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FEATURE STORY

Vera Bradley Foundation Pledges \$15 Million to IU Simon Cancer Center

The Vera Bradley Foundation for Breast Cancer announced today a \$15 million pledge to support breast cancer research at the [Indiana University Melvin and Bren Simon Cancer Center](#).

This new pledge adds to the previous \$20 million in commitments completed in November 2013 and will continue to fund the Vera Bradley Foundation for Breast Cancer Research Laboratories, named for the foundation in 2010. The completion of this pledge will bring the total giving to the IU Simon Cancer Center to \$35 million.

"We strongly believe in the research team's focus: precision therapeutics," said Catherine Hill, executive director of Vera Bradley Foundation for Breast Cancer. "Stated simply, precision therapeutics is giving the right medicine to the right patient at the right time based on genetic factors of both the patient and the tumor."

"Since 1998, the Vera Bradley Foundation has been the IU Simon Cancer Center's partner in conducting breast cancer research that is saving and extending the lives of women everywhere," said Patrick J. Loehrer Sr., M.D., director of the IU Simon Cancer Center. "Their \$15 million pledge is a testament to their commitment to make a difference in women's lives. The researchers at the IU Simon Cancer Center will honor the trust they have placed in us by our commitment to our mission to conduct novel, collaborative research that has a meaningful impact on patients with cancer and to train the next generation of scientists to carry forward this mission."

The gift will support IU researchers as they:

- *Search for gene alterations that drive specific subtypes of breast cancer and look for new or existing drugs that are more likely to be effective
- *Identify genetic markers that will allow them to predict, with a high level of accuracy, who will suffer from life-changing and life-threatening side effects to treatment, or whose cancer is likely to metastasize
- *Combine this knowledge to deliver clinical trials to patients with the goal of improving cure rates and quality of life

The gift will also establish the Vera Bradley Foundation Scholars Program to train scientists and physicians who will be the future leaders in breast cancer research and care. As a result of support from the Vera Bradley Foundation for Breast Cancer, the number of IU researchers focused on breast cancer has grown to 38, up from six in 1999.

"We are extraordinarily grateful for the commitment and generosity of The Vera Bradley Foundation, which is emerging as one of the nation's leading supporters of breast cancer research. This generous pledge will help

the IU School of Medicine further advance not only its research and education missions, but also to translate these findings to improve the health of women with breast cancer," said Jay Hess, M.D., Ph.D., MHSA, dean of the IU School of Medicine.

The Vera Bradley Foundation for Breast Cancer recently completed its 2013 fiscal year, raising \$2.7 million. The Foundation's main benefactor is [Vera Bradley Inc.](http://www.verabradley.org), which contributes approximately \$1 million each year to the cause. Additional support comes from several sources, including events and individual donations. Vera Bradley's co-founders began raising funds for a cure after the loss of a dear friend to the disease in 1993. To learn more about the Vera Bradley Foundation for Breast Cancer visit <http://www.verabradley.org>.

ANNOUNCEMENTS

Save the Date 2014 IUPUI Research Day



On April 11, 2014 the Office of the Vice Chancellor for Research will host the 2014 IUPUI Research Day. This open house celebrates the cutting-edge and multifaceted research and scholarly activities of IUPUI. This full day event will be held at the IUPUI Campus Center.

Research Day provides an opportunity for the IUPUI faculty, staff, and students, their academic, industrial, and governmental partners, and the broader community, to come together and learn more about the research enterprise at IUPUI, to explore new collaborations, and to lay the foundation for new partnerships.

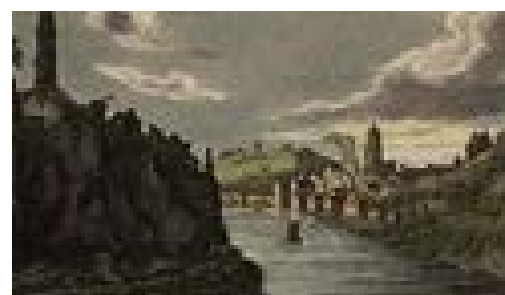
More details will be announced in upcoming Research Enterprise issues.

Conference at IUPUI Explores Transdisciplinary Approach to Problems with Earth's River System

Since the dawn of civilization, access to freshwater, especially in river environments, has helped determine where human populations have flourished on planet Earth.

Over the past two centuries -- an age that many geologists are now calling the Anthropocene -- humans have reshaped the planet's biophysical systems, threatening the availability of freshwater and consequentially the stability of ecologies.

This situation has created one of the most important and complex problems that humans will face in the 21st century, according to an international group of researchers convening in Indianapolis this month to launch a seven-year study of how to mitigate the threat of water insecurity.



Rivers of the Anthropocene Conference

The researchers will hold the [Rivers of the Anthropocene Conference](http://www.riversoftheanthropocene.org) on Jan. 23 and 24 in the Klipsch Theater, on the lower level of the Campus Center at Indiana University-Purdue University Indianapolis in downtown Indianapolis.

The conference, which brings together 25 scientists, humanists, social scientists, artists, policy makers and community organizers from five countries, is open to the public and is the kickoff event for The Rivers of the

Anthropocene Project, a long-range research effort. Leaders say the project will take a transdisciplinary approach to help us better understand the complex dynamics between humans and their river environments. Faculty from IUPUI are partnering with faculty from Newcastle University in the United Kingdom as project leaders. The IUPUI Arts and Humanities Institute is organizing the event.

"The majority of the world's population is threatened by water insecurity and biodiversity loss," said Jason M. Kelly, IUPUI Arts and Humanities Institute director and a Rivers of the Anthropocene Project director. "Even here in Indianapolis, we face potential water shortages in the next decades. We can solve these problems, but the solutions are not simply technological; they are cultural, social and political. They require experts from across the disciplines working hand-in-hand with communities and policy makers."

By mapping the ecological, geographical, cultural, social, political and scientific histories of river systems, the Rivers of the Anthropocene Project will provide insight on issues of relevance to public policy, environmental conservation and heritage management.

For the January 2014 conference, presenters will offer case studies from around the globe, with particular emphasis on the Ohio and Tyne rivers. Topics for discussion and papers presented at the conference include human geography and river environments; the challenge of Anthropocene rivers; rivers on a human scale; earth systems; and the relationship between human systems and river systems.

