

Research Enterprise

July 18, 2013

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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Editor:

Etta Ward

Layout:

Erik Scull

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.

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FEATURE STORIES

Two IUPUI Research Centers Receive Signature Center Designation

Indiana University-Purdue University Indianapolis has selected the [Research in Palliative and End-of-Life Communication and Training \(RESPECT\) Center](#) and the [Institute for American Thought](#) to receive IUPUI Signature Center designation. This distinguished recognition is based on the centers' achievements during three-year funding under the Signature Centers Initiative Grant Program.

"The formal designation of the RESPECT Center and the Institute for American Thought as IUPUI Signature Centers is well-earned by the internationally recognized work of the faculty and staff," Chancellor Charles R. Bantz said. "The two centers together illustrate the range of scholarship at IUPUI -- from translating research into practice for one of the most challenging times in a person's life to leading literary and philosophical scholarship."



RESPECT Co-Directors Dr. Greg Sachs, Dr. Joan Haase, and Dr. Susan Hickman

Ten centers and institutes have received official Signature Center designation since the initiative grant program's inception in 2006.

"The Signature Centers Initiative has become a key cornerstone of the IUPUI research enterprise, playing an important role in enhancing research and scholarly activity, while fostering the development of research centers that are bringing national and international recognition and visibility," said Dr. Kody Varahramyan, IUPUI Vice Chancellor for Research.

Researchers at the RESPECT Center successfully brought in over \$22 million in funding to support research to grow the knowledge base around communication about palliative and end-of-life care, according to Susan Hickman, Ph.D., of the

School of Nursing, a co-director of the newly designated signature center.

The RESPECT Center hosted a statewide conference in March that focused on evidence-based palliative and end-of-life care, attracting 145 professionals from across the state. A second conference is planned for March 2014.

The RESPECT Center also provided support for the Indiana Patient Preferences Coalition, which led to the passage of the Indiana Physician Orders for Scope of Treatment Act, which took effect July 1. This communication tool documents patient preferences in the form of physician orders.

"Achieving Signature designation is an honor that is [both] a recognition of the work of RESPECT Center investigators and the importance of this topic," Dr. Hickman said. "Researchers on the IUPUI campus are committed to improving the care of seriously ill patients and their families through evidence-based approaches. We are extremely honored to support investigators in honoring that commitment."



Marianne S. Wokeck, PhD.

The [Institute for American Thought](#), part of the School of Liberal Arts, is home to five scholarly editions publishing critical, authoritative texts of three American philosophers, Charles Peirce, Josiah Royce and George Santayana; former slave and abolitionist Frederick Douglass; and American fantasy writer Ray Bradbury. The institute preserves, researches and publishes the papers and works for these scholarly editions, all of which have a global audience and international reputations. The institute also sponsors two academic programs: American Studies and a graduate certificate in Professional Editing.

"The funding provided through the Signature Centers Initiative allowed the institute to pursue the development of a content management system, which can be used by critical editions like those being done here at IUPUI," said Dr. David E. Pfeifer, an original Signature Centers Initiative funding awardee and former Institute of American Thought director.

"This funding prepared the ground for receiving a National Endowment for the Humanities digital humanities start-up grant," he said. "The application, called STEP for Scholarly Text Editing Platform, is being tested within the Peirce Edition and will be presented this fall to NEH, who will release the open-access platform to the public for its adaptation and use."

The dissemination platform will become an online resource within which scholars can comment on the texts, the editing of the texts and the work of each other. It will benefit text editors in Indiana and the nation, said Dr. Marianne S. Wokeck, who became the director of the Institute for American Thought on July 1.

"The significance of this work is that it makes editing transparent and collaborative; all the editors of a text can review all the work online at any time and track the changes being made," said Dr. Wokeck, also Chancellor's Professor of History and former School of Liberal Arts associate dean for academic affairs.



David E. Pfeifer, Ph.D.

According to Dr. Pfeifer, this content management development is but one aspect of the work of the Institute for American Thought. The library and archival resources associated with the editions and housed in the institute attract visiting researchers

from across the nation and around the globe.

Two New Centers Selected for Signature Centers Initiative Funding

Two new centers have been selected out of a pool of seven applications to receive 3-year funding under the Signature Centers Initiative Grant Program. These centers are:

Center for Cancer Population Analytics and Patient-Centered Informatics:

The mission of the Center for Cancer Population Analytics and Patient-Centered Informatics is to develop team science that combines innovative health information technologies with rigorous health services research methods in order to create knowledge that will have an impact upon the health and health care of patients and populations with cancer in the state of Indiana and the U.S. The Center has two primary goals: 1) build collaborative, multidisciplinary scientific teams to create national leaders in the state of Indiana in the fields of cancer health services research and informatics, and 2) perform top-tier national cancer health services research and "big data" analytics to improve the quality, efficiency, coordination, and outcomes of cancer care.

