



• Research Development

Office of the Vice Chancellor for Research

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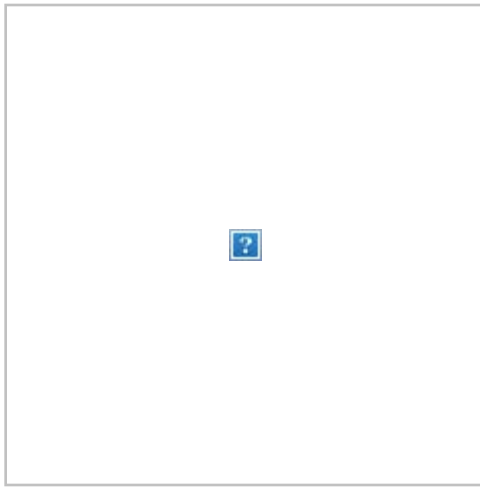
RESEARCH ENTERPRISE NEWSLETTER

September 28, 2017

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MESSAGE FROM THE VICE CHANCELLOR FOR RESEARCH



Dear Colleagues:

Welcome to the second edition of the Research Enterprise for the 2017-18 academic year. Research Enterprise is your first stop for information essential to your research, scholarship and creative activity, and the place to find out about the latest work from the vibrant community of students, staff and faculty at IUPUI.

The Office of the Vice Chancellor for Research is eager to help faculty achieve success across all disciplines and encourages you to use the resources available through our office, whether it is our internal funding mechanisms, proposal development services or assistance with research commercialization. You can get started by visiting our updated website at research.iupui.edu.

Finally, I invite you to register for and attend the IUPUI Research On-Boarding Orientation (ROBO) that will take place on October 24th,

from 9:00 am to 2:00 pm.

Our hope is that this day-long event will offer something for all faculty. The program will allow participants to:

- Gain a better understanding of the offices at IUPUI that support your research.
- Learn about many programs and services that are available to help faculty succeed in their research and creative activities.
- Receive insights from current faculty about how they were able to achieve early success.
- Connect with resources that are available through centers, institutes, and other research support units on campus.
- Meet new research colleagues and possibly explore potential collaborations.

As always, we welcome your input and feedback on how we might better support you and your research success. Please feel free to contact us (ovcr@iupui.edu) with your thoughts and we will do our best to accommodate your needs.

I wish you a successful and rewarding year, and look forward to learning about your achievements.

Simon Atkinson

Vice Chancellor for Research

FEATURE STORY

Three researchers receive 2017 Research Frontiers Trailblazer Award

Researchers from the Indiana University School of Medicine and the [Richard M. Fairbanks School of Public Health](#) have been named recipients of the 2017 Research Frontiers Trailblazer Award at IUPUI. Their work could impact lives around the world, as they aim to form new hepatitis B and HIV therapies and to keep chronic pain sufferers from opioid addiction.

The award recognizes outstanding IUPUI researchers who show promise in becoming nationally and internationally known for their research and creative activity. It is given to associate professors within the first three years of being appointed or promoted to that title.

The 2017 recipients are:

Haitao Guo

Image of Haitao Guo



Haitao Guo

[Guo](#) is an associate professor in the Department of Microbiology and Immunology at the IU School of Medicine, conducts research on the molecular biology of the hepatitis B virus to find new therapeutics to treat it. He said the virus has infected approximately 2 billion people worldwide, resulting in about 1 million deaths annually. There is no cure.

"Available drugs fail to eradicate the virus in the liver because it plants a special structure, called cccDNA, in the cell nucleus," he said. "The structure is the mother ship for virus reproduction. It is resistant to current drugs, which only target the viruses it creates. Eliminating it is considered the holy grail for a definite cure."

Guo and his colleagues are screening small-molecule compounds to find cccDNA inhibitors. Two are under development but have yet to undergo clinical trials with patients.

[Watch a video about Haitao Guo's research](#)

Chris Harle

Image of Chris Harle



Chris Harle

Harle is an associate professor in the Department of Health Policy and Management and the Ph.D. program director at the Richard M. Fairbanks School of Public Health, and an affiliated scientist at the Center for Biomedical Informatics at the Regenstrief Institute. He has received two National Institutes of Health grants. One supports the design of electronic informed-consent tools so people can decide whether to share their health information for research studies. Researchers want to study health information recorded in databases -- including data about doctor and hospital visits, prescriptions, and diseases -- to answer research questions.

"It is important that people have a say in whether their health records, which are private and often sensitive, are viewed for research studies," he said. "We are testing multiple designs to determine what information is most useful for people when making this decision."

The other grant funds a project to pinpoint the most difficult decisions primary care clinicians face when caring for patients with chronic pain. Harle said prescription drug medications, namely opioids, are highly addictive, leading to tens of thousands of Americans dying annually from prescription pain medication overdoses.

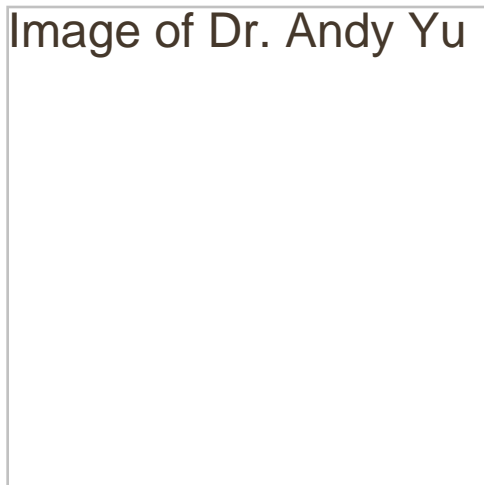
"By understanding the decisions primary care clinicians face in caring for these patients, we can design computerized tools to better collect and communicate the information that clinicians need to help relieve pain while also keeping patients safe from addiction," he said.

