

Research Enterprise

December 16, 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.

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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.

HOLIDAY GREETINGS FROM THE OFFICE OF THE VICE CHANCELLOR FOR RESEARCH



We wish you a joyful holiday season with relaxing time to enjoy family and friends, as well as an opportunity to celebrate the many positive research and scholarly accomplishments of 2015. The OVCR staff looks forward to working with you all on the exciting possibilities of 2016!

FEATURE STORY

Changes in brain associated with peripheral nerve issues caused by cancer therapy

Researchers at Indiana University School of

Medicine have identified physiological changes in the brain that appear to be associated with peripheral nerve-related symptoms caused by chemotherapy.

In research newly reported in the *Journal of Clinical Oncology*, scientists used magnetic resonance imaging to study changes in brain blood flow and density of gray matter in breast cancer patients receiving chemotherapy, comparing them to participants not undergoing chemotherapy. The study is believed to be the first to identify structural and functional changes in the brain associated with peripheral neuropathy caused by chemotherapy to treat breast cancer.



IU Neuroscience Research Building

Chemotherapy-induced peripheral neuropathy is a common side effect of chemotherapy treatments. Patients can experience a broad range of symptoms, including numbness, tingling, pain, muscle weakness, balance problems, and difficulty walking.

The study found that chemotherapy-induced peripheral neuropathy was associated with increased blood flow in areas of the brain that are associated with processing of pain sensations. Both peripheral neuropathy and associated blood flow were associated with gray matter density change, such that individuals with lower gray matter density showed lower blood flow and reported fewer symptoms of peripheral neuropathy.

"Most studies to date have focused on either cognitive or peripheral nerve changes after cancer treatment without examining the possible relationship of both to underlying brain mechanisms," said Andrew Saykin, Psy.D., director of the IU Center for Neuroimaging and Raymond C. Beeler Professor of Radiology. "This analysis connected all of these issues suggesting the need for a more comprehensive approach to neural changes in cancer patients."

Additional studies are needed, including work that would incorporate objective measures of peripheral neuropathy symptoms, but the changes in brain structure and blood flow identified in this study could result in decreased patient perception and reporting of peripheral neuropathy symptoms.

"It is possible that individuals experiencing cognitive changes as a result of chemotherapy may be under-reporting chemotherapy-induced peripheral neuropathy symptoms, which could impact diagnosis and treatment, as well as function in everyday life," said Kelly N.H. Nudelman, Ph.D., post-doctoral fellow in radiology and imaging sciences at the IU School of Medicine.

In addition to Dr. Nudelman, first author, and Dr. Saykin, researchers contributing to this study were Brenna C. McDonald, Dori J. Smith, John D. West, Darren P. O'Neill and Bryan P. Schneider of the IU School of Medicine, Noah R. Zanzville and Victoria L. Champion of the IU School of Nursing, and Yang Wang of the Medical College of Wisconsin.

The research was supported by grants from the National Cancer Institute (R01 CA101318, R01 CA082709, and R25 CA117865), the National Institute on Aging (R01 AG19771 and P30 AG10133), and the Eunice Kennedy Shriver National Institute of Child Health and Human Development (U54 HD062484) of the National Institutes of Health; the Indiana Clinical and Translational Sciences Institute (UL1 RR025761, RR027710-01, and RR020128) and an Indiana University Melvin and Bren Simon Cancer Center American Cancer Society institutional grant.

ANNOUNCEMENTS

IU Collaborative Research Grants program: Informational Sessions, January 8th, 2016

The 2015-16 IU Collaborative Research Grants (IUCRG) program Request for Proposals is now available on-line (http://research.iu.edu/funding_collaborative.shtml). The IUCRG program is designed to foster new collaborations among faculty members working on research that will significantly advance a field or break new ground in the sciences, social sciences, and behavioral sciences.

Over the past five years, we have awarded just over \$5 million to 65 teams composed of 222 IU faculty members. Teams of researchers from different disciplines, departments, schools or campuses who have not previously worked together in the proposal's subject matter are eligible to submit proposals, which are due on Monday, February 15th, 2016.

Two information workshops will be held on Friday, January 8th. Please attend learn more about the program and to garner some advice for writing a successful proposal.

The sessions will be held as follows:

10:30 – 11:30 am, University Library, Room 1126

2:00 – 3:00 pm, IUSM Research 2, Room E101

950 West Walnut Street
(adjacent to Walther Hall)

2016 IUPUI Research Day

Mark your calendars! **Registration** now open.

SAVE THE DATE
IUPUI RESEARCH DAY


OFFICE OF THE
VICE CHANCELLOR
FOR RESEARCH
ADVANCE RESEARCH. PLANNED COLLABORATION.

FOR ALL WHO CREATE, INNOVATE, AND EXPLORE



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

CENTER SPOTLIGHT

IUSM work in Kenya provides hope and care for people with HIV

The IU School of Medicine's partnership with Moi University in Kenya is responsible for a restoration of hope in many African children living with HIV/AIDS through the medical research, advanced on-site healthcare, fundraising and patient support it provides.

