surgery and interim associate dean for research at the IU School of Dentistry, and their research teams complete the IU collaborators for the project, Bone Healing in Space.



Dr. Melissa Kacena and her lab team performing their pilot study before they left for NASA Ames in California for their ground study on August 17.

The mission will launch on February 3 from Cape Canaveral, FL., and travel to the International Space Station via the SpaceX Falcon spacecraft. IUSM orthopaedic researchers will manage the research project from Kennedy Space Center while working with astronauts aboard the space station to perform the laboratory work.

To learn more about these missions and the positive impacts they could have, visit the [research website](#) and subscribe to the [blog](#). Donations to support this mission can also be made at this blog site.

OVCR INTERNAL GRANT DEADLINES

International Research Development Fund (IRDF) GRANT:

The IRDF grant was developed to enhance the international research and scholarly activity focus of the IUPUI academic mission. Generally, the IRDF grant serves as venture capital to stimulate additional funding for international research and scholarly activity, which has strong potential to generate indirect cost recovery from extramural sources. The next IRDF application deadline is **November 15**. For grant guidelines and application forms, go to <http://research.iupui.edu/funding/>.

OVCR Events and Workshops

Nine Golden Rules to Succeed in Research and Scholarship

Target Audience: Faculty

When: Friday, October 23, 2015 | 11:00am - 1:00pm

Where: University Library, Room 1116

This session will reveal the Nine Golden Rules on how to succeed in research and scholarship. It is focused toward new and early career investigators; however, mid-career faculty should find information of interest as well.

Register: <https://crm.iu.edu/CRMEvents/NineGoldenRules102315/>

IUPUI Nanotechnology Research Forum and Poster Symposium

When: Friday, October 23, 2015 | 1:00pm - 5:00pm

Where: University Library, Lilly Auditorium

This symposium brings together investigators from diverse scientific disciplines with

nanotechnology expertise to present and explore potential collaborative research opportunities.

More information and registration coming soon.

IUPUI Innovation Forum and Showcase - Alternatives for Funding New Ventures

Target Audience: Faculty

When: Wednesday, November 4, 2015 | 1:00pm - 4:00pm

Where: Campus Center Theater

The Office of the Vice Chancellor for Research and the Indiana University Research & Technology Corporation (IURTC) co-sponsors the IUPUI Innovation Forum and Showcase.

More information and registration coming soon.

Register: <https://crm.iu.edu/CRMEvents/OVCRORIENTATION082615/>

OTHER EVENTS AND WORKSHOPS

Understanding and Responding to Wrongdoing in Research

When: Friday, November 6, 2015 | 8:00am - 10:00am

Where: Goodman Hall Auditorium

In this presentation that is hosted by the Research Integrity Office (RIO), Dr. James DuBois will explore the concepts of wrongdoing and noncompliance in research. He will share data on good professional decision-making in research gathered through testing of 700 NIH-funded researchers. He will also draw from his experience working with investigators referred from 26 institutions to the Professionalism and Integrity in Research Program (PI Program), which was designed to help researchers operate professionally in today's complex regulatory environments. Finally, he will present evidence-based decision-making strategies. These strategies assist researchers in doing good work with integrity, and in dealing with cases in which they observe wrongdoing among colleagues.

Dr. James DuBois is the Steven J Bander Professor of Medical Ethics and Professionalism and Director of the Center for Clinical Research Ethics at Washington University School of Medicine in the Division of General Medical Sciences. DuBois completed his PhD in philosophy at the International Academy of Philosophy in Liechtenstein and his DSc in psychology at the University of Vienna in Austria, where he focused on cross-cultural moral psychology. He directs the NIH-funded Professionalism and Integrity in Research Program (PI Program), which offers personalized assessments, a group workshop, and post-workshop coaching calls to help researchers operate professionally in today's complex environments. He is the founding Editor (with Ana Iltis) of *Narrative Inquiry in Bioethics: A Journal of Qualitative Research*, published by Johns Hopkins University Press. His research interests include: research ethics in mental health, understanding and preventing ethical lapses in healthcare and research, ethics in organ transplantation, and empirical research on ethical issues. He has received more than \$4 million in funding from the National Institutes of Health, the Office of Research Integrity and foundations to support his research and training projects. DuBois serves on a National Institute of Drug Abuse Data Safety Monitoring Board, the American Psychological Association's Committee on Human Research, and is a member of the NIH study section on Social and Ethical Issues in Research. He served for 10 years on university and hospital institutional review boards (IRBs). He has received several awards for his activities as an author, editor, and educator, including the following.