Center for the Cure of Glioblastoma: The overall mission of the Center for the Cure of Glioblastoma is to find a cure for glioblastoma multiforme (GBM). The Center has four primary goals: 1) interrogate the molecular mechanisms of glioma biology and develop interventions that result in improved duration and quality of life for patients, 2) stimulate consistent and productive exchange of ideas between clinicians and basic scientists while employing bench-to-bedside and bedside-to-bench strategies to generate and prioritize scientific questions, 3) provide infrastructure and mentorship needed to successfully receive external support, and 4) engage the community through patient advocacy to positively impact brain cancer patient outcomes and enhance philanthropic initiatives.

ANNOUNCEMENTS

School of Medicine Research Leader to Head Robert Wood Johnson Diversity Initiative

Dr. David S. Wilkes, School of Medicine, has been selected by the [Robert Wood Johnson Foundation](#) to serve as the new director of the foundation's program to encourage diversity in medical and dental school faculties.

Dr. Wilkes, who will remain executive associate dean for research affairs at the School of Medicine, will be just the third leader of the 30-year-old [Harold Amos Medical Faculty Development Program](#), foundation officials announced recently.

Dr. Wilkes succeeds James R. Gavin III, M.D., Ph.D., who has served as director of the program since 1993. The Harold Amos Medical Faculty Development Program has supported the efforts of more than 200 physicians and dentists from disadvantaged backgrounds to become leaders in academic



David S. Wilkes, M.D.

medicine.

The program provides mentoring along with four-year research awards of \$420,000 to young faculty and postdoctoral fellows selected from a nationally competitive pool of candidates. Alumni of the program, who included Dr. Wilkes, have risen to numerous leadership positions in academic medicine across the country, including three directors of institutes within the National Institutes of Health.

"I'm honored to be selected to lead this program and will work to continue the invaluable leadership of Dr. Gavin," said Dr. Wilkes, August M. Watanabe Professor of Medical Research at the IU School of Medicine.

"This program is a key resource in ensuring that the ranks of top academic researchers and leaders include talented people from all backgrounds -- diversity that strengthens all of their institutions," Dr. Wilkes said.

"We are pleased that the Robert Wood Johnson Foundation has placed its confidence in David Wilkes and the IU School of Medicine to provide the leadership and administration for this important program," said D. Craig Brater, M.D., former dean of the School of Medicine.

"The Harold Amos program supports our commitment to a health profession that reflects the patient population it serves," Dr. Brater said.

Dr. Wilkes is a pulmonologist whose research focuses on the immunobiology of lung transplants. He is founder and scientific director of ImmuneWorks Inc., an Indianapolis life sciences startup company.

The administrative headquarters of the Harold Amos Medical Faculty Development Program has been at the School of Medicine since July 2007.

Two IU School of Medicine Faculty Honored at World Congress of Nephrology

Two IU School of Medicine faculty were among seven established kidney researchers honored at the International Society of Nephrology World Congress of Nephrology May 31 to June 4 in Hong Kong.

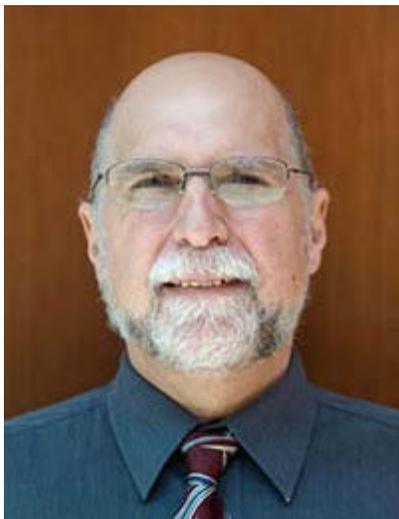
[Bruce A. Molitoris](#), M.D., professor of medicine and medical director for the Indiana Center for Biological Microscopy, received the [International Society of Nephrology](#) Bywaters Award, which recognizes outstanding contributions to the understanding of acute renal failure. The biannual award honors its recipients for lifetime achievement in the field. Dr. Molitoris, whose research interests include acute kidney injury from ischemia, sepsis and nephrotoxins, uses two-photon microscopy to study the cellular processes involved within the kidney.

His research in the field of acute kidney injury has been instrumental in understanding how the cells in the kidney respond to low blood flow and other toxins. Acute renal failure, where the kidneys suddenly quit working, occurs in about 20 percent of hospitalized patients and is estimated to cost the health care system \$10 billion annually. Hospitalized patients who get acute kidney injury have a 60 percent chance of dying. For those who survive, the length of stay in the hospital is longer, and they are more likely to develop long-term kidney problems with a greater risk of needing dialysis or transplantation in the future.



Bruce A. Molitoris, M.D.