[Watch a video about Chris Harle's research](#)

Andy Yu

Yu is an associate professor in the Department of Microbiology and Immunology at the IU School of Medicine. His research focuses on the origin and development of HIV infection -- the late-stage symptoms of which are referred to as AIDS -- as well as its interactions with other long-lasting viruses. More than 35 million people have died during the HIV pandemic, and more than 36 million people worldwide are

Image of Dr. Andy Yu



Dr. Andy Yu

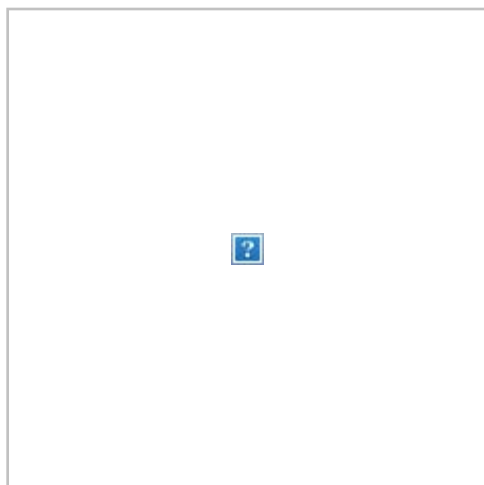
currently infected.

"My emphasis is on developing therapeutic approaches to eliminate HIV reservoirs, which are groups of infected cells that do not actively produce the virus," he said.

Yu said the only effective treatment currently available for HIV-infected patients is antiretroviral therapy, or ART. It suppresses HIV production, but even patients who have been on ART for years still have the virus in their blood. Lifelong ART poses problems including toxicity, high costs and drug resistance, but interrupting it leads to a resurgence of HIV levels because of the reservoirs.

"Therefore, latently HIV-infected cells represent a major obstacle for HIV eradication," Yu said. "My colleagues and I are developing approaches to purge these reservoirs in a move toward a cure."

[Watch a video about Dr. Andy Yu's research](#)



Simon Atkinson

[IUPUI Vice Chancellor for Research Simon Atkinson](#) said faculty across all academic disciplines continue to strengthen the campus's reputation with their research and creative activity.

"This year we recognize Haitao Guo, Chris Harle and Andy Yu, but faculty in all IUPUI schools are at the forefront of thought-provoking, pulse-quickening work," he said. "The 18 distinct schools at IUPUI bring together some of the foremost experts in the nation to inquire about how we live, what makes us human and how we can improve quality of life. Their research and creative activity impacts not only Indianapolis residents, but citizens across the state, nation and world. The Research Frontiers Trailblazer Award recognizes and celebrates them and their work."

[A list of previous recipients](#) of the Research Frontiers Trailblazer Award is available online.

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ANNOUNCEMENTS

IU School of Medicine researchers identify promising treatment for people suffering from post-TBI aggression

A drug originally developed in the 1960s as an antiviral medication is showing promise as a treatment option for people who suffer from increased feelings of aggression following traumatic brain injury (TBI), IU School of Medicine researchers have reported.

Aggression and anger are among the most common emotional and behavioral symptoms experienced by traumatic brain injury patients--often resulting in poorer rehabilitation outcomes and negatively affecting patients' relationships with family and friends and their ability to live at home and maintain steady employment.

The team of researchers, led by Flora Hammond, MD, chair of the IU School of Medicine [Department of Physical Medicine and Rehabilitation](#), and Covalt Professor of Physical Medicine & Rehabilitation, found that in multiple studies of patients with chronic traumatic brain injury and moderate-severe aggression, taking 100 milligrams of the drug Amantadine twice daily appeared to be beneficial in decreasing aggression, from the perspective of the patients.

[Their findings were published in the newest issue of the Journal of Head Trauma Rehabilitation](#), for which IU School of Medicine Associate Professor Dawn M. Neumann, PhD, served as topical issue editor focusing on treatment for emotional issues after traumatic brain injury.

For more on this new treatment option, read the full news release in the [IU School of Medicine Newsroom](#).

IUPUI Math Prof Honored

Pavel Bleher, Chancellor's Professor of Mathematical Sciences at IUPUI, and an internationally respected expert in mathematical physics and probability theory, was honored in September with a conference commemorating his 70th birthday. "Mathematical Physics Perspective of Billiards and Dominoes" will be held at UMass Amherst. Plenary speakers from several countries included IUPUI colleague Michal Misiurewicz.

Bleher joined IUPUI's math department in 1994 and has an impressive record teaching and mentoring exceptional high school, undergraduate and graduate students.

Details at <http://people.math.umass.edu/~jchen/SepWorkshop/UmassConference-Overview.html>

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CENTER SPOTLIGHT

Many ICU survivors depressed: IU study finds young people, African Americans at highest risk



Intensive care unit (ICU) survivors, growing in number as clinicians and medical technology save more lives, are psychologically as well as medically fragile. The first study to examine antidepressant use and depressive symptoms after an ICU stay, has found that even if prescribed antidepressants, a significant percentage—about a third—had symptoms of depression at the time of their initial visit to a clinic specially designed for ICU survivors. Young ICU survivors and African American ICU survivors were at the highest risk for depression.