- 2014 Professionalism Article Prize from the American Board of Internal Medicine

- Foundation for a publication in the journal Academic Medicine.
- 2013 Health Improvement Institute's Annual Innovation Award for Human Research Protections (for P.I. Program).
 - 2010 Society of Research Administrator's International Rose Award for best publication.

Registration is encouraged but not required,

http://researchcompliance.iu.edu/eo/eo_sessions.html (filter "Area" by **Research Integrity**). For more information, please contact the Research Integrity Office (RIO) at rio@iu.edu.

Finding Data for Your Research Project

When and Where: November 4, 2015, 1:30 pm -2:30 pm, UL 2120

Instructor: [Heather Coates, hcoates@iupui.edu](mailto:hcoates@iupui.edu)

Registration: <https://ulib.iupui.edu/node/7828>

This workshop will introduce you to tips and tricks for finding and getting data to use for your research. Along the way, we will talk about how to deal with common problems and show you how to cite the data you use. This workshop is appropriate for students, staff, and faculty.

Making Science Make Sense: Adapting Complex Topics for Multiple Audiences

Tuesday, November 17, 2015

5:00 PM - 7:00 PM

Glick Eye Institute (GK) 103

Scientists and physicians today are required to connect to and tailor their communication for a variety of audiences. Whether speaking to a patient, a journalist, or a funder, they must speak clearly and vividly about their work and why it matters, in terms non-scientists can understand.

This workshop borrows techniques from improvisational theater and communication studies to help participants speak more spontaneously, responsively, and directly. The workshop is not about acting, but about helping scientists and physicians to connect with and engage their audience. Participants will practice finding common ground with an audience, speaking at different levels of complexity for different audiences, and answering questions about their work.

Register: <http://faculty.medicine.iu.edu/registration/indexDirect.php?id=1697>

RECENT EXTERNAL FUNDING AWARDS

Grants and Awards – August 2015

PI	Agency	Project Title	School	Department	Total
Broxmeyer, Hal E	NATIONAL INSTITUTE OF DIABETES, DIGESTIVE & KIDNEY	Hematopoietic stem and progenitor cell regulation for enhanced clinical efficacy	MEDICINE	MICROBIOLOGY & IMMUNOLOGY	\$4,789,923
Kiovsy, Richard D	INDIANA STATE DEPARTMENT OF HEALTH	2016-2017 Area Health Education Centers Operating Support	MEDICINE	AREA HEALTH EDUCATION CENTERS	\$4,439,000