Dr. Molitoris was the director of the [IU School of Medicine Division of Nephrology](#) from 1993 to 2011. He has been the principal investigator at the [Indiana O'Brien Center](#), one of nine National Institutes of Health-funded centers to specifically study kidney disease. The O'Brien Center has been instrumental in building the [Indiana Center for Biological Microscopy](#). Its state-of-the-art imaging has allowed investigators from around the world to visualize real-time changes in the kidneys of living animals.



Vincent H. Gattone, Ph.D.

IU School of Medicine professor of anatomy and cell biology [Vincent H. Gattone](#), Ph.D., shared the Lillian Jean Kaplan International Prize with a researcher from Leiden University Medical Center in The Netherlands. Dr. Gattone is a leader in the field of kidney pathology and renal cystic disease research.

For more than 30 years, he has studied the processes that occur in [polycystic kidney disease](#), the leading genetic cause of kidney failure in the world. People with the disease lose kidney function as the kidney is gradually replaced with large fluid-filled cysts.

Dr. Gattone, who is an adjunct professor in the Division of Nephrology, has developed multiple animal models for the study of polycystic kidney disease and has discovered unique pathways for its treatment. One of these pathways has led to research demonstrating that tolvaptan slows progression of cyst formation. This drug has led to studies in humans demonstrating similar findings. This is the first drug ever shown to slow progression of polycystic kidney disease and is currently under review by the FDA.

The Kaplan prize was created in 2002 and recognizes a medical researcher or clinician who has increased biomedical understanding of polycystic kidney disease. The award, which is presented every other year at the World Congress of Nephrology, carries a \$50,000 prize and is one of the most significant awards in the medical research field.

Career Development Institute

On Friday, June 21, 2013, the Center for Research and Learning (CRL) presented the annual Career Development Institute for its Summer Undergraduate Research Programs. This seminar was created to educate students about the opportunities available after their undergraduate studies and how to achieve them.

The Career Development Institute consisted of five workshops (Successful Interviewing, Personal & Professional Branding, Professional Image & Attire, Preparing for Graduate School, and Preparing for Medical School) and a panel of graduate students that discussed the benefits and challenges of graduate school. This year the Career Development Institute was held in University Tower, CRL's new home.



Graduate Panelist: Tamica Collins (School of Medicine), Peter Corridon (School of Medicine), Michelle Like (School of Public and Environmental Affairs), Jeyanthi Bhaheetharan (School of Public Health) and Clayton Crumell (School of Journalism)

MURI scholar Sejal Vagel:

"I didn't really think about Medical School until she (Dr. Karen Smartt) started

talking about it, so it gave me more input on where I want to go. Graduate panelists talked about how you don't have to go directly to graduate school after completing your undergrad, you can take some time off." Sejal also stated, "It was fun, I learned a lot that I didn't know about."

URM scholar Aime Idahosa:

"It was really good general information to get me started. I went to the medical school workshop earlier, and it helped me prepare for what I need to work on now to better prepare me for when I apply for grad school next."

UROP scholar Latasha Mance:

"I didn't know that there were so many things that people can do once they got out as far as graduate degree programs went. Even the financial side of it, they (graduate panel) say they get stipends and different grants. A lot of students don't understand that school can be paid for by loans and other resources, so people won't continue on with their studies."

School of Medicine Awarded National AMA Grant to Advance Medical Education

Indiana University School of Medicine students will develop critical competencies in systems- and team-based care through immersion in a virtual health care system curriculum with support from a \$1 million grant from the American Medical Association.

IU is one of just 11 medical schools in the country – out of 119 that prepared initial proposals -- to receive the grant as a part of the AMA's Accelerating Change in Medical Education initiative. The initiative was created to fund innovative programs designed to transform medical student education, preparing students for practice in a changing care delivery system.



Indiana University School of Medicine - Indianapolis campus

The novel IU School of Medicine virtual health system curriculum will use a teaching version of an electronic medical record that incorporates actual patient data -- with identifying information removed. The virtual health system will provide medical students with a realistic environment to develop their clinical decision-making skills while providing care for a panel of "e-patients." Students will monitor health care decisions and costs, compare their decisions to those of practicing physicians and to their peers, and learn how huge quantities of data and genomic information are changing the way health care is delivered.

"We are honored to receive this prestigious award from the AMA and to be an integral part of a learning consortium that will develop and disseminate best practices in medical education. This project is an important part of the comprehensive revision of our curriculum, designed to better prepare our students to improve the health of patients and of their communities," said Maryellen E. Gusic, M.D., executive associate dean for educational affairs.

"It's critical that students learn about how systems of care delivery affect the health of their patients and about how patient and social factors impact both health and disease. The virtual health system curriculum will prepare students to practice patient-centered, high quality and cost-efficient care," said Dr. Gusic, Dolores and John Read Professor of Medical Education and professor of pediatrics.

"The use of a virtual health system curriculum will supplement experiences in actual clinical settings, filling gaps in individual student's experiences and deepening learning about the implications of care decisions on health and disease.

