

March 23, 2016

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Message from the Vice Chancellor for Research

Dear Colleagues:

The 2016 IUPUI Research Day is fast approaching and I would like to extend a personal invitation to each of you to attend this annual celebration of research, scholarship and creative activity on April 8th. This day-long event opens with a plenary session beginning at 9:30 am in the Campus Center Theatre, featuring the announcement of the 2016 Research Trailblazer Award winners, who will present a bite-size overview of their research. This will be followed by a keynote address by NPR's brain science correspondent, Jon Hamilton. Jon's topic is "From Bench to Broadcast: Why Some Science Makes News", and highlights the importance of public perception of our research. The day continues with poster sessions, and tours highlighting some of the state-of-the-art research facilities on campus. New this year are "Research Networking" sessions (think speed dating for academics!), organized in collaboration with our colleagues at IU Bloomington. We will also welcome the Indianapolis community, including groups of high school students, to learn about the cutting edge research and scholarship at IUPUI. I hope to see you there – please go to the Research Day website and register now, and also check out the full schedule of events. It promises to be an exciting day!



Vice Chancellor Simon Atkinson

FEATURE STORY

Indiana University researchers pioneer use of innovative 3D bioprinter

Here's a new recipe for creating living tissue: Impale tiny clumps of cells onto needles, much like miniature shish kebab skewers. Instead of heading to a tiny BBQ grill, you wait while the cells grow together to form the tissue you want -- perhaps skin, or a section of blood vessel.

Researchers at Indiana University are among the first in the United States to have direct access to a 3D bioprinter using that innovative technology to create living tissue, now for use in research laboratories and potentially for use in humans.

Traditional 3D printers create objects in layers by applying a fluid cell-embedding substance ("bio-ink") through a nozzle. The new machine



Kenzan needles of Regenova 3D bioprinter

uses a robot to place the tiny spheres of cells on the needles, carefully arranging them by cell type and location. The spheroids are assembled snugly against each other, enabling them to fuse together into the desired form of tissue.

Scientists will be using the instrument, distributed by the Japanese firm [Cyfuse](#), to conduct research in tissue engineering and regenerative medicine projects in fields ranging from vascular and musculoskeletal biology to dermatology, ophthalmology and cancer, said David B. Burr, Ph.D., associate vice chancellor for research at [Indiana University-Purdue University Indianapolis](#), professor of anatomy and cell biology at the [IU School of Medicine](#) and of biomedical engineering at IUPUI.



Training on the Regenova 3D bioprinter

"We have a large and robust group of investigators in these fields who are interested in 3D bioprinting for aspects of their work," Dr. Burr said. "Having this device positions us, and these investigators, to conduct research and obtain grant funding in new areas that many universities are simply not able to compete for yet."

The Cyfuse printer, named Regenova, uses a small robot to place the tiny spheroids -- each containing about 20,000 cells -- onto the needle array. The types of cells, and their arrangements, vary depending on the tissue needed. Once assembled, the cells "know" how to do the rest, organizing themselves into the tissue needed. When ready, the tissue is removed from the spines.

Cyfuse calls its methodology "kenzan" a reference to the plate with needles -- also called the spiky frog -- used to affix plants in ikebana, the Japanese art of flower arrangement.

"Putting the printer in our hands immensely empowers us to do constructs no one has done before," said Nicanor Moldovan, Ph.D., an adjunct associate professor of biomedical engineering and of ophthalmology and a member of the [Biocomplexity Institute](#) at [IU Bloomington](#).

Dr. Moldovan, whose interest is in tissue engineering, argues that by enabling the cells to create their own external structure -- extracellular matrix -- rather than adding it as "bio-ink," the resulting tissues are much more likely to gain approval from the Food and Drug Administration for human use in the future.

Bioprinting from traditional 3D printers creates some issues. It requires the use of gels to carry cells through the printer nozzle that are compatible with the cells and the tissue being created. Fragments of the biogel remain, which would be seen as foreign, if not toxic, agents. Moreover, Dr. Moldovan said, forcing the gel mixture through the printing tip creates shear forces that can damage the cells.

Other IU researchers with plans for the device include:

- Karl Koehler, Ph.D., assistant professor of otolaryngology-head & neck surgery, who has been working on techniques to create inner ear tissues in a collaboration with Eri Hashino, Ph.D., Ruth C. Holton Professor of Otology. "With our model, we hope to create cranial tissues, such as inner ear and skin," Dr. Koehler said.
- John Foley, Ph.D., associate professor of anatomy and cell biology in Bloomington, plans to use the printer to help with his lab's research into the cellular signaling that produces and maintains the specialized skin of the nipple areola and eventually to regenerate the tissue for use in breast reconstruction following mastectomy.
- Nutan Prasain, Ph.D., assistant research professor in the Wells Center for Pediatric Research, and his team have been using the machine to make blood vessels from umbilical cord blood and induced pluripotent stem cell-derived endothelial colony forming cells in collaboration with Mervin C. Yoder, M.D., Richard and Pauline Klingler Professor of Pediatrics. "We believe these printed vessels could be used as implantable vessels for vascular repair," Dr. Yoder said.
- Melissa Kacena, Ph.D., associate professor of orthopaedic surgery, said that in collaboration with Tien-Min Gabriel Chu, D.D.S., Ph.D., associate dean for research, IU School of Dentistry, and Diane Wagner, Ph.D., associate professor of mechanical engineering at IUPUI, she hopes to use the printer to construct segments of bone for laboratory testing. "Should this approach be successful, in the future we envision using the patients' own cells to create a patient-specific, anatomically shaped bone segment to replace one that is missing due to injury or disease," Dr. Kacena said.
- Hiroki Yokota, Ph.D., professor of biomedical and mechanical engineering, and of anatomy and cell biology, plans to use the instrument to study the bone metastasis of cancer cells, as well as some musculoskeletal applications.