Speakers include Bill Werkheiser, acting deputy director of the U.S. Geological Survey; and environmental artist Mary Miss.

Support for the conference comes from Keramida Inc., the IUPUI Arts and Humanities Institute, Indiana Humanities, IUPUI School of Science, IU School of Liberal Arts at IUPUI, the Center for Earth and Environmental Science at IUPUI, the Center for Urban Ecology at Butler University, the IUPUI Center for Urban Health, Newcastle University, the Newcastle Institute for Research on Sustainability, IU Office of the Vice President for Research, IUPUI Office of the Vice Chancellor for Research and IUPUI Office of the Chancellor.

Admission is \$45. Registrants may purchase lunch. Discounted parking will be available on the ground level of the adjacent Vermont Street Garage.

Hammond and Trexler Named American Congress of Rehabilitation Medicine Fellows

Two faculty members from the IU School of Medicine have been named fellows of the American Congress of Rehabilitation Medicine.

The ACRM names fellows each year to recognize active members with an outstanding record of professional service to ACRM who have also made contributions of national significance to the field of medical rehabilitation. Fellows may use the designation "FACRM" after their name to identify this achievement. The recipients are:

Flora Hammond, M.D., chair and Covalt Professor of Physical Medicine & Rehabilitation at the IU School of Medicine.

Dr. Hammond, who also serves as chief of medical affairs and brain injury medical director at the Rehabilitation Hospital of Indiana and medical director at St. Vincent Acute Rehabilitation Unit, is an experienced researcher who has conducted numerous studies on the long-term issues following brain injury and spinal cord injury, and the effectiveness of treatment strategies to improve outcomes.

A board certified physical and rehabilitative medicine physician, Dr. Hammond is also currently project director of the Indiana Traumatic Brain Injury Model System and medical director for the NeuroRestorative site in Indiana. From 1998 to 2012, she also served as project director of the Carolinas Traumatic Brain Injury Model System. She is also the recipient of the 2001 Association of Academic Physiologists Young Academician Award and the 2011 Brain Injury Association of America William Caveness Award, and has authored more than 108 peer-reviewed publications.

She holds a medical degree from Tulane University School of Medicine and served as a resident in Physical



Flora Hammond, M.D.

Medicine and Rehabilitation at the Baylor College of Medicine and as a brain injury fellow at the Rehabilitation Institute of Michigan.

Lance Trexler, Ph.D., is a volunteer clinical assistant professor of physical medicine and rehabilitation at the IU School of Medicine.

Dr. Trexler, who also serves as director of neuropsychology at the Rehabilitation Hospital of Indiana, conducts research and program development focused on resource facilitation to improve return to work and school following brain injury. Dr. Trexler and collaborators have developed and studied the effects of resource facilitation on return to work in the context of social networks that serve to eliminate barriers and prevent co-morbidities in persons with brain injury.

Dr. Trexler is also chair of both the ACRM Cognitive Rehabilitation Training Committee and the ACRM Brain Injury Special Interest Group, and co-chair of the Indiana Brain Injury Leadership Board that oversees delivery of resource facilitation services. Previously, he served as chair of both the Indiana Spinal Cord and Brain Injury Research Board and the Brain Injury Association of Indiana.



Lance Trexler, M.D.

The author of more than 30 book chapters and peer-reviewed articles, Dr. Trexler is also the managing editor of the "Cognitive Rehabilitation Manual: Translating Evidence-Based Recommendations into Practice" published by ACRM in 2012.

In 2011, Dr. Trexler was awarded the ACRM Brain Injury Special Interest Group Lifetime Achievement Award. He earned a bachelor's degree in psychology at IU, a master's degree at Ball State University and a doctorate in clinical psychology at Purdue University. He completed his clinical internship at the Baylor College of Medicine.

White House appoints McKinney Law Professor to Public Advisory Committee

The White House recently announced that President Barack Obama has appointed IU Robert McKinney School of Law professor Eric Dannenmaier to serve as a member of the Joint Public Advisory Committee of the North American Commission for Environmental Cooperation.

The [North American Commission for Environmental Cooperation](#) was created under the North American Agreement on Environmental Cooperation as part of the North American Free Trade Agreement among the United States, Canada, and Mexico in 1994. It promotes regional environmental cooperation and enforcement of national environmental laws within the three countries. The Joint Public Advisory Committee includes five members from each country who advise the commission on any matter within the scope of the North American Agreement on Environmental Cooperation.

The White House Office of the Press Secretary announced Professor Dannenmaier's appointment.



Eric Dannenmaier, J.D.

"I am grateful these accomplished men and women have agreed to join this administration, and I'm confident they will serve ably in these important roles. I look forward to working with them in the coming months and years," President Obama said, according to the announcement.

Dannenmaier directs the [Environmental, Energy, and Natural Resources Law](#) Program at IU McKinney, and teaches natural resources law and water law in addition to constitutional law and property. His research focuses on transboundary natural resource governance and environmental democracy – two key areas in which the Commission operates.

"I am honored that the President has asked me to serve in this important role," Dannenmaier said. "The North American Commission for Environmental Cooperation is unique among international organizations in addressing transboundary environmental concerns that relate to our country's economic, trade, and social relationships," he explained. "The commission has been fostering environmental protection and conservation

across borders for twenty years through engagement, transparency, and collaboration. I look forward to contributing to that process."

Dannenmaier will remain on the McKinney faculty and continue to teach while devoting part of his time to work with the commission. "It means a bit more travel, and a few more nights and weekends," he said, "but this will bring new insights to the classroom and present new research opportunities for students interested in transboundary environmental, natural resource, and economic integration issues."

CENTER SPOTLIGHT

New Center to Deliver Research-based Solutions to Rising Health Care Costs

In response to rising national health care costs, the Indiana Clinical and Translational Sciences Institute, in partnership with the IU School of Medicine, has launched a new center to increase efficacy and reduce costs at four major health care providers across Indiana.

The newly designated Center for Innovation and Implementation Science, or CIIS -- formerly the Innovation and Implementation Science Initiative -- will oversee four specialized research and discovery units managed by IU School of Medicine researchers at Indiana University Health, Riley Hospital for Children at IU Health, Eskenazi Health and the Richard L. Roudebush VA Medical Center in Indianapolis. The center's mission will be to tackle problems with the potential to reduce costs or generate new revenue estimated at \$5 million per year or greater.