Importantly, this proposal meets our institutional mission to advance health in the state of Indiana and beyond by promoting excellence in education and patient care," said D. Craig Brater, M.D., former dean of the IU School of Medicine.

The IU project will also train faculty from the medical school and from other health care professions as master educators to expertly use the virtual health care curriculum and help students learn about team-based care.

This project will build on the IU School of Medicine's 30 years of experience with the electronic medical records system developed by IU faculty and the Regenstrief Institute, a research organization affiliated with the IU School of Medicine that is acknowledged as a world leader in medical informatics. In addition, clinical and administrative leaders from the School of Medicine's health systems partners will help to train the master educators to teach students about system approaches to patient and population management with a focus on quality and patient safety.

With nearly 1,300 medical students on nine campuses across the state, the IU School of Medicine is the second largest medical school in the country. It was one of the first schools of medicine to implement a nationally-recognized competency-based curriculum and evaluation system more than a decade ago.

FACULTY SPOTLIGHT

Forensic Biologist Discovers New Fly Species in Indiana

The local discovery of a species of fly not native to the Midwest could have significant implications on forensic investigations involving decomposing remains, according to a forensic biology researcher at Indiana University-Purdue University Indianapolis.

Dr. Christine Picard, assistant professor of biology in the School of Science at IUPUI, discovered *Chrysomya megacephala* (Fabricius) during a routine collection of fly samples in late September 2012. Until now, entomologists had never documented the fly farther north than New Mexico.

"Although I only found a single fly of this species, this is an important event in the area of forensics," said Dr. Picard, also a faculty member in the Forensic and Investigative Sciences program at IUPUI. "Because this fly is not typically found here, we don't know how it develops here, how to use that data or how it could affect the precision and accuracy of forensic investigations."

The growth and development of flies play an important role for scientists looking to learn how long a human or animal has been dead. When a new species is introduced, scientists or investigators may be at a disadvantage because of the lack of local data on that species.

C. megacephala breeds in the decomposing flesh of animals or discarded organic materials and has the potential to carry disease. Its existence could have a negative impact on native species of flies as well, changing the dynamics of this highly specialized ecosystem.

"This discovery tells us as researchers that there is a new fly we have to consider, especially when we're processing casework samples," Dr. Picard said.

The fly specimen is stored at the Purdue University Entomological Collection, and it



Christine Picard, Ph.D.

is the only one of its kind in its vast inventory. Dr. Picard's discovery will be published in the July edition of the [Proceedings of the Entomological Society of Washington](#) journal.



This new fly species, *Chrysomya Megacephala*, is not native to Indiana but was found last fall in Indianapolis. Its discovery could impact forensic investigations.

"This particular fly, native to Asia and Africa, first was documented in the United States in 1988. Until now, it had been contained to the southern states, where the warmer climate allows it to grow and breed. The mild winter and long, drought-stricken summer of 2012 in Indiana likely contributed to the fly moving this far north," Dr. Picard said.

As average temperatures continue to increase, Dr. Picard predicts this will not be the last time Indiana sees this fly.

"This fly has the potential to become a dominant fly species in this area," Dr. Picard said. "The changing climate conditions show us that we should never really stop collecting samples. We will be on the lookout this summer for more of this particular fly."

STUDENT SPOTLIGHT

Ph.D. Physics Student Urges Members of Congress to Support Science and Technology Research

Luis Palacio was the only student from Indiana to participate in the 2013 Scientific Research Facility Exhibition, hosted by the House of Representatives' Science and National Labs Caucus and the [National User Facility Organization](#). Through discussion and research presentations, members of Congress and their staff learned of recent advances in areas such as energy, health and innovative technologies.

Palacio, a research assistant in the biophysics lab of Horia Petrache, Ph.D., associate professor of physics, said the experience allowed him to discuss the impact research has had on his education as well as opportunities created through IUPUI's connection to the Oak Ridge National Laboratory in Tennessee, one of the world's foremost facilities for the study of materials.

"Through science research, I've found a way to contribute to problem-solving and discovering new ways of improving our living conditions and our environment," he said.

Palacio researches the structure of proteins. Oak Ridge is home to the Spallation Neutron Source, which provides the most intense pulsed neutron beams in the world for scientific and industrial research and development. The equipment provides researchers with the most detailed look ever into small samples of physical and biological matter. The facility hosts more than 2,000 visiting scientists each year.



Luis Palacio, a Ph.D. physics student, discussed his research with U.S. Rep. Randy Hultgren, R-Ill., at the 2013 Scientific Research Facility Exhibition

"User facilities like those at Oak Ridge are vital resources for our research," said Andy Gavrin, Ph.D., chair of the Department of Physics in the School of Science at IUPUI.



U.S. Rep. Alan Nunnelee, R-Miss., explores a display at the 2013 Scientific Research Facility Exhibition

The June 26 exhibition in Washington, D.C., featured posters and presentations from a wide array of scientists and students. Palacio's past participation in IUPUI's GK-12 Urban Educators Program, which places M.S. or Ph.D. students in creative learning environments in Indianapolis public schools, helped him to translate the applications of his research to an unfamiliar audience, he said.