Established in 1989 to deliver health services

and train medical providers in Africa, this global partnership led to the development of [AMPATH](#) (the Academic Model for the Prevention and Treatment of HIV/AIDS) in 2001 to place specific attention and resources on the devastating pandemic of HIV/AIDS. AMPATH now includes participation by many other U.S.-based academic health organizations.



IUSM's Dr. Vreeman is helping to build awareness of treatment and prevention of HIV/AIDS, while providing medical and emotional support to patients.
| Photo By IU School of Medicine

As the 15th anniversary of AMPATH approaches and World AIDS Month progresses, the opportunity to celebrate the important work and research that's happening to prevent and treat this disease can't be missed.

At the center of this work is [Rachel Vreeman, M.D.](#), Associate Professor for Pediatrics at IU School of Medicine and Director of Research at IU Center for Global Health. In addition, as the North American Director of Research for AMPATH, Dr. Vreeman focuses on building awareness of important treatments and prevention strategies for HIV/AIDS, helping patients in need of medical and emotional support, and honoring those who have passed from the disease.

Dr. Vreeman spends six months of the year in Kenya working in clinics that IU School of Medicine, Moi University and AMPATH created, focusing on the challenges of providing long-term care for HIV-infected children in low-income communities. There are 25 clinics in Kenya through the IUSM-AMPATH partnership that provide critical care to more than 25,000 children with HIV along with 125,000 adults

"More than 3 million kids in sub-Saharan Africa are living with HIV, and we want to help them have the chance to grow up and change the world," said Dr. Vreeman. "I love partnering with our Kenyan colleagues to make sure that so many HIV-infected children can have a future. I love working on the challenge that IUSM has taken on to change global health."

Dr. Vreeman's commitment to this situation is truly life-saving. In many parts of the world, including the United States, people living with HIV/AIDS still face enormous stigma and discrimination. Families affected by this disease often struggle against this discrimination as well as the economic burden that the disease can create.

"The families we care for in Kenya report that they are discriminated against and isolated within their communities," said Dr. Vreeman. "Neighbors don't want to let their children play with or share food with HIV-infected children. If someone is known to have HIV, other people may stop coming to your business or they move away from you on the public bus. You will hear people saying things such as, 'People with HIV are just going to die,' or 'only immoral people get HIV.'"

To help HIV-infected children in Kenya receive emotional support and counseling to combat this discrimination and cope with their diagnosis, Dr. Vreeman is making a unique effort to raise money through a fashion-oriented initiative. Dr. Vreeman calls her fundraiser [The Pocket Square Project](#), in which pocket squares are handmade in Kenya from colorful, traditional African kitenge cloth.

All proceeds from pocket-square sales directly benefit support services for HIV-infected children in the AMPATH program. "[Support groups] help Kenyan children understand that HIV is just one part of the beautiful story of who they are and who they will become," said Dr. Vreeman. "They change children's lives by offering safe places to talk, build friendships, and learn to cope with their illness."

Visit the [AMPATH](#) website for more information about the work of this global partnership. For details about IU School of Medicine's other global health partnerships and training opportunities, visit [IU Center of Global Health](#).

To support AMPATH and the IU School of Medicine's work in Kenya, [click here](#). Pull the drop down window to "IU-Kenya Operating Fund."

FACULTY SPOTLIGHT

Striving for a Strong Legacy in Bone Healing

The research of associate professor of biology Dr. Jiliang Li has dual pre-clinical foci: namely osteoporosis, with 1) a view to drug development, and 2) documentation of how exercise strengthens bone. Enhanced fracture repair and bone regeneration comprise his investigative research and development. Li partners with Dr. Mervin C. Yoder, Jr., Director of the Herman B. Wells Center for Pediatric Research, who utilizes stem cells for bone regeneration.

Originating from Shenyang, China, Li earned his M.D. in Beijing and his Ph.D. in biomedical engineering from Kagawa Medical University in Japan. Following a postdoctoral fellowship with Dr. David B. Burr of the Department of Anatomy and Cell Biology in the IU School of Medicine, Li spent several years as a research scientist in Burr's laboratory before securing his position in the Department of Biology, School of Science, in 2006. He teaches junior-level biomedical engineering and a K-493 senior research class. Being in the unique position of teaching both biology and biomedical engineering, Li says, "My lab is where future biologists and future engineers meet!" Li holds grants from Lilly and Amgen, has one or two freshmen working in his laboratory every year, and receives numerous research requests annually. He has mentored undergraduate students for the IUPUI Center for Research and Learning's Undergraduate Research Opportunities Program (UROP) and Multidisciplinary Undergraduate Research Institute (MURI), Louis Stokes Alliances for Minority Participation (LSAMP), Diversity Scholars Research Program (DSRP), as well as IUPUI Undergraduate Research Mentoring in the Biological Sciences (URM). "I have been fortunate to mentor several excellent students, including Kimberly Ho-A-Lim and Tomás Mejome."



Jiliang Li, Ph.D.

Having been mentored himself, Li values the "opportunity to give back to the next generation" by mentoring undergraduate researchers. He points out, "Some students don't know what they want to do. I give them the opportunity to work in my lab and figure out whether they like it and want to pursue it in graduate school and their career." Li continues, "I really enjoy mentoring undergraduate students, having many kids working in my lab, which makes the lab active. They ask lots of questions." He reveals that he learns from those he mentors, including how to teach, which is a rewarding result. Li also endeavors to inspire as many undergraduates as possible in order to train more future researchers and scientists to perhaps make a significant scientific breakthrough. "I would be very happy if one of my students would make a contribution in whatever area they are working in. They are very smart; some design their own projects." His graduate students assist him in mentoring, which in turn facilitates their own learning process.