Malaz A. Boustani, M.D.

"This center will be one of the first such dedicated centers in the nation," said Dr. Malaz A. Boustani, associate professor of medicine at the [IU School of Medicine](#), who will serve as chief operating officer of the center. "It will leverage the country's focus in health care reform to transform the IU School of Medicine's health care partners into laboratories of discovery that improve the health of our population and the quality of their care, and reduce costs."

The center is also a direct response to an influential [Institute of Medicine report](#) that called for U.S. health care systems to transform into highly adaptive, learning health care systems, he added.

Support for CIIS comes from the Indiana CTSI and IU School of Medicine with additional funds from [Strategic Research Initiative](#), a joint \$150 million commitment from the IU School of Medicine and IU Health to fund innovative health care research projects. These combined resources will fuel the recruitment and training of additional implementation scientists to the IU School of Medicine. Initial support for the center, when it was the Innovation and Implementation Science Initiative, included \$700,000 from the IU School of Medicine, [Regenstrief Institute](#) and Indiana CTSI.

The research and discovery units, including directors and staff members, will be funded by the health care delivery systems in which they are located. Dr. Boustani will oversee the unit at IU Health as chief innovation and implementation officer, the first such position in the nation for a large health system. He will also oversee three CIIO positions at other participating health care systems and hospitals.

Although research and discovery units are common across the biomedical industry, Dr. Boustani said the CIIS is the first center where a [Clinical and Translational Science Award](#)-funded center and a school of medicine will oversee such units embedded within commercial and other health care systems. Over the next five years, CIIS expects to hire 10 to 20 implementation scientists, as well as support staff, across the IU Health, Eskenazi Health and Roudebush VA systems.

"The United States and Western countries have been innovating for years within a rich, unlimited resource environment," Dr. Boustani said. "Yet innovation thrives when faced with limited resources and other challenges. I strongly believe that new restraints on resources will actually improve our ability to innovate in America."

The additional CIIO positions will be held by:

- At Eskenazi Health, William M. Tierney, M.D., president of the Regenstrief Institute, associate dean for clinical effectiveness research and Sam Regenstrief Professor of Health Services Research at the IU School of Medicine.
- At Roudebush VA Medical Center, Michael Weiner, M.D., director of the IU Center for Health Services and Outcomes Research, director of the Center of Excellence on Implementing Evidence-Based Practice at Roudebush VA Health Services Research & Development and associate professor of medicine at the IU School of Medicine.
- At Riley Hospital, Stephen M. Downs, M.D., Jean and Jerry Bepko Professor of Pediatrics at the IU School of Medicine.

"The goals of the CIIS fit perfectly with the mission of the Indiana CTSI," said Anantha Shekhar, M.D., Ph.D., director of the Indiana CTSI and associate dean for translational research and Raymond E. Houk Professor of Psychiatry at the IU School of Medicine. "The Indiana CTSI aims to break down barriers to safely and effectively translate new discoveries into new treatments and therapies. CIIS will provide a partner within the state's top health care systems focused on ways to quickly and efficiently implement innovations and ensure that they reach patients and transform our health care practices."

The center will also provide a platform to attract federal funds to Indiana through special government programs focused on health care innovation, including the [Center for Medicare and Medicaid Innovation](#) and the [Patient-Centered Outcomes Research Initiatives](#), a U.S.-based non-governmental institute created in response to the [Patient Protection and Affordable Care Act](#). The first of these grants was a \$7.8 million CMS Innovation Award earned by this initiative in August 2012 to fund the rapid expansion of the [Healthy Aging Brain Care Program](#), a dementia care management system, to 11 community health centers at Eskenazi Health and IU Health Arnett Hospital in Lafayette.

Other projects implemented by the IISI include a computerized "dashboard" to objectively measure operating room quality, safety and efficiency at IU Health Methodist Hospital; in-to out-patient care system changes to reduce hospital stays for chemotherapy patients at the IU Health Simon Cancer Center; and a strategy to provide special mental health interventions to IU Health Plan members with chronic conditions and depression to lower costs and improve care within the system.

"The IISI's achievements over the past year have been remarkable," said David S. Wilkes, M.D., executive associate dean for research affairs and August M. Watanabe Professor of Medical Research at the IU School of Medicine. "The energy and enthusiasm that Dr. Boustani has poured into ushering this initiative to center status is a testament to his ability to translate theory into practice at a lightning-fast pace, and representative of what the IU School of Medicine expects this center to achieve across our partners in the local health care system."

Implementation science is uniquely situated to solve difficult health care problems due to its data-driven focus on efficacy and scalability, said Nadia Adams, executive director of the CIIS. The discipline puts a strong emphasis on evidence-based solutions to "real world" problems with methods such as controlling limited budgets through resource management; managing human factors through organizational psychology, behavioral psychology and behavioral economics; and correcting "failed solutions" through strong project evaluation methods.

"Implementing a solution is a dynamic, never-ending process which takes place within an ever-changing environment," Adams said. "Some scientists feel that after they publish a study, they should simply move onto the next challenge. We're saying more thought needs to be applied to how the ideas in journal articles can go on to impact thousands, or millions, of lives -- not only the number of patients in a research study."

Dr. Boustani added that the center aims to strike a balance between the strengths of both academic medicine and corporate health care.

"Over the next five years," he said, "our goal is no less than to transform our health care partners into truly adaptive health care systems that constantly provide excellent value to patients -- and their communities."

Researcher Leads Study Identifying First Biomarker Linked to Delirium Duration

A scientist at the Regenstrief Institute and the IU Center for Aging Research has led a study identifying the first biomarker that appears to be linked to the duration of delirium.

Dr. Babar Ali Khan, assistant professor of medicine at the IU School of Medicine and medical director of the Eskenazi Health Critical Care Recovery Center, identified S100 β , or S100 calcium binding protein B, as a biomarker for delirium duration in critically ill patients.

The study, which was conducted in the medical and surgical intensive care units of Eskenazi Health, may have important implications for refining future delirium treatment for patients in intensive care units.

"Using the biomarker to identify patients with a predisposition toward longer delirium duration should be useful in instituting more effective and personalized clinical therapies," Dr. Khan said. "The end goal (is) decreasing the burden of delirium for both the patient and the health care system."