"I was able to explain my research at different levels and relate its importance to relevant national issues," Palacio said.

"From this experience, one thing was very clear to me," Palacio said. "The legislators want to learn more about successful programs in science. They would like to better understand how discoveries are made, what kind of technologies are being tested and how research is helping to solve issues in health, defense, energy, the environment, communications and more."

TRANSLATIONAL RESEARCH IMPACT

IU researcher earns NIH Grant for First Study of Estrogen Receptor beta as Schizophrenia Treatment

An Indiana University School of Medicine researcher has received \$1.2 million for the first year of a \$3.8 million three-year grant from the National Institutes of Health to study estrogen as a treatment for schizophrenia using an unreleased drug developed by Eli Lilly and Co.

Dr. Alan Breier, Association for the Advancement of Mental Health Research and Education, Inc. and Indiana University Psychiatry Associates Professor of Psychiatry at the [School of Medicine](#), received the [highly competitive grant](#) from a new program at the National Center for Advancing Translational Sciences. The program, [Discovering New Therapeutic Uses for Existing Molecules](#), aims to identify new uses for drugs that have undergone significant research and development by industry, including safety testing in humans.



Alan Breier, M.D.

Indianapolis-based [Eli Lilly and Co.](#) is one of several pharmaceutical companies to [open their database](#) of proprietary drug compounds to the research community for the first time in order to "crowdsource" potential new applications.

Dr. Breier and his IU collaborators will employ a drug candidate that targets an estrogen receptor discovered within the past 10 years that is highly concentrated in the brain, called [estrogen receptor beta](#). The compound mimics some of the actions of the hormone on the body without many of the negative side effects, such as feminization in men and uterine cancer in premenopausal women.

"Estrogen therapy designed to hit only this new estrogen receptor has never been tried in any psychiatric disorder by any research group -- we're talking about a new target, a new mechanism and a new novel molecule," Dr. Breier said. "We're the first because no one else studying psychiatric disorders has had access to highly selective agents for the estrogen receptor beta, which avoids the alpha receptor that causes the common concerning side effects associated with estrogen.

"Industry has traditionally been better equipped than academic medical centers to develop this sort of highly selective drug," he added. "This new NIH grant mechanism brings together the strengths of both academic centers and big pharma."

The average length of time from target discovery to approval of a new drug is more than 13 years, and the failure rate exceeds 95 percent. This failure rate means, however, that many existing partially developed compounds could be advanced to clinical trials more quickly than starting from scratch.

The Eli Lilly compound, which targets the beta receptors and has been safely tested in humans but never released to the market, was originally developed to treat prostate enlargement in men. The estrogen receptor alpha causes the feminine and sexual properties of estrogen.

The compound is seen as a promising treatment for schizophrenia because studies have shown the protective effect of estrogen on the brain and its ability to modulate neurotransmitters thought to cause schizophrenia.

"Women appear to age better from the perspective of central nervous system health," Dr. Breier said. "It's been known for decades that estrogen has neuroprotective properties; it keeps neurons healthy and seems to protect against the symptoms of schizophrenia."

Evidence for the protective effects of estrogen include research that shows women with schizophrenia experience fluctuations of their symptoms with the menstrual cycle and that postmenopausal women who are no longer producing estrogen experience an exacerbation of their symptoms.

Women also exhibit less severe forms of schizophrenia and develop the disease later in life, in comparison to men. Both sexes are diagnosed with the disease at an equal rate, however, with about 1 percent of the adult population experiencing symptoms.

The IU study will target the two areas of schizophrenia for which there are currently no drug treatments: cognitive symptoms, such as the inability to think clearly or store and retrieve information; and the negative symptoms, such as a lack of emotion and social involvement.

"There are currently no drug treatments for those two syndromes despite the fact they're so important to day-to-day functioning," Dr. Breier said. "The compounds on the market only target psychosis, including paranoid delusions and hearing voices, for which they're moderately effective. There's a tremendous amount of need for new drugs."

The study, which has received approval from U.S. Food and Drug Administration, aims to enroll 90 participants, including two who have already begun the study. Patients will be enrolled through the [IU Psychotic Disorders Program](#), directed by Dr. Breier, which operates clinics at [Wishard Hospital](#) and [Larue D. Carter Memorial Hospital](#). Patient outcomes will be tracked based upon validated scales to measure improvement in cognitive functions and negative symptoms.

The study's second year will be dependent upon a successful review of the results following the first 12 months. This review board will include an IU neuropsychologist, biostatistician and pharmacologist as well as representatives

from Eli Lilly, the NIH and an outside consulting group. Dr. Breier's team will receive \$1.2 million for the first year, with the additional funds arriving in the second and third years providing key milestones are met.