Counsell, Steven R.	HEALTH RESOURCES AND SERVICES ADMINISTRATION	Indiana Interprofessional Geriatrics Education and Training Center, or Indiana IGETC	MEDICINE	GENERAL INTERNAL MEDICINE	\$2,550,000
DiMeglio, Linda A	NATIONAL INSTITUTE OF DIABETES, DIGESTIVE & KIDNEY	Type 1 Diabetes TrialNet at Indiana University Clinical Center	MEDICINE	PED-ENDOCRINOLOGY/DIABETOLOGY	\$1,690,916
Pelus, Louis M	NATIONAL HEART, LUNG AND BLOOD INSTITUTE	Role of PGE2 and other eicosanoids in hematopoietic stem cell function	MEDICINE	MICROBIOLOGY & IMMUNOLOGY	\$1,564,895
Browning, Barbara	U.S. DEPARTMENT OF EDUCATION	TRIO Student Support Services Program	UNDERGRAD ED	UNIVERSITY COLLEGE	\$1,358,075
Stornio, Anna Maria V	SUSAN G. KOMEN BREAST CANCER FOUNDATION	Collection and Storage of Biological Specimens Intended for use in the Elucidation of Breast Carcinogenesis	MEDICINE	CANCER CENTER	\$1,100,000
Varahramyan, Kody	NATIONAL SCIENCE FOUNDATION	Canine-Inspired Smart Sensor for Detecting Hypoglycemia from Human Breath	ACADEMIC	VICE CHANCELLOR FOR RESEARCH	\$738,311
Miller, Kathy D.	THE BREAST CANCER RESEARCH FOUNDATION	Inhibiting fatty acid synthase to improve efficacy of neoadjuvant chemotherapy	MEDICINE	HEMATOLOGY/ONCOLOGY	\$250,000
Stornio, Anna Maria V	THE BREAST CANCER RESEARCH FOUNDATION	Molecular profiles of breast tissue from women at high risk of breast cancer	MEDICINE	HEMATOLOGY/ONCOLOGY	\$249,725
O'Neil, Kathleen M.	DUKE UNIVERSITY	Observational Study of Pediatric Rheumatic Diseases: The CARRA Registry	MEDICINE	PED-RHEUMATOLOGY	\$185,250
Howenstine, Michelle S	CYSTIC FIBROSIS FOUNDATION	IN-182/182 - Riley Hospital for Children Indiana University Medical Center (Howenstine, Michelle)	MEDICINE	PED-PULM CRITICAL CARE/ALLERGY	\$172,400
Tian, Renran	DELPHI	Performance Evaluation of Advanced Driver State Sensor	E&T	ELECTRICAL & COMPUTER ENGR	\$169,774
Palakal, Mathew J.	JPMORGAN CHASE FOUNDATION	The Informatics Diversity-Enhanced Workforce (iDEW) Initiative Engaging Local High School Women & Minorities in progress towards earning 2-4 year college degrees	INFORMATICS	HUMAN-CENTERED COMPUTING	\$150,000
Palmer, Jamie L.	INDIANA SOYBEAN ALLIANCE	Agriculture, Road Conditions, and Road Funding: Making the Case	SPEA	PUBLIC & ENVIRONMENTAL AFFAIRS	\$138,000
Tovar, Andres	HONDA	Topology Crash Optimization of Progressively Buckling Thin-walled Structures using Tubular Compliant Mechanisms - Improved conceptual design using a target	E&T	MECHANICAL ENGINEERING	\$120,336
Androphy, Elliot J	BRIGHAM AND WOMEN'S HOSPITAL	Optimization of a novel series of thiazolopyridines for the treatment of SMA	MEDICINE	DERMATOLOGY	\$109,200
Vik, Terry A	ALEXS LEMONADE STAND FOUNDATION	DNA sequencing using malaria slides to detect leukemia	MEDICINE	PED-HEMATOLOGY/ONCOLOGY	\$100,000

Grants and Awards – September 2015

PI	Agency	Project Title	School	Department	Total
Clapp, D Wade	NATIONAL CANCER INSTITUTE	Developmental and HyperActive Ras Tumor SPORE	MEDICINE	PED-CHAIRMAN'S OFFICE GENERAL	\$10,876,403
Foroud, Tatiana M	NATIONAL INSTITUTE NEUROLOGICAL DISORDERS & STROKE	NINDS Biomarker Repository	MEDICINE	MEDICAL & MOLECULAR GENETICS	\$7,146,304
Badve, Sunil	NATIONAL CANCER INSTITUTE	(PQC3) Ethnicity-determined immune response and DCIS outcome	MEDICINE	PATHOLOGY AND LABORATORY MED	\$2,741,258
Tepper, Robert S.	NATIONAL HEART, LUNG AND BLOOD INSTITUTE	Anti-Angiogenic Preeclampsic Milieu Impairs Infant Lung and Vascular	MEDICINE	PED-PULMONARY BASIC RESEARCH	\$2,608,246