[The new study of depression risk profiles of ICU survivors](#), conducted by [Indiana University Center for Aging Research](#) and IU Center for Health Innovation and Implementation Science clinician-researchers, is published in the *Journal of Hospital Medicine*.

Babar Khan, MD, and Sophia Wang, MD Photo by Indiana University Center

for Aging Research

In the study, 204 racially diverse ICU survivors, 18 years or older, were screened for depressive symptoms with a standard depression test on an initial visit to the Eskenazi Health Critical Care Recovery Center (CCRC) prior to any treatment in the CCRC. Young age was found to be a risk factor for post-ICU depression whether the ICU survivor was being treated for depression or not. African Americans who had been prescribed antidepressants were also found to be at increased risk of depression.

"Now that we have determined that in addition to being young, being African American imparts higher risk of depression for ICU survivors, the next step will be to determine the underlying reasons for this elevated risk," said study first author [Sophia Wang](#), MD, a Center for Health Innovation and Implementation Science researcher and IU School of Medicine assistant professor of clinical psychiatry. "Why are younger ICU survivors more vulnerable to depression? What genetic and environmental factors are causing a lower likelihood of response to antidepressants in African Americans? Once we know the answers to these questions we can begin to counter the problems and more effectively treat the depression in these ICU survivors."

Approximately 5 million adults are admitted to medical or surgical ICUs across the United States annually. The majority survive their ICU stay.

"Spending time in an ICU, where very invasive things happen quickly--is by its nature a very anxiety-provoking experience for many people, no matter their age, ethnicity or level of education," Dr. Wang said. "Our study reveals two important findings: one, that not all ICU survivors have the same level of risk for depression, and two, that the mental health of ICU survivors is being inadequately treated."

"The CCRC provides an ideal space for all ICU survivors to be screened and treated for depression, which is prevalent among ICU survivors," said senior author [Babar Khan](#), MD, an IU Center for Aging Research and Regenstrief Institute investigator and IU School of Medicine associate professor of medicine. "The CCRC is a model of care that merges clinical operations with research. Further development of such models across the nation is needed to enhance care access to vulnerable ICU survivors."

[Dr. Khan developed the CCRC model and serves as medical director of the Eskenazi Health Critical Care Recovery Center](#) and is an implementation scientist with the IU Center for Health Innovation and Implementation Science

Drs. Wang and Khan call for future studies to examine new approaches to increase access to effective depression treatment and to test new antidepressant regimens for post-ICU depression.

Authors of "Antidepressant Use and Depressive Symptoms in Intensive Care Unit (ICU) Survivors" in addition to Drs. Wang and Khan are Chris Mosher, MD, and Sujuan Gao, PhD, of IU School of Medicine; Kayla Kirk, MA, of Eskenazi Health; Sue Lasiter, RN, PhD, formerly with the IU School of Nursing and now with the University of Missouri-Kansas City School of Nursing and Health Studies; Sikandar Khan, MD, and You Na Kheir, MD, of IU School of Medicine and [Malaz Boustani](#), MD, MPH. Dr. Boustani is the founder of the Indiana Clinical and Translational Science Institute's IU Center for Health Innovation and Implementation Science; associate director of the IU Center for Aging Research, a Regenstrief Institute investigator and Richard M. Fairbanks Professor of Aging Research at IU School of Medicine.

The authors note that their study provides a much-needed database for future research and potential

personalized mental health treatment of ICU survivors based on objective measurement of their depressive symptoms and a greater understanding of risk for these symptoms.

The study was supported by the IU Center for Aging Research and Eskenazi Health.

The internationally recognized IU Center for Aging Research was established in 1997 through collaboration of the Regenstrief Institute, IU and IU School of Medicine. The IU Center for Health Innovation and Implementation Science is a program of the Indiana Clinical and Translational Sciences Institute. The center's mission is to use implementation science to produce high-quality, patient-centered and cost-efficient health care delivery solutions for health care systems of any size, anywhere.

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FACULTY SPOTLIGHT

IUPUI religious studies professor named editor of *Journal of the American Academy of Religion*

Image of Andrea Jain



Andrea Jain

Andrea Jain, an associate professor of religious studies in the Indiana University School of Liberal Arts at IUPUI, has been appointed editor of the prestigious *Journal of the American Academy of Religion*. With around 9,000 members, the American Academy of Religion is the largest organization of religious studies scholars in the world, and its quarterly journal is the most prestigious in the field.

Jain is a leading scholar of South Asian religions and yoga studies. Her 2014 book, "Selling Yoga: From Counterculture to Pop Culture," was published by Oxford University Press and is a top seller in the field of comparative religions. She has co-chaired the Yoga in Theory and Practice unit of the American Academy of Religion, and her work is featured regularly in newspapers, magazines

and the scholarly blog *Religion Dispatches*.

"Since arriving at IUPUI, professor Jain has exemplified the religious studies department's commitments to research excellence and public engagement," said David Craig, chair of the IUPUI religious studies department. "She is an ideal choice to lead the Journal of the American Academy of Religion in new scholarly directions and to ensure its broader public relevance for understanding the importance of diverse religions to social, political and economic events and the lives of individuals and communities around the globe."

Jain joined the faculty in the School of Liberal Arts in 2010 after receiving her Ph.D. from Rice University. Her areas of interest include contemporary spirituality and the history of modern yoga; the yoga industry's relationship to capitalism and consumer culture; the intersections of gender, sexuality and yoga; religion and politics in contemporary society; and methods and theories in the study of religion.