Dr. Breier's study is one of only [nine projects](#) to receive support from the new NIH program. Collaborators on the IU project include Anantha Shekhar, M.D., Ph.D., director of the [Indiana Clinical and Translational Sciences Institute](#) and Raymond E. Houk Professor of Psychiatry at the IU School of Medicine; Andrew Saykin, M.D., director of the [IU Center for Neuroimaging](#) and Raymond C. Beeler Professor of Radiology at the IU School of Medicine; and Brian O'Donnell, Ph.D., professor of psychology and brain sciences at IU Bloomington. The Indiana CTSI will also support the project through data management, sample processing and the study design.

Additional pharmaceutical companies participating in the NIH program include AbbVie (formerly Abbott); AstraZeneca; Bristol-Myers Squibb; GlaxoSmithKline; Janssen Research & Development, LLC; Pfizer; and Sanofi.

"I really believe this is a model for the future of how academic centers, such as IU, can collaborate with industry in a way that can advance molecules," Dr. Breier said. "If we hadn't come forward with this proposal, this molecule could still be sitting on the shelf."

The [National Center for Advancing Translational Sciences](#) is a distinctly different entity in the research ecosystem. Rather than targeting a particular disease and fundamental science, NCATS focuses on what is common across diseases and the translational process. The center emphasizes innovation and deliverables, relying on the power of data and new technologies to develop, demonstrate and disseminate improvements in translational science. This funded research project was supported in response to [RFA-TR-12-004](#).

OVCR INTERNAL GRANT DEADLINES

Enhanced Mentoring Program with Opportunities for Ways to Excel in Research (EMPOWER): The Enhanced Mentoring Program with Opportunities for Ways to Excel in Research (EMPOWER) has been developed to support IUPUI faculty who are historically underrepresented and/or excluded populations in their discipline or area of scholarship and historically denied admission to higher education or that discipline, 1) to become successful in sponsored research and scholarly activity, and 2) to achieve significant professional growth and advancement. The program sustains mentorship opportunities through the EMPOWER Grant Program, supporting achievement of excellence in research and scholarly activity, and optimal attainment of academic career goals and objectives. The next EMPOWER application deadline is **September 5, 2013**. For grant guidelines and application forms, go to <http://research.iupui.edu/funding/>.

Funding Opportunities for Research Commercialization and Economic Success (FORCES): The FORCES program is designed to support IUPUI researchers in the successful transformation of their research findings into commercially viable outcomes. The key goals of FORCES are to support: 1) realization of short-term projects that will enhance commercial value of IUPUI intellectual property assets, by facilitating commercialization of inventions, technologies, or other intellectual property derived from existing research projects, and 2) development of research initiatives that show great promise for commercialization of the research outcomes. The next RTR application deadline is **September 15, 2013**. For grant guidelines and application forms, go to <http://research.iupui.edu/funding/>.

OTHER INTERNAL GRANT DEADLINES

IU Health Values Fund Competition Now Open – Proposal Due at Noon, October 14th

Application forms and instructions are now available for the 2014-2016 IU Health Values Fund grants for Medical Research, Medical Education and The Integration of Religious and Spiritual Dimensions to Health Care. Eligible applicants include IU Health Academic Health Center (AHC) employees and/or those with IU Health AHC medical staff privileges. Application requirements vary among the three programs, so please carefully review the full instructions.

Questions regarding only the IU Health Values Fund for **Medical Research** or clinical **Medical Education** grants should be directed to Rob Clark, Grants Specialist, IU Health Grants Administration & Development Office, at 317-962-9653, rclark16@iuhealth.org, or 1812 N. Capitol Ave, Wile Hall, Rm. W 219, Indianapolis, IN 46202.

Questions and all letters of intent (LOI) regarding **The Integration of Religious and Spiritual Dimensions in Health Care** grant program should be directed to Steven Ivy, Ph.D., SVP, Values Ethics, Social Responsibility & Pastoral Services Division (sivy@iuhealth.org) or Tereasa Gillentine, administrative assistant, at 317-962-3591, 317-962-2276 (fax), tgillentin@IUHealth.org, or sent to IU Health, Office of Values, Ethics, Social Responsibility & Pastoral Services, 340 West 10th St., Fairbanks Hall, Suite 6107, Indianapolis, IN 46202.

Instructions, forms, and pre-applications meetings are found on IU Health's PULSE intranet website at <http://pulse.clarian.org/>.

EVENTS AND WORKSHOPS

OVCR Research Orientation

When: Wednesday, August 28, 2013 | 1:00 PM-3:00 PM
Where: University Library, Room 1126

This session will provide an overview of research resources, services and support offered to IUPUI faculty by the Office of the Vice Chancellor for Research. Participants will also meet with some current IUPUI faculty members to hear how they were able to achieve success in the early stages of their tenure at IUPUI.