Babar Ali Khan, M.D.

Delirium in older adults is associated with increased probability of developing dementia and a high death rate. It is estimated that each year more than 7 million hospitalized Americans suffer from the acute confusion and disorientation characteristic of delirium and about half of mechanically ventilated patients in intensive care units develop delirium.

The study, published online this month in the peer-reviewed open access International Journal of General Medicine, found that intensive care unit patients with abnormally elevated levels of S100 β either on day 1 or day 8, or both, had higher delirium duration compared to patients with normal S100 β levels on both days.

S100 β has previously been identified as a marker associated with delirium, but this is the first study to link it to the duration of delirium in critically ill patients.

It is thought that the biomarker reflects the degree of injury to non-neuronal support (i.e., glial) cells in the brain caused by inflammation, and specifically indexes the activation of glial cells called astrocytes.

"Utilizing a simple blood test presents an easy and real opportunity to decrease the burden of the syndrome and thereby diminish progression to cognitive impairment in older adults," Dr. Khan said. "Since every day with delirium in the ICU is associated with a 10 percent increased likelihood of death, it's critical to diminish its duration and ultimately prevent it."

Strategies to prevent delirium or decrease delirium duration include waking patients, conducting "breathing drills" for ventilated patients, and promoting early mobility and exercise while in the ICU, he added.

According to the American Delirium Society, hospitalized patients with delirium (adjusting for age, gender, race and other medical conditions) experience stays that are more than twice as long; greater probability of being discharged to a long-term-care facility; and a much higher probability of developing dementia than patients who do not experience delirium.

In addition to Dr. Khan, study authors are Mark O. Farber, Noll Campbell, Anthony Perkins, Nagendra K. Prasad, Siu L. Hui, Douglas K. Miller, Enrique Calvo-Ayala, John D. Buckley, Ruxandra Ionescu, Anantha Shekhar, E. Wesley Ely and Malaz A. Boustani.

The research was supported by grants from the National Institute on Aging and National Institute of Mental Health, both part of the National Institutes of Health. The research was also assisted by Indiana Clinical and Translational Sciences Institute, which is supported by the NIH's National Center for Advancing Translational Sciences.

Blood samples used in the study were stored and maintained at the [Indiana Biobank](#), a part of the Indiana CTSI, which provides investigators basic sample processing services in exchange for the ability to share the specimens with approved investigators to promote collaboration and advance medical research. The use of facility's resources also enabled Dr. Khan to increase the study's sample size.

STUDENT SPOTLIGHT

IUPUI Research Experience Prepares Undergraduate to Tackle Unfamiliar Science

When Ahmed Malik first began his internship with the New York University Summer Undergraduate Research Program, he was a little unsure what to expect. The top students from across the world had competed for the few spots available each summer at NYU, one of the premier research institutions in the country.

What he found, however, was an opportunity to excel and build on skills he learned in labs as a biochemistry student and researcher in the School of Science at IUPUI. Critical thinking and analysis, organization and determination and the drive to discover new knowledge all helped him emerge from the experience even stronger than when he began.



Ahmed Malik | Undergraduate

"I really came to appreciate the value of good mentorship," said Malik, a graduate of Hamilton Southeastern High School. "My mentors at IUPUI gave me a level of responsibility in the lab that provided an advantage when I was working in new areas at NYU."

Beginning as a freshman, Malik worked in the lab of Randall Roper, Ph.D., associate professor of biology, where he studied bone development in mouse models as it relates to Down syndrome. As an upperclassman, he had the opportunity to study enzymes in the lab of Michael McLeish, Ph.D., associate professor of chemistry. Both researchers supported his curiosity in the lab and helped him to determine his future career path in an M.D./Ph.D. program.

He credits the "free reign and independence" given to him as an undergraduate researcher at IUPUI with helping him to succeed at the next level at NYU. Positive mentors such as Roper, McLeish and Lin Zhu, senior lecturer and academic advisor, helped him learn the skills and develop the confidence to take on new challenges.

"It has been fascinating to watch Ahmed's development as a research scientist," McLeish said. "When he came to my lab, he was focused on a career as a physician. It did not take him long to find that he had an ability and passion for research. His experience at NYU showed him he can have the best of both worlds by pursuing an M.D./Ph.D. program."

At NYU, he was tasked with leading his own project working with unfamiliar material: protein synthesis related to the development of Huntington's disease. He also shadowed an infectious disease specialist while at NYU—another unfamiliar research experience.

"Because I hadn't worked in those areas before, I was a little hesitant," Malik recalled. "But, because of my past research experiences, I felt better prepared take full accountability in the lab and come up with my own ways to solve problems and reach conclusions."

"At IUPUI, the focus really is about investing in an undergraduate education," he said. "The people in the School of Science take stock in the students and give them every opportunity to succeed."

"I came to IUPUI not really wanting to do research, but these experiences have been transformative for me," he added. "I've realized all of the creativity, ingenuity and ambiguity in science."

He said many people look at science as something set in stone, but "the truth is it's very dynamic and changing all the time."

Malik is very involved as a student. He is a member of the IUPUI Honors College and has been an instructor for chemistry in the Peer-Led Team Learning Program and served as a member of the Science Student Council. He also has visited Kenya as part of AMPATH, a global health care organization devoted to treating and preventing HIV/AIDS.

TRANSLATIONAL RESEARCH IMPACT

Study Explaining Parasite Gene Expression Could Help Fight Toxoplasmosis and Malaria

A newly identified protein and other proteins it interacts with could become effective targets for new drugs to control the parasite that causes toxoplasmosis, researchers led by investigators at [the Indiana University School of Medicine](#) have reported.

The discovery could also open new research pathways for treatments for malaria.

The researchers determined that the protein, an enzyme called GCN5b, is necessary for the Toxoplasma parasite to replicate, so interfering with its activities could control the parasite. GCN5b is part of the molecular machinery that turns genes on and off in the parasite, working with other proteins that, the researchers discovered, are more plant-like than their counterparts in humans.

"GCN5b is a very different protein than its human counterpart, and proteins it interacts with are not found in humans," said Dr. William J. Sullivan, associate professor of pharmacology and toxicology.

"That's what makes this exciting -- rather than just having one enzyme that we could go after, there could be a whole collection of associated enzyme components that could be potentially targeted for drug therapies to control this parasite," he said.