"I am honored to serve as editor of such an important journal and look forward to helping share the work of colleagues around the world while fostering important conversations," Jain said. "I am also grateful to work with so many talented scholars at IUPUI, all of whom have made our department a valuable asset to the campus and to the field of religious studies."

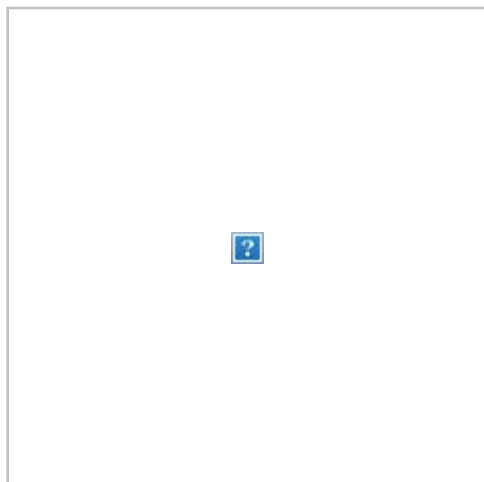
The IUPUI religious studies department will serve as the journal's editorial office, which is also noteworthy for IUPUI, the School of Liberal Arts and the department.

The Office of the Vice Chancellor for Research at IUPUI has allowed release time for Jain's work as editor, while the Office of the Vice President for Research at Indiana University is contributing funding for two IU Bloomington graduate students to serve as editorial assistants.

"These collaborative investments are foundational to the first-rate humanities scholarship recognized by professor Jain's selection as editor of the Journal of the American Academy of Religion," said Thomas J. Davis, dean of the School of Liberal Arts. "The journal will continue to be a key publication in religious studies, and we're delighted that IUPUI will have such a significant role." A celebration of Jain's appointment, in conjunction with Indiana Humanities, will take place from 4 to 5 p.m. Oct. 10 in Room 409 of the IUPUI Campus Center. IUPUI Executive Vice Chancellor and Chief Academic Officer Kathy Johnson will speak along with Davis, while Jain will speak about her vision for the journal and for humanities research at IUPUI.

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IUPUI cell biologist tackles age-related hearing loss with \$1.9 million grant



IUPUI cell biologist Ben Perrin, right, and graduate student Pallabi Roy work at a computer

lab in August 2017. Photo courtesy of the School

Perrin is tackling the problem at the cellular level by exploring the function of the portion of the sensory cells in the inner ear that is responsible for detecting sound waves. These bundles of rod-like protrusions, called stereocilia, bend as sound hits them, opening ion channels. When stereocilia work properly, they convert sound waves into electric signals that are transmitted to the body's neurons, thus enabling one to hear speech, music and other sound.

Stereocilia may be abnormal at birth; they deteriorate as we age; and they can be damaged or destroyed by disease, toxins or loud noises. They do not grow back; hearing loss occurs if stereocilia malfunction or degenerate.

"To successfully convert sound waves into electric signals that can be understood by neurons, the stereocilia have to be exactly the right shape, size and conformation," Perrin said. "We are studying the dynamics and stability of how proteins move in and out of stereocilia to gain a better understanding of how these micromachines maintain themselves over long periods of time.

"If you want to try to regenerate stereocilia, you have to know how these living machines work in the first place. With this knowledge, it may be possible in the future to regenerate them to prevent or restore hearing loss. We are hoping to solve a biological puzzle with implications for millions of people."

Perrin envisions the development of a maintenance-of-living-cells approach -- remodeling or regrowing a tiny piece of the cell before the whole cell is dead -- rather than totally replacing them.

Each semester, three IUPUI graduate students and two to five undergraduates will work on the project

under Perrin's tutelage, conducting sophisticated experiments on mouse sensory cells, which are very similar to human sensory cells, and analyzing the data obtained from those experiments. Cytoskeletal Stability in Stereocilia Maintenance is supported by NIDCD grant R01DC015495-01A1.

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OVCR INTERNAL GRANT DEADLINES

IUPUI Arts and Humanities Internal Grant (IAHI):

The IAHI Grant Program supports 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 program is intended to stimulate existing and new research and creative activity and to support faculty in becoming competitive in securing external funding and sponsorship. The next IAHI application deadline is October 1. Apply to this program through the [InfoReady portal](#). Download the Guidelines and Application. Applications are to be submitted as one pdf file.

Research Support Funds Grant (RSFG):

The Research Support Funds Grant (RSFG) program is designed to enhance the research mission of IUPUI by supporting research projects and scholarly activities that are sustainable through external funding. The next RSFG application deadline is October 15. Apply to this program through the [InfoReady portal](#). Download the Guidelines and Application. Applications are to be submitted as one pdf file.

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 1. Apply to this program through the [InfoReady portal](#). Download the Guidelines and Application. Applications are to be submitted as one pdf file.

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OVCR EVENTS AND WORKSHOPS

Focus on the National Institutes of Health (NIH)

Target Audience: IUPUI and IUPUC faculty, postdoctoral fellows, and graduate students

Thursday, October 5, 2017

1:00pm – 3:00pm

University Library, Room 1126

This presentation focuses on grant applications to the National Institutes of Health. Topics we will discuss include becoming familiar with the funding agency (e.g., understanding the agency mission, infrastructure), understanding the different types of mechanisms (e.g., R01, P01, T, K, F), finding funding opportunities (e.g., how to navigate an FOA to identify all elements required for submission), fundamentals of the NIH grants process (e.g., key resources and website), understanding the components of the grant application, basic budget construction, the submission process (e.g., ASSIST & the grants package), and the review process. Participants are welcome to bring a lunch to the session.