Aspiring to make an important discovery in bone biology, he hopes to make such a discovery his legacy. Unlike many international scholars who tend to move frequently, Li has lived in Indianapolis 15 years and hopes to retire here.

STUDENT SPOTLIGHT

Human-Computer Interaction Ph.D. student interns at Microsoft Research Cambridge to design novel experiences for nearby devices



A Ph.D. student in the Human-Computer Interaction program at the School of Informatics and Computing spent her summer as a research intern at [Microsoft Research's Human Experience and Design Laboratory](#) at Cambridge in the UK. Working with MSR researchers, [Debaleena Chattopadhyay](#) (pictured third from the left) designed an application to facilitate audience interactivity with presentations using an ad-hoc aggregation of co-proximate devices (such as laptops or smartphones).

Debaleena worked with her MSR mentor [Kenton O'Hara](#) on the Social Devices project that looks into ways to designing experiences for nearby device ecosystems. "To increase audience engagement in presentations, I designed a PowerPoint plugin and a companion smartphone app that enabled audience members' qualified, interactive access to slides from their mobile devices. This application shifts the static one-to-many paradigms of slideware to an inclusive experience—and is expected to foster more audience engagement," Debaleena explained.

In a research study conducted at MSR, she observed many emergent behaviors of the designed application, such as easy hand-over to co-presenters and increased spatial mobility within the social roles of presenter and attendees. "The crux of this research project was to design a user experience spanning multiple proximate devices that significantly increases the devices' cumulative value—but without increasing the cumulative complexity of the interaction experience," Debaleena said. An article reporting the preliminary findings of her project is currently under review for publication.

Debaleena is excited to continue her internship project at IUPUI with her advisor, [Davide Bolchini](#), Associate Professor of Human-Computer Interaction in the [Human-Centered Computing Department](#) at SoIC, in collaboration with MSR researchers. "We plan to study the use of this novel interactive application in the broad variety of unique presentation settings available in academia (and not necessarily available in industry contexts). Given the diversity of student population that IUPUI attracts due to its urban setting and a wide range of curriculum, we have an unparalleled opportunity to investigate the future of collaborative slideware and the opportunities

for such next-generation tools to increase student engagement. "

Before joining the [Human-Computer Interaction Ph.D. program](#) at the School of Informatics and Computing at IUPUI, Debaleena received a Master's degree in Computer Science from the State University of New York at Stony Brook. In SoIC, she works on designing touchless interactions for wall-sized displays. Her research interest lies in studying novel interaction experiences and input technologies.

Debaleena has previously served as the chair of the ACM-W chapter at IUPUI and the graduate vice-president of Women in Technology student organization. Some of her awards include the 2012 IUPUI Fellowship, the 2015 IUPUI Premiere 10 Award, and the 2015 Best Graduate Student in SoIC Award. She has published her peer-reviewed work in *Interacting with Computers*, *Cognition*, and the *Conference on Advanced Visual Interfaces*; and invited to present her dissertation research at multiple venues.

"I was able to pick up the right set of skills to pursue Human-Computer Interaction research at IUPUI," explained Debaleena. "The HCI Ph.D. program at SoIC focusses on fundamental methods to conceptualize innovative ideas and to define user requirements that make designs a right fit into the fabric of our everyday life. This crucial understanding of the multifaceted, human-centered factors that are essential to building the next-generation of interactive experiences played a key role in successfully completing my internship at Microsoft Research."

Suddenly, 'the best way to have a good idea is to have a lot of ideas' was no more a classroom cliché. Quick iterations, repeated critiques, and learning to avoid common pitfalls were crucial in making steady progress," Debaleena said. Collaboration with researchers also played an important role. Although she was working at MSR Cambridge, she often collaborated with researchers from other MSR offices, such as China and Redmond.

"I also got to learn new research skills from my MSR mentor that will help me immensely as I continue to pursue a career in research," Debaleena said.

Overall, the internship was a great learning experience—albeit challenging but profoundly rewarding. "I think my experience in working on diverse research projects—an opportunity that I got in SoIC—helped me the most. But to be a researcher, one has to be willing to learn new skills right up one's sleeve." Well, Debaleena learned to develop Microsoft Office tools and Windows mobile applications during her internship to prototype her project.

She was especially impressed by the freedom she had in shaping her project at MSR—in spite of being an intern. "I was given the choice to pitch ideas related to the lab's research agenda and steer one of them through the design, prototyping, and evaluation phase."

Although it was often unnerving to sit at the same table with the expert researchers that Debaleena had only known through their keynotes, journal articles, and news stories, and revered, she described the lab as a very tight-knit community.

"Researchers—either in my field or not—were unbelievably approachable; and if I needed any help, all I had to do was to write an email or drop by their office."