In discovering that some of the proteins interacting with GCN5b are plant-like transcription factors -- proteins that bind to DNA -- the researchers filled in what had been a missing link explaining how the parasites control the process of turning genes on and off, known as gene expression. The plant-like transcription factors recruit the GCN5b enzyme complex to activate a wide variety of genes for expression.

When the research team disabled the GCN5b complex, parasite replication swiftly came to a halt.

Dr. Sullivan and his colleagues [reported their findings in the Jan. 2, 2014, online edition of the journal PLoS Pathogens](#).

An estimated 60 million people in the United States are infected with the toxoplasmosis parasite, but in most cases the infection produces flu-like symptoms or no symptoms at all. However, for people with immune system problems -- such as those undergoing chemotherapy or people with AIDS -- the disease can cause serious effects including lung problems, blurred vision and seizures. Also, infants born to mothers who are infected for the first time during or shortly before pregnancy are at risk for severe complications, miscarriages or stillbirths.

One of the most common routes to human infection is via cats, in particular their feces or litter. Eating undercooked meat from infected livestock can also result in human infection.

Although there are anti-parasitic drugs available to treat acute episodes of toxoplasmosis, it's currently impossible to completely eliminate the parasite because it can switch from an active to a latent cyst form in the body. Since GCN5b is active during both acute and latent stages, the enzyme and its associating components are very promising candidates for drug targeting, Dr. Sullivan said. Because the transcription factors are plant-like proteins not found in humans, drugs targeting them would be much less likely to affect human proteins and cause adverse effects.

Researchers also use Toxoplasma as a model organism for the malaria parasite Plasmodium, meaning much of what is learned about Toxoplasma could lead to new treatments for a disease that struck an estimated 207 million people worldwide in 2012 and caused an estimated 627,000 deaths, most of them children. Dr. Sullivan noted that the malaria parasite also possesses a GCN5 enzyme, as well as the plant-like proteins.

Other investigators contributing to the research were Jiachen Wang, Stacy E. Dixon, Victoria Jeffers and Ting-Kai Liu of the Indiana University School of Medicine; Li-Min Ting, Matthew M. Croken, Myrasol Calloway and Kami Kim of the Albert Einstein College of Medicine, Bronx, NY, and Dominique Cannella and Mohamed Ali Hakimi of Universite Joseph Fourier, Grenoble, France.



William J. Sullivan Jr., Ph.D.

The research was supported by grants from the National Institutes of Health: AI077502, AI087625, T32 GM007491 and AI092801. Additional support came from the following NIH-funded shared instrumentation grants: 1S10RR019352 and 1S10RR021056.

OVCR INTERNAL GRANT DEADLINES

Release Time for Research (RTR): IUPUI maintains a robust research enterprise. To support faculty with adequate time to prepare competitive proposals, the IUPUI Office of the Vice Chancellor for Research has developed the Release Time for Research (RTR) internal funding mechanism. This funding program allows IUPUI faculty a "buy out" of teaching time to prepare high quality grant/contract proposals for submission to external funding agencies. It also supports non-tenure track faculty who are full-time senior lecturers or clinical track faculty possessing terminal degrees relevant to their fields, and who have a desire to engage in research or creative activity in an area that directly relates to their teaching or service mission. *The next RTR application deadline is **February 1, 2014**.* For grant guidelines and application forms, go to <http://research.iupui.edu/funding/>.

Developing Diverse Researchers with InVestigative Expertise (DRIVE): The Developing Diverse Researchers with InVestigative Expertise (DRIVE) program is designed to enhance the diversity and research and creative activity mission of IUPUI. Faculty from historically underrepresented populations, usually defined as African-American, Latino-American, Native American, Pacific Islanders, and women are particularly encouraged to apply. The DRIVE program supports projects that have the potential for sustainability through external funding. *The next DRIVE application deadline is **March 1, 2014**.* For grant guidelines and application forms, go to <http://research.iupui.edu/funding/>.

IUPUI ARTS AND HUMANITIES INTERNAL GRANT (IAHI): The IAHI Grant Program exists to support campus-wide attainment of excellence in research and creative activity in arts and humanities. It is designed to enhance the research and creative activity mission of IUPUI by supporting research projects and scholarly activities that are conducted by arts and humanities faculty. *The IAHI application deadline is **February 15, 2014**.* For grant guidelines and application forms, go to <http://research.iupui.edu/funding/>.

Funding Opportunities for Research Commercialization and Economic Success (FORCES): The FORCES program is designed to support IUPUI researchers in the successful transformation of their research findings into commercially viable outcomes. The key goals of FORCES are to support: 1) realization of short-term projects that will enhance commercial value of IUPUI intellectual property assets, by facilitating commercialization of inventions, technologies, or other intellectual property derived from existing research projects, and 2) development of research initiatives that show great promise for commercialization of the research outcomes. *The next FORCES application deadline is **March 15, 2014**.* For grant guidelines and application forms, go to <http://research.iupui.edu/funding/>.

IUPUI Signature Centers Initiative: The Signature Centers Initiative (SCI) was begun in 2006 in an effort to create strong research units, which are uniquely identifiable with IUPUI and will lead the way in world-class research and creative activities that will substantially enhance the reputation of our campus. OVCR is happy to announce the 7th call for SCI proposals. *The application deadline is **April 1, 2014**.* For grant guidelines and application forms, go to <http://research.iupui.edu/funding/>.

OVCR EVENTS AND WORKSHOPS

Finding Funding

When: Tuesday, January 21, 2014 | 2:00pm - 3:30pm
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 several 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/FindingFundingSpring/>

How to Extract Data from KC

When: Friday, January 24, 2014 | 10:30am - 12:00pm

Where: University Library, Lilly Auditorium

Steve Martin and Jim Becker from the Office of Research Administration will demonstrate how to extract data from KC and other resources

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

National Science Foundation Faculty Early Career Development Program

The Faculty Early Career Development (CAREER) Program is an NSF-wide activity offering prestigious awards in support of junior faculty who exemplify the role of teacher-scholars through outstanding research, excellent education and the integration of education and research within the context of the mission of their organizations.

The NSF deadlines for submission of proposals are July 22, 23, and 24, 2014, depending on discipline. If you are interested in applying and would like assistance by OVCR staff, be sure to attend all of the following sessions.