[Click here to register](#)

Multi-Investigator Complex Proposals Multi-Investigator Complex Proposals

Target Audience: IUPUI and IUPUC senior faculty with previous or current external funding, Signature Center directors

Thursday, October 19, 2017

4:00pm - 5:30pm

University Library, Room 1126

The current funding environment favors large, complex, multi-institutional, multi-investigator projects. However, organizing a successful submission takes a great deal of planning and teamwork. This session will focus on exploring the distinctions between “standard” and “complex” submissions, navigating through issues of building and organizing the research team, intra- and inter-institutional collaboration, and preparing a successful proposal. Participants will also find out what assistance is available from the staff of Proposal Development Services in the Office of the Vice Chancellor for Research. Food and drink

are allowed in the session venue. (Limited to 20 registrants.)

[Click here to register](#)

Nine Golden Rules to Succeed in Research and Scholarship

Target Audience: faculty

Friday, October 27, 2017

2:30pm – 4:30pm

University Library, Room 1126

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 the information of interest as well.

[Click here to register](#)

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OTHER EVENTS AND WORKSHOPS

Indiana Alzheimer Disease Center research symposium is Oct. 5

The Indiana Alzheimer Disease Center 2017 Fall Research Symposium will be held from 8 am-4:30 pm, Thursday, Oct. 5, at the IU Health Neuroscience Center, Goodman Hall Auditorium, 355 West 16th St., in downtown Indianapolis. [Registration](#) is now open.

Attendees are invited to submit abstracts highlighting their research related to the symposium theme, which is Get In: Gene Environment Interaction. Up to 20 abstracts will be selected for poster presentations during the symposium. Email a 250-word abstract to iadc@iu.edu by Friday, Sept. 22.

Effective Conference Posters

Image of Effective Conference Posters



Effective Conference Posters

This lecture will provide practical information on how to create an effective research poster. Topics discussed will include how to select appropriate text and images and how to optimize a poster's layout to reveal a study's outcomes. Dinner will be served from 5:15 p.m. - 5:30 p.m., and the presentation will begin promptly at 5:30 p.m.

Tuesday, October 10

5:15 p.m. - 7:00 p.m.

[Register here](#)

Steven C. Beering Award Lecture

Image of Steven C. Beering Award Lecture

Steven C. Beering Award Lecture

Please join us for the 2017 Steven C. Beering Award Lecture. The winner is Michael J. Welsh, M.D., Director, Pappajohn Biomedical Institute, Professor of Internal Medicine - Pulmonary, Critical Care and Occupational Medicine, Professor of Molecular Physiology and Biophysics, and Professor of Neurosurgery at Carver College of Medicine. Seven of the past Beering Award recipients have become Nobel laureates, either before or after receipt of this award.

Wednesday, October 11

9:30 a.m. - 10:45 a.m.

Walther Hall (R3) 203

Register here

Conveying Messages with Graphs

Wednesday, October 11

8:00 a.m. - 9:30 a.m.

Register here

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RECENT EXTERNAL FUNDING AWARDS

Grants and Awards – August 2017

PI	Agency	Project Title	School	Department	Total
Molitoris, Bruce A.	NATIONAL INSTITUTE OF DIABETES, DIGESTIVE & KIDNEY	Center for Advanced Renal Microscopic Analysis.	MEDICINE	NEPHROLOGY	\$5,853,490
Yamamoto, Bryan K	NATIONAL INSTITUTE ON DRUG ABUSE	Methamphetamine-Alcohol Interactions and Mechanisms of Augmented Toxicity to Brain and Peripheral Organs	MEDICINE	PHARMACOLOGY & TOXICOLOGY	\$2,533,900

Molitoris, Bruce A.	NATIONAL INSTITUTE OF DIABETES, DIGESTIVE & KIDNEY	Proximal Tubule Albumin Transport in Disease States.	MEDICINE	NEPHROLOGY	\$2,322,342
Merritt, Breanca	UNITED WAY OF CENTRAL INDIANA	Social Innovation Fund Project Evaluation	SPEA	PUBLIC & ENVIRONMENTAL AFFAIRS	\$2,146,331
Ding, Zheng-Ming	NATIONAL INSTITUTE ON DRUG ABUSE	Role of Cotinine in Nicotine Use Disorders	MEDICINE	PSYCHIATRY	\$1,771,875
Nalepa, Grzegorz	NATIONAL HEART, LUNG AND BLOOD INSTITUTE	Mitotic failure in Fanconi anemia: mechanisms and role in carcinogenesis	MEDICINE	PED-HEME/ONC BASIC RESEARCH	\$1,560,000
Pang, Peter S	AGENCY FOR HEALTHCARE RESEARCH AND QUALITY	Using Short Stay Units (SSU) Instead of Routine Admission to Improve Patient Centered Health Outcomes for Acute Heart Failure (AHF) Patients.	MEDICINE	EMERGENCY MEDICINE	\$1,495,531
Desfa, Zeruesenay	NATIONAL INSTITUTE OF GENERAL MEDICAL SCIENCES	Mechanisms Underlying Stereoselective Bupropion Metabolism and Complex Drug Interactions.	MEDICINE	CLINICAL PHARMACOLOGY	\$1,456,069