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

OVCR Research Orientation (Repeat Session)

When: Friday, September 6, 2013 | 10:00 AM-12:00 PM
Where: University Library, 1126

This session will provide an overview of research resources, services and support offered to IUPUI faculty by the Office of the Vice Chancellor for Research. Participants will also meet with some current IUPUI faculty members to hear how they were able to achieve success in the early stages of their tenure at IUPUI.

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

Finding Funding

When: Thursday, September 12, 2013 | 10:00 AM-11:30 AM

Where: University Library, Room 0106

This session will provide an overview of the various types of external funding sources, identify tools to locate funding opportunities, explain how to design a funding search, and demonstrate a couple of knowledge management systems that contain thousands of funding opportunities available by the university subscription. This session is hands-on in a computer lab.

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

Basic Proposal Development

When: Thursday, September 19, 2013 | 11:30 AM-1:00 PM

Where: University Library, Room 1126

This workshop will focus on the basic essentials of building a successful grant proposal for agencies that fund in a variety of disciplines (science, engineering, arts, humanities, and social sciences). A wide-range of topics will be covered from developing a strong foundation for your application to key components of the narrative, the basic budget, writing styles, and 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. You are welcome to bring your lunch.

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

NIH Funding Workshop

When: Friday, September 27, 2013 | 8:00 AM-12:00 PM

Where: Campus Center Theater

How to prepare and submit grant proposals to the National Institutes of Health is the focus for an interactive discussion by representatives of the Office of the Vice Chancellor for Research and the Office of Research Administration. Topics to be covered will include identifying the "right" category and best time to apply, what excellent proposals contain, resources available within the University to support proposal development, and an intensive look at the peer review process. Highlighting the event is a panel discussion by current and previous NIH awardees and study section participants who will provide an in-depth look into the review process.

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

OTHER EVENTS AND WORKSHOPS

Kuali Coeus (KC) Compliance Training Sessions

KC IRB training for the Research Community is scheduled to begin July 22, 2013. The KC IRB training curriculum is comprised of five (5) modules with separate courses in each module. While scheduled for three hours, each module should take no longer than two hours to complete. Depending on the participant's role and level of involvement in the 'nuts-and-bolts' of dealing with the IRB, suggested modules to complete will be offered. For more information on the modules, click [here](#). For registration information, click [here](#).

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 are, instead, sent directly to IUPUI School Deans. For comprehensive coverage of funding opportunities please use the on-line search tools listed below.

ALZHEIMER'S DRUG DISCOVERY FOUNDATION

Program to Accelerate Clinical Trials (PACT) for Alzheimer's Disease: The true test for new Alzheimer's drugs is in human clinical trials. Numerous treatments for Alzheimer's disease have been shown to be safe and to have some positive effect when tested in animal models of Alzheimer's disease. However, many of these potentially successful drugs have not been brought to human trials because of the increased cost and risk at this stage of research. The goal of PACT is to increase the number of innovative drugs tested in humans for Alzheimer's disease. This program will fund biomarker-based pilot clinical trials for Alzheimer's disease. *Deadlines are September 5 & December 5, 2013; letters of intent required one month prior to deadline.*

EUROPEAN SPACE AGENCY

Red Edge Positioning (REP) Techniques for Earth Observation Optical Missions: Red Edge Positioning (REP) techniques are gaining more and more importance in the retrieval methodologies for their capability of providing additional information in support to vegetation and natural surfaces observation. Studies initially made by the use of mathematical models are now supported by on ground measurements and by remote sensing data coming from hyperspectral airborne flights, which remain localized to few pre-defined areas. The preliminary results seem promising for the future systematic exploitation for the space systems. However, there are still questions with respect to the applicability of these techniques to spaceborne EO (effects of the atmosphere, spatial and spectral resolution). These effects could impact the accuracy of the methods. On that direction, the study would investigate the feasibility, the potential and also the limitations of REP methods applied to the optical satellite missions (multispectral, hyperspectral at high and medium resolutions), and provide tentative solutions whenever possible. The expected outputs are a set of methods and algorithms with a demonstrated accuracy and feasibility which could be proposed in support to future and potential optical missions. *Deadline is September 13, 2013.*

NATIONAL INSTITUTES OF HEALTH

Studies in Neonatal Resuscitation (R01): The purpose of this FOA is to stimulate research on a wide range of topics related to neonatal resuscitation. Possible topics may include, but are not limited to, fetal-neonatal transitional cardiovascular and pulmonary physiology, management of third stage of labor and its effect on the fetus, resuscitation of children with malformations, and effect of resuscitation on long-term outcomes. Proposals can include epidemiological studies, studies utilizing fetal-neonatal animal models, computer or other information-technology-based simulations or study designs, clinical observational studies, analyzes of pre-existing national or regional datasets, prospective randomized controlled trials, or any combinations thereof. It is anticipated that the results from well conducted studies will enable translation of knowledge into evidence-based resuscitation practices

ensuring a smooth neonatal transition for a healthy beginning, and lay a foundation for optimal short- and long-term outcomes for all newborn infants. *Deadline is September 19, 2013; letter of intent due August 19, 2013.*