During her internship, Debaleena also had the opportunity to meet other interns, who share her passion for computing. "When you work with a group of talented and passionate researchers—who will always go the extra mile, your drive is only amplified," she said. "We took equal joy in punting down the Cam on a Saturday afternoon as in getting the right design on a Monday project review meeting."

When asked why she chose to pursue a Ph.D. in HCI, Debaleena said: "As computing sweeps into every aspect of our lives—from home to work to travel and beyond—designing appropriate user-friendly technologies has emerged to be the next frontier of computing. Skills in applying HCI principles toward developing future technologies is thus at a demand higher than ever before. I believe that a Ph.D. training in HCI

can prepare me to envision new interactive technologies that are human-centered and thus to 'invent the future' of computing products."

TRANSLATIONAL RESEARCH IMPACT

Inserting computers into heart and soul of medicine, the doctor-patient relationship

The latest technological innovation to affect the doctor-patient relationship is the examination room computer with its promise of supporting safer, more efficient and more effective patient care. But exam room computing is challenging and there is growing evidence that it can be a threat to patient safety and detrimental to good relationships and health outcomes.



Richard Frankel, Ph.D.

In a commentary [published in the Nov. 30 issue of JAMA Internal Medicine](#), Regenstrief Institute Investigator and Indiana University School of Medicine Professor of Medicine Richard Frankel, Ph.D., writes that the medical profession can ill afford not to develop and implement patient-centric, exam room computer-use best practices. He presents POISED, a model he has devised for developing and reinforcing good exam room computer-use by physicians.

- ***P**repare - review electronic medical record before seeing patient.
- ***O**rient - spend 1 to 2 minutes in dialogue with the patient explaining how computer will be used during the appointment.
- ***I**nformation gathering - don't put off data entry as patients may question how seriously their concerns are being taken if physician does not enter information gleaned from patient into computer from time to time.
- ***S**hare - turn the computer screen so patients can see what has been typed signaling partnership and also serving as a way to check that what is being entered is what was said or meant.
- ***E**ducate - show a graphic representation on the computer screen of information over time, such as patient's weight, blood pressure or blood glucose, so it can become basis for conversation reinforcing good health habits or talking about how to improve them.
- ***D**ebrief - Exam room computers provide ideal opportunity to use "teach back" or "talk back" format for doctor to assess the degree to which recommendations are understood by the patient and correct as necessary.

"Being POISED for examination room computer-use need not cost additional visit time. Used well, just the opposite is true," Dr Frankel's commentary concludes. "Medicine is fundamentally a human enterprise that is still practiced one conversation at a time. Our challenge is to find the best ways to incorporate computers [as care process partners] in the examination room without losing the heart and soul of medicine, the physician-patient relationship."

Over the past decade Dr. Frankel, a medical sociologist and health services researcher who is also a Department of Veterans Affairs research scientist, has conducted a series of studies based on direct observation and videotaping of use of computer in the exam room and conducted extensive interviews with physicians. He and colleagues have found wide variation in examination room computer use: some physicians spend more than 80 percent of the visit time interacting directly with the

patient, while others spend more than 80 percent of the visit time interacting with the computer screen.

In these studies Dr. Frankel and colleagues have reported that accuracy of the information gleaned from the patient and entered into the electronic medical record is highest when it occurs closest to receipt of the information versus at the end of the patient's appointment or physician's shift. Studying the patient's perspective, they have found patients have a preference for doctors who they believed to be paying attention to them. In that study he found that patients who were extremely satisfied with their physician believed that the doctor had spent more time with them than actually was spent.

Analyzing exam room computer-use, Dr. Frankel has identified gender differences. Female physicians typically look up from the screen approximately every 30 seconds or so, making eye contact with the patient to signal that they are still actively engaged in the relationship, and return to typing. Male physicians tend to lock on to the computer screen and rarely look up to signal engagement.

The physicians' need to document must be balanced against the need to build and maintain a relationship with the patient. "Computers in the exam room are here to stay. We need to integrate them into the physician-patient relationship in a patient-centered way. POISED provides a framework for us to do so," Dr. Frankel said.

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**.* 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**.* 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 under-represented 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**.* For grant guidelines and application forms, go to <http://research.iupui.edu/funding/>.

OTHER INTERNAL GRANT DEADLINES

Indiana CTSI Young Investigator Award applications due January 18

The Indiana Clinical and Translational Sciences Institute Young Investigator Awards in Clinical-Translational Research are designed to provide promising junior investigator faculty with the opportunity to be mentored in research-intensive multidisciplinary settings toward the goal of developing careers in clinical-translational research.

Benefits include partial salary support, as well as tuition and fees for required and elective coursework, pilot research monies, and travel funds to attend the national CTSI young investigator meeting.

Submit applications by January 18. For more about the awards and the application process, visit the [Indiana CTSI](http://indiana.ctsi.org) website. Contact Donna Burgett at dfburget@regenstrief.org with questions.

Apply by February 1 for postdoctoral training awards in translational research

The Indiana Clinical and Translational Sciences Institute (CTSI) seeks applicants for postdoctoral training awards in translational research. Translation may involve applying discoveries made during research (in the lab, through animal studies, etc.) to the development of clinical trials and studies in humans, or carrying out research aimed at enhancing the adoption of best practices, or both.