		Development			
Hickman, Susan E	NATIONAL INSTITUTE OF NURSING RESEARCH	The Quality of POLST Decisions in the Nursing Facility Setting	NURSING	NURSING	\$2,267,101
Grant, Maria Bartolomeo	NATIONAL EYE INSTITUTE	LXR as a novel therapeutic target in diabetic retinopathy	MEDICINE	OPHTHALMOLOGY	\$2,184,870
Harezlak, Jaroslaw	NATIONAL INSTITUTE OF MENTAL HEALTH	Statistical models for multi-modal brain imaging studies of HIV-associated cognitive decline	PUBLIC HEALTH	BIostatISTICS - PUBLIC HEALTH	\$2,012,951
Agho, Austin O	HEALTH RESOURCES AND SERVICES ADMINISTRATION	Indiana University Health Careers Opportunity Program	HEALTH/REHABILITATION SCIENCES	HEALTH/REHABILITATION SCIENCES	\$1,941,099
Sheets, Patrick L	NATIONAL INSTITUTE NEUROLOGICAL DISORDERS & STROKE	Prefrontal Circuitry and Pain	MEDICINE	IUSM-SOUTH BEND	\$1,687,362
Sankar, Uma	NATIONAL INSTITUTE ARTHRITIS MUSCULOSKELETAL SKIN	CaMKK2 Inhibition as a Dual-Action Bone Anabolic and Anti-Catabolic Therapy in Osteoporosis	MEDICINE	ANATOMY & CELL BIOLOGY	\$1,686,430
Sun, Jie	NATIONAL INSTITUTE ON AGING	Simultaneously boosting both humoral and cellular immunity following vaccination	MEDICINE	PED-PULMONARY BASIC RESEARCH	\$1,607,968
Lahiri, Debomoy K.	NATIONAL INSTITUTE ON AGING	Neurobiological role of MicroRNA in Alzheimer's	MEDICINE	PSYCHIATRY	\$1,607,422
Rodd, Zachary A.	NATIONAL INSTITUTE ON ALCOHOL ABUSE AND ALCOHOLISM	7/8 NADIA UO1 Adolescent Alcohol and Neurocircuitry Mediating Ethanol Reinforcement	MEDICINE	PSYCHIATRY	\$1,579,500
Takagi, Yuichiro	NATIONAL INSTITUTE OF GENERAL MEDICAL SCIENCES	Mechanism of transcription regulation by the Mediator	MEDICINE	BIOCHEMISTRY/MOLECULAR BIOLOGY	\$1,542,981
Pelus, Louis M	U.S. DEPARTMENT OF DEFENSE	Using the prostaglandin E2 signaling cascade to mitigate the effects of acute and delayed radiation exposure to hematopoiesis and blood stem cell function	MEDICINE	MICROBIOLOGY & IMMUNOLOGY	\$1,171,743
Orschell, Christie M	U.S. DEPARTMENT OF DEFENSE	Using the prostaglandin E2 signaling cascade to mitigate the effects of acute and delayed radiation exposure to hematopoiesis and blood stem cell function.	MEDICINE	HEMATOLOGY/ONCOLOGY	\$1,165,121
Mitra, Anirban Kumar	U.S. DEPARTMENT OF DEFENSE	Microenvironment regulated microRNAs promote ovarian cancer metastatic colonization	MEDICINE	MEDICAL SCIENCES PROGRAM	\$1,131,000
Orschell, Christie M	U.S. DEPARTMENT OF DEFENSE	Development of G1T28-1 to Mitigate Hematologic Sequelae of ARS and DEARE	MEDICINE	HEMATOLOGY/ONCOLOGY	\$848,249
Foroud, Tatiana M	MICHAEL J FOX FOUNDATION FOR PARKINSONS RESEARCH	Systemic Synuclein Sampling Study (S4)	MEDICINE	MEDICAL & MOLECULAR GENETICS	\$386,050
Bauer, Nerissa S	AGENCY FOR HEALTHCARE RESEARCH AND QUALITY	Improving Anxiety Detection in Pediatrics Using Health Information Technology	MEDICINE	PED-HEALTH SERVICES RESEARCH	\$298,960
Zellers,	THE BREAST CANCER	Phase II Trial of Partial Breast Cancer Irradiation and			