»Session 1: General Information & Eligibility

When: Friday, February 7, 2014 | 10:00am - 12:00pm

Where: University Library, Room 1126

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

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

»Session 2: Panel of Successful Applicants

When: Friday, March 14, 2014 | 10:00am - 12:00pm

Where: University Library, Room 1126

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

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

»Session 3: Jumpstarting the NSF CAREER Proposal Writing Process

When: Friday, May 2, 2014 | 10:00am - 12:00pm

Where: University Library, Room 1126

The Office of the Vice Chancellor for Research Proposal Development team will provide one-to-one support for developing and submitting NSF CAREER proposals. Attendees at this session will present their proposal concepts and be matched with an experienced professional writer/editor who will work with them through submission. You are welcome to bring your lunch.

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

Ins and Outs of Applying for NSF Funding

When: Friday, February 14, 2014 | 8:30am - 12:00pm

Where: University Library, Lilly Auditorium

How to prepare and submit grant proposals to the National Science Foundation (NSF) is the focus for this interactive discussion by representatives of the Office of the Vice Chancellor for Research. Topics to be covered will include the identification of the different types of funding mechanisms and those most appropriate for your career stage, a description of the content of excellent proposals, a presentation of 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 NSF awardees and study section participants who will provide an in-depth look into the review process and a presentation by staff from the Office of Research Administration.

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

National Science Foundation Research Experiences for Undergraduates

When: Friday, February 28, 2014 | 2:00pm - 4:00pm

Where: University Library, Room 1126

The NSF REU opportunity includes grant proposals designed specifically to initiate and conduct projects that engage a number of undergraduate students in thematically-linked, ongoing research projects in meaningful ways. For those with existing NSF funding, supplemental grants to add undergraduate researchers to currently funded NSF projects will also be discussed. The NSF deadline for submission of site proposals is August 27, 2014. If you are interested in applying and would like assistance by OVCR staff, be sure to attend.

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

Ideas Solving Social and Economic Challenges (ISSEC)

When: Thursday, March 6, 2014 | 3:30pm - 6:00pm

Where: Campus Center Theatre

ISSEC is a competition to reward IUPUI students for their innovative ideas to solve social and economic challenges facing the nation and the world. The emphasis of the competition is on providing answers to real-world problems, through new approaches, products, services, or ventures. ISSEC challenges IUPUI students--individuals or teams--to propose original solutions to pressing social and economic challenges.

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

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

Developing Complex Multi-Investigator, Multi-Institutional Proposals

When: Thursday, March 27, 2014 | 3:00pm - 4:30pm

Where: 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. What works best in which situation? Should you use a "Red Team Review"? What role does the RFP serve to organize the writing efforts? Professional proposal writers and editors will discuss these and a number of related issues at this session.

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

Nine Golden Rules to Succeed in Research and Scholarship

When: Friday, March 28, 2014 | 11:00am - 1:00pm

Where: 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 information of interest as well.

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

Polishing Your Grant Proposal: Writing with Clarity, Conviction, and Confidence

When: Friday, April 18, 2014 | 11:30am - 1:00pm

Where: University Library, Room 1126

Writers from the OVCR Proposal Development Services team will offer tips, techniques, and individual writing consultations to improve the fundability of grant proposal submissions. You are encouraged to bring works-in-progress and other writing samples to discuss. You are welcome to bring your lunch.

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

Working with Industry on Applied Research & Creative Activity

When: Friday, April 25, 2014 | 1:00pm - 2:30pm

Where: University Library, Room 1126

This session will provide participants with an overview of services provided by the Office of the Vice Chancellor for Research that help link faculty researchers to industry partners for potential collaborations. Although this information session is geared toward new to mid-career faculty/researchers with a desire to work with industry, all faculty are welcome to attend. The following topics will be discussed: Research vs. applied research; Benefits of collaboration; How much industry research is currently being conducted at IUPUI; What industry looks for in applied research; What industry looks for in an applied researcher.

Registration: <https://crm.iu.edu/CRMEvents/Industry/>

OTHER EVENTS AND WORKSHOPS

Research Administration 101

Grant Services and REEP are pleased to announce and invite you to Research Administration 101 - an educational program on sponsored programs administration for basic- to intermediate-level academic unit research administrators and interested ORA staff and researchers. The program consists of three workshops to be offered three times per semester. The curriculum will cover topics that collectively constitute an integrated introduction to sponsored program administration and will be offered on both the IUB and IUPUI campuses.

Session One: Costs: Unallowable, Allowable & In-Between

January 24, 2014, 1:30-3:30 pm, MS B14

Session Two: Account Management: Roles & Responsibilities

February 19, 2014, 1-3 pm, MS 122A

Session Three: Grants Finance & Operations

March 27, 2014, 1-3 pm, MS 122A

Session Four: Account Management: Resources

April 21, 2014, 1:30-3:30 pm, IB 226 (Medical Research & Library)

To register, visit the Educational Opportunities webpage, http://researchadmin.iu.edu/EO/eo_sessions.html.
(Select *Ethics, Education & Policy* from the drop-down list of Area)

For more information, contact Sofia McDowell at somcdowe@indiana.edu.

RECENT EXTERNAL FUNDING AWARDS

The Office of the Vice Chancellor for Research recognizes and congratulates all IUPUI faculty and researchers for recent awards they have received and that help to advance the IUPUI research enterprise. The following table highlights those receiving \$100,000 or more in external grants.