Johnson, Kathy Elizabeth	NATIONAL SCIENCE FOUNDATION	Institutional Transformation: Enhancing IUPUI STEM Curriculum through the Community-Engaged Learning and Ethical Reflection Framework (I-CELER)	ACADEMIC AFFAIRS	STEM EDUCATION INNOVATION RESEARCH INSTITUTE	\$588,561
Yoon, Ayoung	INSTITUTE OF MUSEUM AND LIBRARY SERVICES	Data Reuse for Local Community	INFORMATICS	LIBRARY & INFORMATION SCIENCE	\$355,816
Ott, Mary A.	THE ROBERT WOOD JOHNSON FOUNDATION	Applying Developmental Neuroscience to Incarcerated Adolescents (AD-In)	MEDICINE	PED-ADOLESCENT MEDICINE	\$350,000
Foroud, Tatiana M	MICHAEL J FOX FOUNDATION FOR PARKINSONS RESEARCH	Parkinson's Progression Markers Initiative (PPMI) Pathology Core	MEDICINE	MEDICAL & MOLECULAR GENETICS	\$332,633
Dixon, Brian Edward	AGENCY FOR HEALTHCARE RESEARCH AND QUALITY	Exploring the Utilization of and Outcomes from Health Information Exchange in Emergency Settings	PUBLIC HEALTH	EPIDEMIOLOGY	\$296,587

Huffman, Max	AMERICAN BAR ASSOCIATION	Pathway to the Profession	LAW	LAW	\$250,000
Storniolo, Anna Maria V	THE BREAST CANCER RESEARCH FOUNDATION	Molecular profiles of breast tissue from women at high risk of breast cancer	MEDICINE	HEMATOLOGY/ONCOLOGY	\$250,000
Evans-Molina, Carmella	JDRF	Biomarkers of Beta Cell Stress and Death in Type 1 Diabetes	MEDICINE	ENDOCRINOLOGY	\$249,199
Pang, Peter S	AMERICAN HEART ASSOCIATION INCORPORATED	Lung Ultrasound Driven Strategy-of-Care To Treat Pulmonary Congestion in Patients with AHF	MEDICINE	EMERGENCY MEDICINE	\$224,997
			MEDICINE		
Tillema, Erik	UNIVERSITY OF GEORGIA	Generalization Across Multiple Mathematical Areas (GAMMA)	EDUCATION	EDUCATION	\$215,000
White, Fletcher A	INDIANA STATE DEPARTMENT OF HEALTH	Control of post-concussion symptology in an animal model of repeated traumatic brain injury using electroacupuncture	MEDICINE	ANESTHESIA	\$160,000

Lahm, Tim	AMERICAN HEART ASSOCIATION INCORPORATED	Estrogen receptor- alpha effects on right ventricular vascular density and angiogenesis in pulmonary hypertension	MEDICINE	PULMONARY	\$154,000
Curtis, Edward E	NATIONAL ENDOWMENT FOR THE HUMANITIES	Muslim American History and Life	LIBERAL ARTS	RELIGIOUS STUDIES	\$108,800
Klacik, J. Drew	INDIANA GAMING COMMISSION	2017 Disparity Report for the Indiana Gaming Commission	PUBLIC & ENVIRONMENTAL AFFAIRS	PUBLIC & ENVIRONMENTAL AFFAIRS	\$102,210
Pang, Peter S	WAYNE STATE UNIVERSITY	Acute Heart Failure. Non- Invasive Hemodynamics of Acute Heart Failure in the Emergency Department Utilizing ClearSight System	MEDICINE	EMERGENCY MEDICINE	\$100,000
Shahda, Safi	INDIANA UNIVERSITY HEALTH	The Effect of Cancer Cachexia on Pharmacokinetics and Toxicity in Patients with Pancreatic Cancer Receiving Chemotherapy	MEDICINE	HEMATOLOGY/ONCOLOGY	\$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.

ALZHEIMER'S ASSOCIATION

International Research Grant Program: This opportunity aims to fund investigators who are >10 years past their doctoral or post residency (MD or DO) or investigators that are new to Alzheimer's and related dementia field of research even if past the 10 years.

The purpose of this program is to provide newly independent investigators with funding that will allow them to develop preliminary or pilot data, to test procedures and to develop hypotheses. The intent is to support early-career development that will lay the groundwork for future research grant applications to the NIH, NSF and other funding agencies, including future proposals to the Alzheimer's Association. All applications must target defined 2017 areas of focus to be considered responsive.

1. Research in Diverse Populations: Closing the Gap - The Association has concluded that there are significant information and data deficits about ethnic and cultural groups in most major Alzheimer's research areas. These include screening & neuropsychological testing instruments; diagnostic procedures; recruitment/retention in research protocols & clinical trials; clinical & neuropathological correlative studies; caregiving & family studies; basic laboratory investigations; genetics projects; development of new models of long-term care and management of these services; epidemiological & health services; and the economics of care. To fill these gaps in knowledge, projects must address the following issues: 1) Socioeconomic status, 2) Values & Beliefs, 3) Role of the Family & Community, 4) Geographical & regional variation, and 5) Interactions among factors.

2. Social and behavioral research - has the potential to increase our understanding of the effects of Alzheimer's and other dementias on individuals with the disease, their families and other caregivers. It can also increase our knowledge about interventions that improve care practices, health, functional and

emotional outcomes and quality of life, as well as prevent or reduce symptoms for millions of individuals and their families.