Funding is for two years (with the second year of funding contingent upon review and demonstration of satisfactory progress). Benefits include salary support as well as health insurance. Trainees will be required to attend a National CTSA meeting and present at several Indiana CTSI gatherings during the academic year.

Applications must be submitted by February 1, and awards will start on April 1. Interested candidates needing help identifying an appropriate co-mentor should contact the Indiana CTSI at their institution.

For information on eligibility and submission details, visit indianactsi.org.

OVCR EVENTS AND WORKSHOPS

Basic Proposal Development

Target Audience: IUPUI and IUPUC Faculty

When: Thursday, January 21, 2016 | 11:30am - 1:00pm

Where: University Library, Room 1126

This workshop will focus on the basic essentials of building a successful grant proposal for agencies that fund in the sciences, social sciences, arts, and humanities. A wide-range of topics will be covered including: developing a strong foundation for your application; key components of the narrative and the basic budget; writing styles; interpreting agency guidelines; the necessity for knowing how your proposal will be reviewed; funding limitations; and how to communicate complex ideas in a limited space.

Register: <https://crm.iu.edu/CRMEvents/BasicProposalDevel012116/>

NSF CAREER Series

The Faculty Early Career Development (CAREER) Program is a National Science Foundation-wide activity offering prestigious awards in support of junior faculty who exemplify the role of teacher-scholars through outstanding research, excellent education, and the integration of education and research within the context of the mission of their organizations. The NSF deadlines for submission of proposals are expected to be July 23, 24, and 25, 2016, depending on discipline. If you are interested in applying and would like assistance by OVCR staff, be sure to attend the following sessions.

Session 1: General Information & Eligibility

Target Audience: Early Career Faculty in Disciplines Funded by NSF

When: Friday, **February 26, 2016** | 11:30am - 1:00pm

Where: University Library, Room 1126

A brief review of the guidelines and eligibility requirements will be presented. Attendees will also learn what resources are available to support development of a competitive proposal to the National Science Foundation CAREER program.

Register: <https://crm.iu.edu/CRMEvents/NSFCAREERSession1022616/>

Session 2: Panel of Successful Applicants

Target Audience: Early Career Faculty in Disciplines Funded by NSF

When: Friday, **March 25, 2016** | 11:30am - 1:00pm

Where: University Library, Room 1126

As a follow-up to the initial introductory session in February, recent NSF CAREER awardees will share tips on securing funding through this program and answer questions from attendees.

Register: <https://crm.iu.edu/CRMEvents/NSFCAREERSession2032516/>

JagStart – IUPUI Student Idea Pitch Competition

Target Audience: General

When: Friday, March 4, 2016 | 1:00pm - 5:00pm

Where: University Library, Lilly Auditorium

JagStart is an annual student idea pitch competition that rewards IUPUI students for their innovative ideas to solve challenges facing the nation and the world. The emphasis of the competition is on finding answers to real-world problems through new approaches, products, services, or business ventures. In a three-minute "elevator" pitch format, individuals or teams are asked to propose original solutions to pressing social and economic issues.

Register: <https://crm.iu.edu/CRMEvents/JagStart2016/>

Exploring NSF Research Experiences for Undergraduates

Target Audience: IUPUI and IUPUC Faculty Interested in Mentoring Undergraduate Researchers

When: Friday, April 1, 2016 | 2:00pm - 3:30pm

Where: University Library, Room 1126

Discussion will focus on the funding opportunities that faculty can apply for such as the NSF REU program to support student research capabilities. In addition, discussion leaders will explain resources available through the Office of the Vice Chancellor for Research to support faculty ventures designed specifically to initiate and conduct projects that engage a number of undergraduate students in thematically-linked, ongoing research projects in meaningful ways. For those with existing NSF funding, supplemental grants to add undergraduate researchers to currently funded NSF projects will also be covered. The NSF deadline for submission of REU site proposals is expected to be August 29, 2016. If you are interested in applying and would like assistance by OVCR staff, be sure to attend.

Register: <https://crm.iu.edu/CRMEvents/ExploringNSFREU040116/>

OTHER EVENTS AND WORKSHOPS

Register for March 4 RESPECT palliative care conference

Registrations are now being accepted for the Friday, March 4, conference, "Let's Talk Palliative Care: Continuity Across Settings" sponsored by the RESPECT Center. The conference brings together clinicians and researchers interested in evidence-based palliative and end-of-life care to help enhance clinical practice and foster new partnerships for translational research.

The conference will be held at the Ritz Charles in Carmel. For more information or to register, visit the [RESPECT Center website](#).