Richard C	RESEARCH FOUNDATION	Concurrent Chemotherapy (PBI 3.0) / Pre-operative PARPi and Irradiation (POPI)	MEDICINE	RADIATION ONCOLOGY	\$250,000
Chen, Jie	ORMCO	Development of an Orthodontic Device to Accelerate Tooth Movement Using Low-energy Light Irritation	E&T	MECHANICAL ENGINEERING	\$238,616
Coleman, Martin A	NATIONAL ENDOWMENT FOR THE HUMANITIES	The Works of George Santayana, 2015 - 2018	LIBERAL ARTS	LIBERAL ARTS	\$225,000
Silverman, Ross David	NATIONAL COLLEGIATE ATHLETIC ASSOCIATION	Mind Matters Challenge Administration and Evaluation	PUBLIC HEALTH	HEALTH POLICY & MANAGEMENT	\$199,563
Wiehe, Sarah Elizabeth	INDIANA STATE DEPARTMENT OF HEALTH	The Indiana Clinical and Translational Sciences Institute (CTSI) - Community Health Engagement Program (CHEP) Preventive Health and Health Services Block Grant	MEDICINE	CLINICAL TRANSLAT SCI(CTSI)	\$140,652
Litzelman, Debra K	INDIANA UNIVERSITY HEALTH	Institutionalizing Advance Care Planning in Key Communities Across Indiana	MEDICINE	GENERAL INTERNAL MEDICINE	\$138,654
Lock, Thomas M	INDIANA UNIVERSITY HEALTH	Program for Children with Special Healthcare Needs - Riley Hospital	MEDICINE	PED-CHAIRMAN'S OFFICE GENERAL	\$138,140
Sturek, Michael S	PURDUE UNIVERSITY	In vivo photoacoustic sensing of lipid laden plaque	MEDICINE	CELLULAR & INTEGRATIVE PHYSIO	\$120,799
Lutfi, Riad	INDIANA UNIVERSITY HEALTH	Implementation of a Pediatric Community Outreach Mobile Education (PCOME) Program.	MEDICINE	PED-PULMONARY INTENSIVE CARE	\$100,000
Bodenhamer, David J	GREATER INDIANAPOLIS PROGRESS COMMITTEE	IndyVitals Data Portal	LIBERAL ARTS	POLIS	\$100,000
Sharer, Beth	HERITAGE FUND	Growing the Capacity of the IUPUC Division of Nursing to Meet Community Needs.	COLUMBUS	IUPUC NURSING	\$100,000
Lacey, Steven E	INDIANA STATE DEPARTMENT OF HEALTH	Comprehensive Asthma Control Through Evidence-based Strategies and Public Health - Health Care Collaboration	PUBLIC HEALTH	ENVIRONMENTAL HEALTH SCIENCES	\$100,000

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.

AGENCY FOR HEALTHCARE RESEARCH AND QUALITY (AHRQ)

AHRQ Health Services Research Projects: making Health Care Safer in Ambulatory Care Settings and Long Term Care Facilities (R01): The purpose of this opportunity is to support investigative research projects that examine the epidemiology of patient safety in ambulatory care settings and long term care facilities, gather evidence about strategies that can improve safety in these settings,

and develop evidence-based tools to facilitate implementation of these strategies.
Deadline: February 5, 2016.