Dr. Burr predicted that the use of bioprinted tissue as replacement tissue following traumatic injury is no more than a decade away. Having such a machine on campus enables researchers to do the necessary hands-on work to create the initial cell constructs and engineer the proper geometries and configurations, he said.

The interest shown by Dr. Moldovan and others in Indianapolis, including Keith March, M.D., director of the Indiana Center for Vascular Biology and Medicine, was instrumental in the agreement reached by Cyfuse and IU, said Cyfuse representative Steven Boikess.

"There is a lot to be learned and gained on both sides from this relationship. I think it's very clear that Cyfuse is passionate about helping the researchers at IUPUI generate the best constructs possible to give the best chance of success," Boikess said.

Under the agreement, IU is leasing the \$450,000 instrument while preparing a National Institutes of Health instrument grant proposal that would enable outright purchase of the machine.

ANNOUNCEMENTS

April 7 is deadline to submit abstracts for Cancer Research Day

The IU Simon Cancer Center is currently accepting abstracts for posters to be presented at Cancer Research Day, Thursday, May 12.

Abstracts should be submitted for one of the following research categories:

- Basic science
- Behavioral
- Population science/epidemiology
- Translational/clinical research

Abstracts will be divided and compared by the following groups within each research category:

- Medical student
- Graduate student
- Post-doctoral/medical fellows
- Research technician
- Clinical nurse
- Faculty (not eligible for cash award)

Visit cancer.iu.edu/education to complete the registration and the abstract template. The deadline to submit is 5 pm, Thursday, April 7. Students, fellows, and faculty conducting cancer research at IUPUI, Indiana University-Bloomington, Purdue University, and the Harper Cancer Research Institute, a collaboration between the IU School of Medicine and the University of Notre Dame, are eligible to present at Cancer Research Day. Cash awards will be given for best poster(s) in each research category, by group. Questions?

Email iusccrd@iupui.edu.

2017-2018 Fulbright U.S. Scholar Program Core Competition now open

Core US Fulbright Scholar Program

The Fulbright Scholar Program offers teaching, research or a combination of teaching/research awards in over 125 countries for the 2017-2018 academic year: <http://www.cies.org/article/2017-2018-core-fulbright-us-scholar-program-competition-opens>

Opportunities are available for college and university faculty and administrators as well as for professionals, artists, journalists, scientists, lawyers, independent scholars and others.

Interested faculty and professionals are encouraged to learn more about these opportunities, and hundreds of others, by visiting the [Catalog of Awards](#).

Application Deadline

The application deadline for most awards is August 1, 2016. U.S. citizenship is required. For other eligibility requirements and detailed award descriptions visit our website at <http://www.cies.org/program/core-fulbright-us-scholar-program> or contact Fulbright at scholars@iie.org.

Fulbright Specialist Program

The Fulbright Specialist Program (FSP) promotes linkages between U.S. scholars and professionals and their counterparts at host institutions overseas. Grant Duration: Two- to six-weeks. Rolling Roster Application Deadline.

<http://www.cies.org/program/fulbright-specialist-program>

Informational Webinars

You can also learn more through informational webinars.

<http://www.cies.org/event-type/webinar-schedule>

Questions

Questions about Fulbright opportunities and be directed to Dr. Leslie Bozeman at 317-274-3812 or lbozeman@iupui.edu.

IUPUI professor's musical recording featured in Oscar-nominated film 'The Revenant'

A musical recording by an [Indiana University-Purdue University Indianapolis](#) faculty member is featured in the Oscar-winning movie "The Revenant."

Scott Deal, a professor of music in the [Department of Music and Arts Technology](#) in the [School of Engineering and Technology](#) and director of [The Donald Tavel Arts and Technology Research Center](#), and a colleague recorded the drum piece "Qilyaun" in 2004. At that time, Deal was teaching at the University of Alaska. The piece had been commissioned by the Fairbanks Symphony Orchestra and written by John Luther Adams, an Alaskan composer.

Their recording of "Qilyaun" was released on a CD in 2007.

Last year, the director of "The Revenant," Alejandro Iñárritu, was searching for music for the film when he asked Adams if he could look through his music catalog. The director selected the drum piece recording along with another work by Adams.

That selection came as a surprise when Deal and his wife, Clara, saw the film in the theater.