RECENT EXTERNAL FUNDING AWARDS

Grants and Awards – October 2015

Boustani, Malaz A	CENTERS FOR MEDICARE AND MEDICAID SERVICES	The Great Lakes Practice Transformation Network	MEDICINE	CLINICAL TRANSLAT SCI (CTSI)	\$49,825,705
Callahan, Christopher M.	AGENCY FOR HEALTHCARE RESEARCH AND QUALITY	Brain Health Patient Safety Learning Laboratory	MEDICINE	GENERAL INTERNAL MEDICINE	\$3,848,333
Harle, Christopher Albert William	AGENCY FOR HEALTHCARE RESEARCH AND QUALITY	Designing User-Centered Decision Support Tools for Chronic Pain in Primary Care	PUBLIC HLTH	HEALTH POLICY & MANAGEMENT	\$1,954,230
Fogel, Evan L.	NATIONAL INSTITUTE OF DIABETES, DIGESTIVE & KIDNEY	Indiana University (IU) Clinical Center for Chronic Pancreatitis Clinical Research	MEDICINE	GASTROENTEROLOGY	\$1,861,386
Robertson, Kent A.	U.S. FOOD AND DRUG ADMINISTRATION	Phase 2 Study of Imatinib in Children with Neurofibromatosis and Airway Tumors, IND#117448	MEDICINE	PED-HEMATOLOGY/ONCOLOGY	\$1,600,000
Orschell, Christie M	U.S. DEPARTMENT OF DEFENSE	Mitigation of the hematopoietic and gastrointestinal acute and delayed radiation syndromes using combination therapy with pegylated hematopoietic growth factors	MEDICINE	HEMATOLOGY/ONCOLOGY	\$1,589,461
Travis, Lois B.	NATIONAL CANCER INSTITUTE	Genetic Susceptibility and Biomarkers of Platinum-Related Toxicities	MEDICINE	CANCER CENTER	\$1,532,734
Nakshatri, Harikrishna	U.S. DEPARTMENT OF DEFENSE	The impact of ethnicity-dependent differences in breast epithelial hierarchy on tumor incidence and characteristics	MEDICINE	GENERAL SURGERY	\$1,091,995
Ciccarelli, Mary R.	INDIANA STATE DEPARTMENT OF HEALTH	Center for Youth and Adults with Conditions of Childhood (CYACC)	MEDICINE	PED-EDUCATION OFFICE	\$761,268
Block, Michelle L	U.S. DEPARTMENT OF DEFENSE	The Role of Protein Radicals in Chronic Neuroimmune Dysfunction and Neuropathology in Response to a Multiple-hit Model of Gulf War Exposure	MEDICINE	ANATOMY & CELL BIOLOGY	609,042
Borme, Andrew	HENDRICKS COUNTY GOVERNMENT	Economical Dynamic Vehicle Simulators	E&T	MECHANICAL ENGINEERING TECH	\$450,000
He, Chunyan	SUSAN G. KOMEN BREAST CANCER FOUNDATION	Potentially Causal Changes in DNA Methylation and Breast Cancer Development	PUBLIC HLTH	EPIDEMIOLOGY	450,000
Rohr-Kirchgraber, Theresa M	INDIANA STATE DEPARTMENT OF HEALTH	Preventing Unplanned Pregnancy	MEDICINE	OBSTETRICS AND GYNECOLOGY	\$431,172
Marrero, David G.	JOINT INSURER PROVIDER INSTITUTE, INC.	AMA-DTRC Patient Activation Study	MEDICINE	ENDOCRINOLOGY	\$350,000
Harle, Christopher Albert William	UNIVERSITY OF FLORIDA	An Interactive Patient-Centered Consent for Research Using Medical Records	PUBLIC HLTH	HEALTH POLICY & MANAGEMENT	\$281,580
Ghetti, Bernardino	LILLY RESEARCH LABS	Multimodal (neuropathology, biomarkers, and clinical) assessment of heterogeneity in Alzheimer cases using biochemical, histochemical and ultrastructural methods	MEDICINE	PATHOLOGY AND LABORATORY MED	\$265,000
		GUIDING Evidence Based Therapy Using			

Finet, J. Emanuel	DUKE UNIVERSITY	Biomarker Intensified Treatment in Heart Failure (GUIDE-IT)	MEDICINE	CARDIOLOGY	\$213,000
Noonan, Doug	CHARLES G KOCH CHARITABLE FOUNDATION	Political Economy and Environmental Research (PEER) Initiative	SPEA	PUBLIC & ENVIRONMENTAL AFFAIRS	\$210,000
Hill, James Haswell	U.S. DEPARTMENT OF HOMELAND SECURITY	Reducing False Positive Reported By Static Code Analysis Tools	SCIENCE	COMPUTER SCIENCE	\$203,302
Einterz, Robert Michael	ABBOTT FUND	Academic Model Providing Access to Healthcare (AMPATH) 2015 for Diabetes and Chronic Disease Care		GENERAL INTERNAL MEDICINE	\$200,000
Bhatwadekar, Ashay D	INTERNATIONAL RETINAL RESEARCH FOUNDATION	Muller cell dysfunction in diabetic retinopathy	MEDICINE	OPHTHALMOLOGY	\$200,000
Goodpaster, John V	NATIONAL INSTITUTE OF JUSTICE	Automated Derivatization and Identification of Controlled Substances via Total Vaporization Solid Phase Microextraction (TV-SPME) and Gas Chromatography/Mass Spectrometry (GC/MS)	SCIENCE	CHEMISTRY	\$190,223
O'Neil, Joseph	INDIANA STATE DEPARTMENT OF HEALTH	Spina Bifida Program at Riley Hospital	MEDICINE	PED-DEVELOPMENTAL PEDIATRICS	\$169,050
Hudson, Deborah M	PURDUE UNIVERSITY	Bringing Indiana Along	MEDICINE	CANCER CENTER	\$164,296
Khurana, Monica	INDIANA STATE DEPARTMENT OF HEALTH	Sickle Bright: Transitioning to a Bright Future	MEDICINE	PED-HEMATOLOGY/ONCOLOGY	\$124,674
Schubert, Peter J	AERODYN COMBUSTION LLC	STTR: Wave Rotor Constant-Volume Combustion for Energy Efficiency and Greenhouse Gas Abatement in Gas Turbine Engines	E&T	ELECTRICAL & COMPUTER ENGR	\$100,000
Loehrer, Patrick J.	WALTHER CANCER FOUNDATION, INC.	Center Directors Developmental Funds Award	MEDICINE	CANCER CENTER	\$100,000