A wide range of questions in the social and behavioral arenas are applicable for research. Each investigator is encouraged to tailor his or her question to particular populations: 1) Person with dementia, 2) Physical and social environment, 3) Family and household, 4) Identification and evaluation of services and interventions, 5) Health policy, 6) Behavioral modifications to help maintain cognitive function, 7) Implementation and dissemination of knowledge, and 8) Cognitive/functional focus

3. Biological Focus - Causes, Early Detection, Treatment, Models, Prevention, and Risk Factors. Some of the many challenges that remain for investigators to address include:

- *Cause(s) of the Disease*: How and why do specific sets of neurons in select brain structures become dysfunctional? Why is there selective neuronal death in specific brain regions and not in others? What initiates these processes? What is the key step in the cascade of events leading to cell death? How do genetic factors interact with other factors to influence these processes?

- *Early and Accurate Detection and Diagnosis*: What are the most sensitive, specific and cost-effective diagnostic procedures? What are the most sensitive, specific and cost-effective procedures for assessing change through the course of the disease?

- *Treatment*: What are the most effective and safe pharmacological treatment strategies, behavioral management techniques, and combinations of therapies?

- *Risk Factors*: What are the characteristics, either genetic or acquired, that increase the risk of Alzheimer's disease or offer protection against or delay the onset? How do the risk factors vary among specific diverse populations? Are any risk factors modifiable?

Deadlines: Letter of Intent: Oct. 09, 2017; Application: Nov. 28, 2017

http://www.alz.org/research/alzheimers_grants/types_of_grants.asp

NATIONAL INSTITUTES OF HEALTH

Approaches to Identify & Care for Individuals with Inherited Cancer Syndromes (UO1): This opportunity is associated with the Beau Biden Cancer Moonshot Initiative that is intended to accelerate cancer research. Its purpose is to increase case ascertainment and optimize delivery of evidence-based healthcare for individuals at high risk of cancer due to an inherited genetic susceptibility. Specifically, the following area designated as a scientific priority by the Blue Ribbon Panel's Recommendation E: "To realize the potential of cancer prevention and early detection in our nation, NCI should sponsor an initiative to improve the current state of early detection, genetic testing, genetic counseling, and knowledge landscape of the mechanisms and biomarkers associated with cancer development. This initiative should include demonstration projects that will show how cancer screening programs can simultaneously save lives, improve quality of life, and reduce healthcare costs." This opportunity invites UO1 application for projects aimed at identifying best practices to improve case ascertainment of hereditary cancers, with the goal of improving prevention and detection.

Deadline: Letter of Intent: Dec. 9, 2017; Application: Jan. 09, 2018

<https://www.grants.gov/custom/viewOppDetails.jsp?oppId=297017>

Centers of Excellence in Genomic Science (CEGS) (RM1): The CEGS program establishes academic Centers for advanced genome research. Each CEGS grant supports a multi-investigator, interdisciplinary team to develop innovative genomic approaches to address a particular biomedical problem. A CEGS project will address a critical issue in genomic science or genomic medicine, proposing a solution that would be a very substantial advance. Thus, the research conducted at these Centers will entail substantial risk, balanced by outstanding scientific and management plans and very high potential payoff. A CEGS will focus on the development of novel technological or computational methods for the production or analysis of comprehensive data sets, or on a particular genome-scale biomedical problem, or on other ways to develop and use genomic approaches for understanding biological systems and/or significantly furthering the application of genomic knowledge, data and methods towards clinical applications. Exploiting its outstanding scientific plan and team, each CEGS will nurture genomic science at its institution by facilitating the interaction of investigators from different disciplines, and by providing training to new and experienced investigators, it will expand the pool of highly-qualified professional genomics scientists and engineers.

Deadline: Deadlines: Letter of Intent: April 09, 2018; Application: May 21, 2018

<https://www.grants.gov/custom/viewOppDetails.jsp?oppId=296528>

NATIONAL SCIENCE FOUNDATION

Advanced Power Electronics Design for Solar Applications: This opportunity will fund research that can enable significant reductions in the lifetime costs of power electronics (PE) for solar photovoltaic (PV) energy that align with meeting the *SunShot 2030 goals*, and likewise enable versatile control functionalities to support grid integration of solar PV for enhanced grid services. Compared to the state-of-the-art, the SunShot Initiative seeks to fund early-stage solar PE research projects to enable the following objectives:

- 1) Lower the lifetime cost of residential, commercial & utility-scale solar PV inverter/converter solutions; and
- 2) Develop innovative modular, multi-purpose solar PV power electronics designs that offer enhanced services for improved lifetime value and lower grid integration costs.

Deadline: Concept paper: Oct. 12, 2017; Application: Dec. 15, 2017

<https://www.grants.gov/custom/viewOppDetails.jsp?oppId=297217>

Cyber-Physical Systems (CPS): The goal of the CPS program is to develop the core system science needed to engineer complex cyber-physical systems that people can use or interact with and depend upon. Some of these may require high-confidence or provable behaviors. The program aims to foster a research community committed to advancing research and education in CPS and to transitioning CPS science and

technology into engineering practice. By abstracting from the particulars of specific systems and application domains, the CPS program seeks to reveal cross-cutting fundamental scientific and engineering principles that underpin the integration of cyber and physical elements across all application sectors. To expedite and accelerate the realization of cyber-physical systems in a wide range of applications, the CPS program also supports the development of methods, tools, and hardware and software components based upon these cross-cutting principles, along with validation of the principles via prototypes and testbeds.