NATIONAL INSTITUTES OF HEALTH

Abuse Liability Associated With Reduced Nicotine Content Products (R01):

The purpose of this opportunity is to generate data to inform the FDA on ways to reduce the addictiveness and resulting public health toll from tobacco product use. Nicotine is the primary constituent responsible for the addictiveness of cigarettes, resulting in smokers' inability to quit and continued use. Research addressing nicotine and combusted tobacco product use behaviors (e.g., reinforcing effects, compensation, and amount used) and the dose-effects of nicotine will inform FDA regarding its tobacco regulatory authorities. Research projects must address the research priorities related to the regulatory authority of the Food and Drug Administration (FDA) Center for Tobacco Products (CTP) as mandated by the Family Smoking Prevention and Tobacco Control Act (FSPTCA), Public Law 111-31. The awards will be administered by the NIH using designated funds from the FDA CTP for tobacco regulatory science. *Deadlines: Letter of Intent: October 30, 2015; Proposal: Dec. 11, 2015.*

Chemistry, Toxicology, and Addiction Research on Waterpipe Tobacco (R01):

The purpose of this opportunity is to encourage biomedical, behavioral, and social science research that will inform the development and evaluation of possible regulatory action on waterpipe (or hookah) tobacco products. Research projects must address the research priorities related to the regulatory authority of the Food and Drug Administration (FDA) Center for Tobacco Products (CTP) as mandated by the Family Smoking Prevention and Tobacco Control Act (FSPTCA), Public Law 111-31. The awards under this FOA will be administered by the National Institutes of Health (NIH) using designated funds from the FDA CTP for tobacco regulatory science. Research results from this FOA are expected to generate findings and data that are directly relevant to inform the FDA's regulation of the manufacture, distribution, and marketing of waterpipes to protect public health. *Deadlines: Letter of Intent: October 13, 2015; Application: November 20, 2015.*

Imaging Diagnostics of Dental Diseases and Conditions (Caries, Periodontal Disease, Cracked Teeth, and Pulp Vitality) (R41/R42):

The intent of this STTR initiative reissue is to accelerate the advanced development and clinical implementation of reliable, reproducible, highly specific and sensitive imaging diagnostic devices for dental caries, periodontal disease, cracked teeth, and pulp vitality. These new devices must demonstrate superior specificity and sensitivity compared with current diagnostic methods, such as the visual/tactile/radiographic examination for detection of caries, while not increasing health risks for patients. Approaches that could be explored include, but are not limited to: optical coherence tomography (OCT) with or without Raman spectroscopy, MRI image analysis, electrical conductivity measurement (ECM), quantitative laser fluorescence (QLF), alternating current impedance spectroscopy, multi-photon imaging, infrared thermography, infrared fluorescence (IR), ultrasound, and terahertz imaging. The development of novel modalities is also encouraged. *Deadline: Application: January 5, 2016.*

NATIONAL SCIENCE FOUNDATION

Advanced Informal STEM Learning (AISL): The AISL program seeks to advance new approaches to and evidence-based understanding of the design and development of STEM learning opportunities for the public in informal environments; provide multiple pathways for broadening access to and engagement in STEM

learning experiences; and advance innovative research on and assessment of STEM learning in informal environments. The program supports: 1) Collaborative Planning, 2) Exploratory Pathways, 3) Research in Service to Practice, 4) Innovations in Development, 5) Broad Implementation, 6) Conferences, and 7) Informal STEM Learning Resource Center (FY 2016 only). *Deadline: Nov. 4, 2015.*