Grants and Awards – November 2015

Neumann, Dawn M	ADMINISTRATION FOR COMMUNITY LIVING	Examining determinants of negative attribution bias in people with traumatic brain injury	MEDICINE	PHYSICAL MEDICINE & REHAB	\$602,333
Mali, Raghuv eer Singh	LEUKEMIA AND LYMPHOMA SOCIETY	Mechanisms by which Acute Myeloid Leukemia alters the bone marrow microenvironment	MEDICINE	PED-NEONATAL BASIC RESEARCH	\$399,999
Champion, Victoria L	OHIO STATE UNIVERSITY	Comparative Effectiveness of Interventions to Improve Screening Among Rural Women	NURSING	NURSING	\$295,587
Pfeifle, Andrea L	UNIVERSITY OF MINNESOTA	Coordinating Center for Interprofessional Practice and Education PIONEER MEMBERS OF THE NEXUS INNOVATIONS INCUBATOR	MEDICINE	FAMILY MEDICINE	\$240,000
McAllister, Jeanne Walker	INDIANA STATE DEPARTMENT OF HEALTH	Title V: Medical Home and Transition to Adulthood	MEDICINE	PED-HEALTH SERVICES RESEARCH	\$225,824
Payne, R. Mark	GLAXO SMITH KLINE	Nrf2 activators in Friedreich?s Ataxia	MEDICINE	PED-CARDIAC DEV BIOLOGY WELLS	\$161,717
Turchi, John J	NERX BIOSCIENCES, INC.	Development of Novel Lung Cancer Therapeutics Targeting the DNA Damage Response (R41CA195926-01)	MEDICINE	HEMATOLOGY/ONCOLOGY	\$138,633
Nabinger, Sarah Cassidy	AMERICAN CANCER SOCIETY, INCORPORATED	Targeting PRL2 phosphatase in acute myeloid leukemia	MEDICINE	PED-NEONATAL BASIC RESEARCH	\$111,500

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.

Gerber Foundation

Pediatric Research Grants: The Foundation is particularly interested in fresh approaches to solving newborn or pediatric problems or emerging issues with a predictable time frame to clinical application. Projects may include: etiologic mechanisms of disease; new, improved or less invasive diagnostic procedures; reduction or elimination of side effects; alleviation of symptoms; new, improved or less invasive therapies, care, or treatments.

The foundation offers research grants in the following categories: **PEDIATRIC HEALTH-** Of particular interest are applied research projects focused on reducing the incidence of serious neonatal and early childhood illnesses, or improving cognitive, social and emotional aspects of development. **PEDIATRIC NUTRITION-** include applied research that evaluates the provision of specific nutrients and their related outcomes in infants and young children. **ENVIRONMENTAL HAZARDS-** The Foundation is interested in projects that evaluate the effects of environmental hazards on infants and young children. Applied research projects that document the impact of, or ameliorate effects of, environmental hazards on the growth and development of infants and young children are the focus of this area of interest.

Deadlines: Concept Paper: June 28, 2016; Proposal: August 15, 2016.

<http://www.gerberfoundation.org/pd-research/research-awards/application-process>

National Endowment for the Humanities

Public Scholar Program: The Public Scholar program supports well-researched books in the humanities intended to reach a broad readership. The Public Scholar program aims to encourage scholarship that will be of broad interest and have lasting impact. Such scholarship might present a narrative history, tell the stories of important individuals, analyze significant texts, provide a synthesis of ideas, revive interest in a neglected subject, or examine the latest thinking on a topic. Books supported by this program must address significant humanities themes likely to be of broad interest and must be written in a readily accessible style.

By establishing the Public Scholar program, NEH enters a long-term commitment to encourage scholarship in the humanities for general audiences. In the early rounds of the competition, NEH especially welcomes applicants who are in the writing stages of their projects or who already have a commitment from a publisher. However, the Public Scholar program also supports projects in the early stages of development. The program is open to both individuals affiliated with scholarly institutions and independent scholars.