NATIONAL SCIENCE FOUNDATION

Biomedical (BME) Engineering Program: The mission of the BME program is to provide opportunities to develop novel ideas into discovery-level and transformative projects that integrate engineering and life science principles in solving biomedical problems that serve humanity in the long-term. The BME program supports the following fundamental research themes: 1. Neural engineering (brain science, computational neuroscience, brain-computer interface, neurotech, cognitive engineering) 2. Cellular biomechanics (motion, deformation, and forces in biological systems; how mechanical forces alter cell growth, differentiation, movement, signal transduction, transport, cell adhesion, cell cytoskeleton dynamics, cell-cell and cell-ECM interactions. BME projects must be at the interface of engineering and life sciences, and advance both engineering and life sciences. The projects should focus on high impact transforming methods and technologies. *Deadline is September 17, 2013.*

International Research Experiences for Students (IRES): The IRES program supports development of globally-engaged U.S. science and engineering students capable of performing in an international research environment at the forefront of science and engineering. The IRES program supports active research participation by students enrolled as undergraduates or graduate students in any of the areas of research funded by the NSF. IRES projects involve students in meaningful ways in ongoing research programs or in research projects specifically designed for the IRES program. *Deadline is August 20, 2013.*

Biophotonics: Biophotonics applies photonics technology to medicine, biology and biotechnology. Basic research and innovation in photonics is needed to lay the foundation for new technologies beyond those that are mature and ready for application in medical diagnostics and therapies. Advances are needed in nanophotonics, optogenetics, contrast and targeting agents, ultra-thin probes, wide field imaging, and rapid biomarker screening. Low cost and minimally invasive medical diagnostics and therapies are key goals. Examples of topics are: Macromolecule Markers, Low Coherence Sensing at the Nanoscale, Neurophotonics, Micro- and Nano-photonics, and Optogenetics. *Deadline is September 17, 2013.*

Nano-Biosensing: The Nano-Biosensing Program supports fundamental research in engineering areas related to biorecognition elements, multifunctional nanomaterials and interfaces for biosensing applications, fundamental studies of bio-macromolecule confinement, nano-biosensors for basic biology applications, or integration of nano-biosensors into portable devices for medical applications. The Nano-Biosensing Program supports innovative, transformative, and insightful fundamental investigations of original technologies with broad long-term impact. The program is targeting research in the area of the monitoring, identification and/or quantification of biological signals and is particularly interested in projects at the intersection of engineering, life sciences, and information technology. Proposals submitted to the Program must advance both engineering and life sciences. The development of novel principles and approaches will require highly collaborative interactions between engineers, life scientists and experts in nanotechnology, biomaterials, bioinformatics, and the chemical and physical sciences. *Deadline is September 17, 2013.*

U.S. DEPARTMENT OF EDUCATION

Statistical and Research Methodology in Education: The long-term outcome of

this research program will be a wide range of methodological and statistical tools that will better enable education scientists to conduct rigorous education research. Proposed research must be relevant to education in the United States. The Institute of Education Sciences intends to fund research projects that aim to expand and improve the methodological and statistical tools that are available for education researchers conducting research of the type that the Institute funds through its research grant competitions, statistics contracts, and evaluation contracts. For FY 2014, the Institute requests projects that will provide findings, resources, and tools of immediate practical use to education researchers by the end of the project. The Institute has added an Early Career grants category for applications from early career researchers in order to help them implement their research agendas. These grants are to support the type of research discussed in the Background section, meet the requirements for the regular grants category discussed in this section along with additional requirements under the Significance and Research Plan sections, and are smaller in size and shorter in length. *Deadline is September 4, 2013, letter of intent deadline has passed, but missing the LOI deadline does not eliminate a proposal, call program officer.*

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 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): COS is a primary on-line search tool for identifying funding opportunities. To take advantage of this tool, register at <http://www.cos.com/login/join.shtml>. 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.

The Special Handling list was created in order to communicate donor restrictions and/or preferences for managing solicitation requests from Indiana University. The list reflects special relationships that exist between donors and the university and includes corporations and foundations that the President's office wishes to review prior to submission in order to coordinate Indiana University's requests to these donors.

The Special Handling List was compiled and is maintained by the Indiana University Foundation office of Corporate and Foundation Relations. Please contact [Dee Metaj](#) at 317-278-5644 if you have any questions regarding this list.

IU Authentication is required to view the following attachments:

[IUF Special Handling List and Principal Gifts Review Template](#)

Office of the Vice Chancellor for Research - ovcr@iupui.edu
Indiana University Purdue University Indianapolis
755 West Michigan Street, UL1140, Indianapolis, IN 46202-2896
Phone: (317) 278-8427

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