Grants and Awards - December 2013

PI	Agency	Project Title	School	Department	Total
O'Hagan, Heather M	NATIONAL INSTITUTE OF ENVIRONMENTAL HLTH SCIENCES	Toxin-Associated Oxidative DNA Damage Initiates Tumor-Specific Epigenetic Changes	MEDICINE	MEDICAL SCIENCES PROGRAM	\$1,560,000
Firulli, Anthony B	NATIONAL HEART, LUNG AND BLOOD INSTITUTE	Endocardial mechanisms of cardiac trabeculation and septation	MEDICINE	PED-CARDIAC DEV BIOLOGY WELLS	\$1,521,000
Firulli, Anthony B	NATIONAL HEART, LUNG AND BLOOD INSTITUTE	Cellular and Molecular Mechanisms of Left Ventricular Growth and Morphogenesis	MEDICINE	PED-CARDIAC DEV BIOLOGY WELLS	\$1,521,000
Salyers, Michelle Pensec	PATIENT-CENTERED OUTCOMES RESEARCH INSTITUTE	The impact of burnout on patient-centered care: A comparative effectiveness trial in mental health	SCIENCE	PSYCHOLOGY	\$1,506,292
Matei, Daniela Elena	V FOUNDATION FOR CANCER RESEARCH	An epigenetic strategy for restoring carboplatin sensitivity in ovarian cancer	MEDICINE	MEDICINE	\$600,000
Mott, Nathan David	INDIANAPOLIS PUBLIC SCHOOLS	University students rising to the challenge of service and experiential learning working as mentors and tutors serving Learning Centers at Indianapolis Public Schools 2013-2014	E&T	ORG LEADERSHIP & SUPERVISION	\$534,788
Kassab, Ghassan S	NORTHERN CALIFORNIA INSTITUTE FOR RESEARCH & EDU	Minimally Invasive Ventricular Polymeric Injection for Treatment of Heart Failure	E&T	BIOMEDICAL ENGINEERING	\$459,769
Gilk, Stacey D	AMERICAN HEART ASSOCIATION INCORPORATED	Role of cholesterol in host cell colonization by the Q fever agent Coxiella burnetii	MEDICINE	MICROBIOLOGY & IMMUNOLOGY	\$308,000
Lajiness, Jacquelyn D	NATIONAL HEART, LUNG AND BLOOD INSTITUTE	Protein tyrosine phosphatase Shp2 and neonatal cardiac innervation	MEDICINE	BIOCHEMISTRY/MOLECULAR BIOLOGY	\$211,954
Loehrer, Patrick J.	UNIVERSITY OF NOTRE DAME	Simon-Harper Inter-Institutional Research Team (SHIIRT) Grants	MEDICINE	CANCER CENTER	\$164,668
Blazer-Yost, Bonnie L.	GLAXO SMITH KLINE	Use of TRPV4 Antagonists for the Treatment of Hydrocephalus	SCIENCE	BIOLOGY	\$146,239
Corson, Timothy W	INTERNATIONAL RETINAL RESEARCH FOUNDATION	Mechanistic and therapeutic studies of a novel pharmacotherapy for age-related macular degeneration	MEDICINE	OPHTHALMOLOGY	\$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 are, instead, sent directly to IUPUI School Deans. For comprehensive coverage of funding opportunities

please use the on-line search tools listed below.

DEPARTMENT OF DEFENSE

Multifunctional Quantum Transduction of Photons, Electrons, and Phonons: The objective of this topic is to develop a quantum technology that expands the capabilities afforded by optomechanical devices by adding active control of the mechanical degrees of freedom via electronic signals in both the classical and quantum regimes. Develop coherent electronic control of both photonic and phononic quanta using electrically-based quantum circuits such as superconducting qubits, or optical or phononic control of synthetic or naturally-occurring atomic defect spin states. Provide multi-field quantum transduction linking electronics, spintronics, mechanics and photonics, and demonstrate quantum control of phonons, enabling photon-like manipulation of this degree of freedom. This quantum transducer should yield (1) high-bandwidth transmission and reception of optically-encoded, quantum-encrypted information, providing secure high-bandwidth communication; (2) the development of coherent coupling between hybrid quantum systems, and (3) new integrated means for quantum information storage and processing.

Photonic and optomechanical structures have been largely based on Si and SiN. Other materials should be considered, e.g., SiC and AlN, which are now available as high-quality thin films with desirable optical properties, tunable electronic spin, and provide strong piezoelectric response. Properly harnessed, the piezoelectric response enables strong coupling of electrical signals to mechanical motion at microwave frequencies, affording a new mode for high-speed information transfer between photons and quantum-controlled phonons. A focused effort should explore the capabilities of such "3-field" systems. This will require materials processing; quantum structures; coupling modalities; theory; and simulation tools incorporating all degrees of freedom. Strong electro-optomechanical coupling, with quantum control over electronic, spintronic, photonic and phononic degrees of freedom, should be achievable. Very high bandwidths for quantum-entangled photonic states may be achieved using such devices. These also should provide new transduction mechanisms for coupling hybrid quantum systems. *Deadlines: White Paper, October, 15, 2014; Submission, December 16, 2014.*

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.

NATIONAL ENDOWMENT FOR THE HUMANITIES

Landmarks of American History and Culture-Workshops for School Teachers: The Landmarks of American History and Culture program supports a series of one-week residence-based workshops for a national audience of K-12 educators. NEH Landmarks of American History and Culture Workshops use historic sites to address central themes and issues in American history, government, literature, art, music, and other related subjects in the humanities. The goals of the workshops are to 1) increase knowledge and appreciation of subjects, ideas, and places significant to American history and culture through humanities reading and site study; 2) build a community of inquiry and provide models of civility and of excellent scholarship and teaching; 3) provide teachers with expertise in the use and interpretation of historical sites and of material and archival resources; and 4) encourage historical and cultural sites to develop greater capacity and scale for professional development.

NEH Landmarks Workshops are held at or near sites important to American history and culture (e.g., presidential residences or libraries; colonial-era settlements; major battlefields; historic districts; parks and preserves; sites of key economic, social, political, and constitutional developments; and places associated with major writers, artists, and musicians). NEH Landmarks Workshops are academically rigorous and focus on key primary sources, documents, and scholarly works relevant to major themes of American history and culture. Leading scholars should serve as lecturers or seminar leaders. Workshops should also provide the opportunity to work with primary documents and develop classroom resources or a research project. NEH encourages proposals for Landmarks of American History and Culture Workshops that respond to NEH's

Bridging Cultures initiative. *Deadline: March 4, 2014.*

NATIONAL INSTITUTES OF HEALTH

Chronic Inflammation and Age-Related Diseases (R01): The participating NIH Institutes and Centers invite applications to address both the origins and the effects of low level chronic inflammation in the onset and progression of age-related diseases and conditions. Chronic inflammation, as defined by elevated levels of both local and systemic cytokines and other pro-inflammatory factors, is a hallmark of aging in virtually all higher animals including humans and is recognized as a major risk factor for developing age-associated diseases. The spectra of phenotypes capable of generating low-level chronic inflammation and their defining mediators are not clear. Further, a clear understanding of how chronic inflammation compromises the integrity of cells or tissues leading to disease progression is lacking. The role of dietary supplements and/or nutritional status in chronic inflammation in age-related disease is also poorly studied. Thus, there is a critical need to establish the knowledge base that will allow a better understanding of the complex interplay between inflammation and age-related diseases. Applications submitted to this FOA should aim to clarify the molecular and cellular basis for the increase in circulating inflammatory factors with aging, and/or shed light on the cause-effect relationship between inflammation and disease, using pre-clinical (animal or cellular based) models. *Deadline: June 14, 2014.*