Ecology and Evolution of Infectious Diseases (EEID): A critical goal of research supported by this program is the generation of principles and conceptual frameworks that organize and inform the research and that lead to mathematical, computational, and statistical models of infectious disease dynamics. Diverse modeling approaches are appropriate, including, but not limited to, mathematical equations, computational simulations, geospatial algorithms, and statistical models. For the EEID program, the most competitive proposals are organized around an overarching conceptual framework that leads to such a model. Models should aim to be explanatory beyond the specific system under study and must be well-characterized and rigorously tested. Proposals must describe how models will be developed, evaluated, and disseminated. Proposals must identify which individual(s) will oversee the quantitative approaches and provide evidence of demonstrated expertise in mathematical, computational, or statistical modeling and/or data analysis. Likewise, strategies for data collection must be well designed to contribute to and test model design. Proposals must include plans for dissemination of data, models, and tools developed by this program. *Deadline: November 18, 2015.*

Exploring Parallelism and Scalability (XPS): This program seeks transformative proposals on new and visionary approaches to re-evaluate and possibly re-design the traditional computer hardware and software stack for today's heterogeneous parallel, concurrent, and distributed systems, and should explore new holistic approaches to parallelism and cross-layer design. New approaches should encompass both software and hardware to achieve scalable performance and usability through new abstract models and algorithms, programming models and languages, data models and declarative query languages, hardware architectures, compilers and runtime systems. Research may focus on scalable performance, energy efficiency and communication efficiency, and/or on enabling the division of effort between edge devices and clouds. Programmability and reliability are both of primary importance to the program.

Proposals should address problems related to one of the four focus areas: (1) foundational principles, (2) cross-layer and crosscutting approaches, (3) scalable distributed architectures, and (4) domain-specific design. Each proposal must identify the most relevant focus area. *Deadline: January 27, 2016.*

U.S. DEPARTMENT OF DEFENSE (DOD)

Neurosensory & Rehabilitation Research Award: The goal of the Defense Medical Research and Development Program, or DMRDP, is to advance the state of medical science in those areas of most pressing need and relevance to today's battlefield experience. The objectives of the DMRDP are to discover and explore innovative approaches to protect, support, and advance the health and welfare of military personnel, families, communities, and the general public; to accelerate the transition of medical technologies into deployed products; and to accelerate the translation of advances in knowledge into new standards of care for injury prevention, treatment of casualties, rehabilitation, and training systems that can be applied in theater or in the clinical facilities of the Military Health System. Applications from investigators within the military services are highly encouraged, as are applications involving multidisciplinary collaborations among academia, industry, the military services, and the Department of Veterans Affairs (VA). *Deadlines: Pre-Application: December 10, 2015; Application: February 11, 2016.*

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. 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.

U.S. DEPARTMENT OF ENERGY (DOE)

Research on Innovative Approaches to Fusion Energy Sciences: The Office of Fusion Energy Sciences (FES) is interested in receiving applications for research on innovative approaches to fusion energy on the spherical tokamak, advanced tokamak, and stellarator concepts. Such research on small to medium scale facilities can explore specific aspects of these concepts, thereby enhancing the understanding of magnetically confined plasmas. By broadening the scientific approach, this research can also help to grow and validate fusion science over a wider range of plasma conditions and enhance the opportunity for scientific discovery in toroidal confinement. Support of research that can help to deepen the scientific understanding and improve the tokamak or stellarator concept is an important focus area of this opportunity. Key issues include, but are not limited to: 1) Investigating stellarator configurations with the goal of simplifying and making maintainable magnet systems and extending confinement parameters.; 2) Improving the understanding of 3-D shaping in an integrated manner in plasmas with higher levels of performance; 3) Applying 3-D analysis and design approaches to ELM suppression on existing tokamaks and ITER, 4) Improving the understanding of anomalous electron transport in spherical tokamaks; 5) Resolving disruption avoidance and mitigation to permit reliable, continuous operation in spherical or advanced tokamaks; and 6) Developing approaches that will address plasma materials interaction issues faced by tokamak and/or stellarator concepts. *Deadlines: Pre-Application: June 29, 2016; Application: August 3, 2016.*

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. 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 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. 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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