Upon completion of their books, Public Scholars will be expected to participate in public events, such as serving as keynote speakers at conferences and offering public lectures at book festivals, library and museum programs, or other events aimed at reaching broad audiences. Additional NEH support for such events may become available. *Deadline: Application: February 2, 2016.*

<http://www.neh.gov/grants/research/public-scholar-program>

NATIONAL INSTITUTES OF HEALTH

Human Immunology Project Consortium (U19): This Human Immunology Project Consortium (HIPC) announcement solicits applications from single institutions, or consortia of institutions, to participate in a network of human immunology profiling research groups in the area of infectious diseases, including HIV. The purpose is to characterize human immune responses/mechanisms elicited by vaccinations, adjuvants or natural infection by capitalizing on recent advances in immune profiling technologies. Studies supported will measure the diversity and commonalities of human immune responses under a variety of conditions using high-throughput systems biology approaches coupled with detailed clinical phenotyping in well-characterized human cohorts. The long-term goal is to develop molecular signatures that define immune response categories/ fingerprints/profiles that correlate with the outcomes of vaccinations, adjuvants or natural infections in

humans. *Deadlines: Letter of Intent: February 17, 2016; Proposal: March 17, 2016.*
<https://grants.nih.gov/grants/guide/rfa-files/RFA-AI-15-041.html>

Collaborative Projects to Accelerate Research in Organ Fibrosis (RO1): While fibrogenesis is an essential process in normal wound healing, aberrant and relentless fibrogenesis in vital organs such as heart, lung, and kidney can lead to debilitating symptoms and organ failure. Aberrant fibrogenesis at the cellular level shows remarkable similarities across different organ systems. Moreover, a disease such as systemic sclerosis or an injury such as ionizing radiation may cause fibrosis in more than one organ system. Thus, collaborations among researchers studying fibrosis in different organ systems may greatly accelerate research in this area. This announcement invites applications from collaborating investigators to characterize and compare mechanisms of aberrant fibrogenesis and/or fibrosis resolution in different organ systems; develop novel therapeutic strategies aimed to lessen organ fibrosis; or develop novel technologies to study fibrosis. *Deadline: October 21, 2016.*
<http://grants.nih.gov/grants/guide/rfa-files/RFA-HL-16-003.html>

Partnerships for the Development of Host-Targeted Therapeutics to Limit Antibacterial Resistance (RO1): The purpose of this opportunity is to solicit research applications for milestone-driven projects focused on preclinical development of candidate therapeutics that target host-encoded functions required for infection, replication, virulence, proliferation and/or pathogenesis of select bacterial pathogens for which drug resistance poses a significant public health concern. This initiative will support preclinical development of a single candidate therapeutic or lead candidate series. For projects initiating with a lead series, down-selection to a single lead candidate must be accomplished within the first two years of the project period. Of particular importance for novel host-targeted therapeutics is consideration of the most appropriate clinical and regulatory path to product registration and potential hurdles such as demonstration of pathogen susceptibility and therapeutic efficacy using non-standard in vitro assays and in vivo disease models, as well as potential toxicity issues. Participation of industrial laboratories is expected to facilitate appropriate and validated product development activities. *Deadlines: Letter of Intent: August 17, 2016; Application: September 17, 2016.*
<http://grants.nih.gov/grants/guide/rfa-files/RFA-AI-15-024.html>

NATIONAL SCIENCE FOUNDATION

Integrated Earth Systems (IES): Integrated Earth Systems (IES) is a program in the Division of Earth Sciences (EAR) that focuses on the continental, terrestrial and deep Earth subsystems of the whole Earth system. The overall goal of the program is to provide opportunity for collaborative, multidisciplinary research into the operation, dynamics and complexity of Earth systems at a budgetary scale between that of a typical project in the EAR Division's disciplinary programs and larger scale initiatives at the Directorate or Foundation level. Specifically, IES will provide research opportunities for the study of Earth systems from the core of the Earth to the top of the critical zone with a specific focus on subsystems that include continental, terrestrial and deep Earth subsystems at all temporal and spatial scales. IES provides opportunities to focus on Earth systems connected to topics which include the continents; the terrestrial, surficial Earth systems including physical, chemical and biotic dimensions; linkages among tectonics, climate, landscape change, topography and geochemical cycles including core and mantle processes. *Deadline: Nov. 14, 2016.* http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=504833

Interdisciplinary Behavioral and Social Science Research (IBSS): There are a broad range of topics for which compelling interdisciplinary research might be conducted. While willing to accept proposals for any topic, the Directorate especially encourages IBSS research on one of the following three general topics.

1) Population Change: Examples of possible issues related to population change for which interdisciplinary research in the social and behavioral sciences might be pursued are the dynamics of aging; gender roles within households, communities,

and societies; implications of population change for current and future resource use and availability; migration and other factors related to the changing spatial distribution of people.

- 2) Sources and Consequences of Disparities: Examples of possible issues related to sources and consequences of disparity for which interdisciplinary research in the social and behavioral sciences might be pursued are the dynamics of economic, social, and cultural disparity within and across populations; the causes and consequences of disparity in health, education, wages, and other factors at levels ranging from the macro to the micro; the role of disparities in the processes of conflict, dissent, cooperation, or decision making.
- 3) Technology, New Media, and Social Networks: Examples of possible issues related to technology, new media, and social networks for which interdisciplinary research might be pursued are the processes through which new technologies are envisioned, developed, implemented, evaluated, and refined; the impacts of new forms of interpersonal communication on the ways that people and organizations function internally and with others; and the ways in which cultural, social, and/or economic forces may influence the willingness of communities to adopt and use new technologies. *Deadline: Dec. 1, 2016.* http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=504832

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. 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.

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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