Inner City Asthma Consortium (ICAC): This FOA invites applications to conduct clinical research and assume the leadership and administrative responsibilities for the Inner City Asthma Consortium. The selected applicant will continue the mission of the ICAC, which focuses on the treatment and prevention of asthma in inner-city populations by conducting clinical trials and mechanistic studies in order to understand the immunopathogenesis of the disease and to evaluate and develop effective interventions tailored to inner-city populations. The ICAC will be supported by the following sub-sections: Leadership, Clinical Trials Operations, Mechanistic Studies Operations, Urban Environment and Childhood Asthma (URECA) Operations, and Laboratory Support.

The following are the major research objectives of the ICAC: 1) Develop allergen immunotherapy modalities to mitigate and/or prevent the effects of inner-city specific allergens on asthma, 2) Develop and implement other innovative, phenotype-specific, immunomodulatory clinical trials for the treatment of inner-city asthma, 3) Develop and implement clinical trials to prevent the incidence or progression of inner-city asthma, 4) Investigate the role of the microbiome of the host (GI, respiratory, skin) and of the home environment in inner-city asthma, 6) Investigate the pathogenesis and mechanisms of specific inner-city asthma phenotypes, and 7) Continue the inner-city asthma birth cohort URECA through 14-16 years of age. *Deadline: December 20, 2014.*

Biophysical And Biomechanical Aspects of Embryonic Development (R01): This Funding Opportunity Announcement (FOA) encourages Research Project Grant (R01) applications from institutions/organizations that propose to advance our knowledge in the area of the physics and mechanics of embryonic development. Applicants must propose hypothesis-driven developmental research with the prospect of gaining new and critical information about tissue mechanics relevant to vertebrate development and understanding the basis for developmental disorders. Investigators are encouraged to explore approaches and concepts new to the area of developmental tissue mechanics and use newly developed techniques superior to the ones currently used in the field. It should be noted that applications using the NIH R01 grant mechanism will require sufficient preliminary data to substantiate the validity of the proposed research and feasibility of new technologies or tools. **Components of Participating Organizations:** Eunice Kennedy Shriver National Institute of Child Health and Human Development (NICHD) National Heart, Lung, and Blood Institute (NHLBI) National Institute of General Medical Sciences (NIGMS). *Deadlines: Letter of Intent, August 16, 2014; Submission, September 17, 2014.*

NATIONAL SCIENCE FOUNDATION

Genealogy of Life (GoLife): All of comparative biology depends on knowledge of the evolutionary relationships (phylogeny) of living and extinct organisms. In addition, understanding biodiversity and how it changes over time is only possible when Earth's diversity is organized into a phylogenetic framework. The

goals of the Genealogy of Life program are to resolve the phylogenetic history of life and to integrate this genealogical architecture with underlying organismal data. The ultimate vision of this program is an open access, universal Genealogy of Life that will provide the comparative framework necessary for testing questions in systematics, evolutionary biology, ecology, and other fields. A further strategic integration of this genealogy of life with data layers from genomic, phenotypic, spatial, ecological and temporal data will produce a synthesis of biodiversity and evolutionary sciences. The resulting knowledge will enable synthetic research on biological dynamics throughout the history of life on Earth, within current ecosystems, and for predictive modeling of the future evolution of life. *Deadline: March 26, 2014.*

Resilient Interdependence Infrastructure Processes and Systems (RIPS): The goals of the Resilient Interdependent Infrastructure Processes and Systems (RIPS) solicitation are: 1) to foster an interdisciplinary research community that discovers new knowledge for the design and operation of infrastructures as processes and services, 2) to enhance the understanding and design of interdependent critical infrastructure systems (ICIs) and processes that provide essential goods and services despite disruptions and failures from any cause, natural, technological, or malicious, and 3) to create the knowledge for innovation in ICIs to advance society with new goods and services. The objectives of this solicitation are to: a) create theoretical frameworks and multidisciplinary computational models of interdependent infrastructure systems, processes and services, capable of analytical prediction of complex behaviors, in response to system and policy changes; b) synthesize new approaches to increase resilience, interoperations, performance, and readiness in ICIs; and c) understand organizational, social, psychological, legal, political and economic obstacles to improving ICI's, and identifying strategies for overcoming those obstacles. The RIPS solicitation seeks proposals with transformative ideas that will ensure ICIs services are effective, efficient, dependable, adaptable, resilient, safe, and secure. Successful proposals are expected to study multiple infrastructures focusing on them as interdependent systems that deliver services, enabling a new interdisciplinary paradigm in infrastructure research. *Deadline: March 19, 2014.*

Ecology and Evolution of Infectious Diseases (EEID): The goal of the EEID program is to support important and innovative research on the ecological, evolutionary, and socio-ecological principles that influence the transmission dynamics of infectious diseases. The program's focus is on the discovery of general principles and processes and on building and testing models that elucidate these principles. Projects must address quantitative or computational understanding of pathogen transmission dynamics. Research in EEID is expected to be an interdisciplinary effort that goes beyond the scope of typical studies funded by the standing programs of the partner agencies. They should bring together such areas as anthropology, computational science, ecology, epidemiology, evolution, food science, genomics, geography, global health, mathematics, microbiology, plant science, population biology, sociology, physical environmental sciences, systems science, and veterinary medicine. Research within EEID is expected to generate rigorously characterized and tested models that are of value to the scientific community, but also may be useful in decision-making. The history of the EEID program has shown that the most competitive proposals are those that advance broad, conceptual knowledge that reaches beyond the specific system under study and that may be useful for understanding public, agricultural or ecosystem health, natural resource use and wildlife management, and/or economic development. Such proposals are typically interdisciplinary in their approach and/or the nature of the question(s) being addressed. *Deadline: November 20, 2014 (Anticipated).*

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](#)

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