Three classes of research and education projects--differing in scope and goals--will be considered through this solicitation:

- 1) *Breakthrough projects* must offer a significant advance in fundamental CPS science, engineering and/or technology that has the potential to change the field. This category focuses on new approaches to bridge computing, communication, and control;
- 2) *Synergy projects* must demonstrate innovation at the intersection of multiple disciplines, to accomplish a clear goal that requires an integrated perspective spanning the disciplines; and
- 3) *Frontier projects* must address clearly identified critical CPS challenges that cannot be achieved by a set of smaller projects.

Deadline: March 06, 2018

http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=503286

PCORI (Patient-Centered Research Outcomes Institute)

Communication & Dissemination Research: The Communication and Dissemination Research Program at PCORI invites applications that study the comparative effectiveness of communication and dissemination strategies. The program is looking for strategies aimed at informing and empowering patients, caregivers, and other healthcare decision makers so that they know what questions to ask and have the information needed to provide support in shared decision making.

This opportunity seeks applications that include: 1) The direct comparison of two or more health communication and dissemination interventions or strategies, each of which has established efficacy or is in widespread use; 2) Research conducted in real-world, clinical care settings and situations; and 3) Proposed research questions and health outcomes that will matter to the patient population, their caregivers, and family members under study, and that will help to guide their healthcare decisions

Research appropriate for this opportunity includes: 1) Communication strategies to promote the use of health and healthcare *clinical effectiveness research* (CER) evidence by patients and clinicians; 2) Dissemination strategies to promote the use of health & healthcare CER evidence by patients and clinicians; and 3) Explanation of uncertain health and healthcare CER evidence to patients and clinicians.

PCORI is interested in understanding the role of shared decision making and established, effective decision aids in communicating and implementing PCOR/CER. *Applications focused on developing,*

testing (establishing efficacy), and validating individual decision aids and tools will be considered nonresponsive.

Deadline: Letter of Intent: Oct. 31, 2017; Application: Feb. 06, 2018

<http://www.pcori.org/funding-opportunities/announcement/communication-and-dissemination-research-cycle-3-2017>

U.S. DEPT. OF DEFENSE

Psychological Health/Traumatic Brain Injury Research Program (PH/TBIRP):

Complex Traumatic Brain Injury Rehabilitation Research Clinical Trial Award This opportunity is intended to support clinical trials focused on TBI rehabilitation interventions in the areas of cognitive and vestibular rehabilitation. Research focusing on rehabilitation strategies in patients with mild TBI is highly encouraged. Applications must be responsive to one or both of the following two Focus Areas:

Cognitive Rehabilitation: Cognitive rehabilitation-focused clinical trials should generate new knowledge to confirm whether novel or standard-of-care rehabilitation interventions are effective in remediating cognitive impairments (e.g., memory, processing speed, executive functioning) and functional limitations after TBI. Investigators are encouraged to pursue pragmatic trial designs that compare both novel and standard-of-care cognitive rehabilitation practices, include diverse populations of study participants, recruit patients from heterogeneous practice settings, and collect data across a broad range of functioning including standard-of-care DoD outcome measures. Applications are encouraged to address one or more of the following elements: optimal cognitive rehabilitation prescription patterns (to include frequency, intensity, time, and type); optimization of combination therapies to produce synergistic treatment effects across multiple domains; identification of patient characteristics presumed to affect outcomes and/or effectiveness of therapies.

Vestibular Rehabilitation and Mechanisms of Recovery: Vestibular rehabilitation-focused clinical trials should generate new knowledge to remediate symptoms (e.g., dizziness, vertigo, motion intolerance), impairments (e.g., gaze, postural and dynamic instability), functional limitations, and barriers to participation (e.g., readiness to return to duty) associated with post-traumatic dizziness and/or vestibular pathology in patients with TBI. Applications should include a plan to collect data across a broad range of functional outcomes including standard-of-care DoD outcome measures. Applications are encouraged to include one or more aims that objectively characterize neurologic mechanisms of recovery associated with novel and/or standard-of-care vestibular rehabilitation interventions; include data obtained in a sample of active duty military personnel, and advance understanding of rehabilitation prescription.

Deadline: Letter of Intent: Oct. 06, 2017; Application: Jan. 09, 2018

<https://www.grants.gov/custom/viewOppDetails.jsp?oppId=297139>

Orthotics & Prosthetics Outcomes Research Program (OPORP)-Prosthetics Outcomes Research Award: All applications must address at least one of the following Focus Areas. Studies that propose development

of new technology or improvement of existing technology are not allowed according to congressional intent. Animal studies are not allowed under this award mechanism.

1. Orthotic or Prosthetic Device Form: Analysis of variables related to currently available clinical options such as device size, shape, material, and configuration.
2. Orthotic or Prosthetic Device Fit: Analysis of currently available clinical options that facilitate device fit-related characteristics such as comfort and usability through variables such as human-device interface and component connection.
3. Orthotic or Prosthetic Device Function: Analysis of the variables related to currently available clinical options such as device control, passive response, active/actuated response, power, sensors, overall performance with respect to activities of daily living and other real-world activities.

The following are generalized descriptions of the scope of research appropriate for each Funding Level: *Funding Level 1-New Investigator* is for new investigators only, and may support pilot research without preliminary data or research that is already supported by preliminary data and has the potential to make significant advancements toward clinical translation.

Funding Level 2: Research that is supported by preliminary data and has the potential to make significant advancements toward clinical translation.

Deadline: Jan. 08, 2018

<https://www.grants.gov/custom/viewOppDetails.jsp?oppId=297071>

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 2 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 2 page summaries. For more information, contact Steven Chin schin@iupui.edu.

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