"I had an eerie feeling that I recognized some of the music in the movie as I watched it, but I didn't give it a second thought," Deal said. "My wife always likes to watch the film credits at the end of a movie, and this time her credit-reading habit paid off. While watching the credits, Clara grabbed my arm and said, 'There's 'Qilyaun!'"

The drum piece is played for about five minutes in the first battle scene of the movie.



Scott Deal

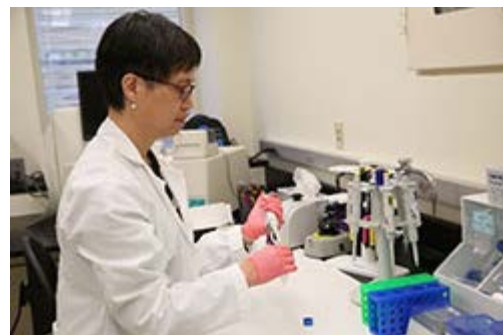
CENTER SPOTLIGHT

New biomedical incubator created to move discoveries from the laboratory to patient care

A new biomedical business incubator created to help life sciences entrepreneurs bring their discoveries to market -- and to patient care -- will mark its official opening Tuesday in downtown Indianapolis.

The [Indiana Center for Biomedical Innovation](#) is located in the former Methodist Research Institute at IU Health Methodist Hospital, which has been updated with modern laboratories and other research resources, collaboration spaces and support services.

"ICBI will be a unique place for entrepreneurial researchers to transform their ideas and discoveries into products," said Jaipal Singh, Ph.D., director of the ICBI. "It is not simply a building where you



ICBI laboratory

incubate your startup. It's a collaborative ecosystem bringing entrepreneurs, life science experts and investors together."

The center is a joint effort supported by the [Indiana University School of Medicine](#), [Indiana University Health](#), the [Indiana Clinical and Translational Sciences Institute](#) and a partner initiative to the already-established [IU School of Medicine's Industry Collaboration Program](#).

"This center, along with the IU Research and Technology Corporation, will now create a seamless mechanism for IU innovations to be easily commercialized," said Dean Jay L. Hess, M.D., Ph.D., dean of the IU School of Medicine and IU vice president for university clinical affairs.

"We believe this will be platform for translation of laboratory discoveries that will ultimately improve health and patient care," said Anantha Shekhar, M.D., Ph.D., director of the Indiana CTSI and executive associate dean for research affairs at the IU School of Medicine.

The Indiana Center for Biomedical Innovation has assembled an advisory council of life sciences leaders and entrepreneurs to provide guidance, mentorship and networks to entrepreneurial faculty, postdoctoral students, grad students and life sciences startup companies. The center also will facilitate access to funding for translational research and technology development from academic labs.

Eight startup companies are the initial tenants at the center, including businesses building on discoveries focusing on post-traumatic stress disorder, emphysema, stroke, heart disease, cancer, regenerative medicine, and pulmonary embolism.

INSTITUTE SPOTLIGHT

Extracting value from chaos: The promise of health information technology

Expectations for health information technology abound. A paper from the Regenstrief Institute takes a sweeping look at a variety of categories of health IT including electronic medical records; health information exchange; telemedicine; patient portals and personal health records; mobile devices, wearable sensors, and monitors; and social media. The authors evaluate current use of these technologies, detail their potential, and discuss barriers that must be overcome to fulfill their promise of improving health.



"The Promise of Information and Communication Technology in Healthcare: Extracting Value from the Chaos" by Regenstrief Institute investigator Burke Mamlin, M.D., and former institute president William Tierney, M.D., is published in the January 2016 issue of *The American Journal of Medical Sciences*.

"When it comes to predicting the future of medicine and health IT, there is no crystal ball. We need to make informed observations based on where we are now and infer the possibilities," said Dr. Mamlin, a [Regenstrief Institute](#) investigator and IU School of Medicine associate professor of clinical medicine. "We can't assume someone else will make the right decisions with health IT. It's going to take everyone's involvement, including providers and patients, to raise expectations and drive the needed changes. This isn't a passive process."

"Getting to a desirable future where health IT is appropriately employed to benefit human health isn't a technical problem -- the technologies already exist. It's a health policy and a sociology problem," said Dr. Tierney. "How do I, as a physician, maintain the same degree of connectedness with my patient when there's a computer in the exam room or if I am seeing a patient via a video connection or answering questions via e-mail or social media? How does the healthcare system that employs me get paid for my time? The rules of engagement are changing." Dr. Tierney currently serves as population health department chair at the Dell Medical School at the University of Texas at Austin and is a Regenstrief Institute-affiliated scientist.

In addition to laying out current status, highlighting the promise, and discussing how to get there for various aspects of health IT, the authors discuss security issues and policy implications. "There is no health care without management, and there is no management without information," they write.

"Too often, health IT designed to emulate paper processes becomes a distraction to care. The promise of health IT is for it to become a valuable part of the healthcare team, a participant in the conversation and not simply a passive tool," Dr. Mamlin said. "And we as physicians must understand its potential and become active

participants in its development or the potential."

More than three-quarters of U.S. hospitals and half of outpatient practices have installed electronic health record systems. "We have come a long way in health IT and communication over the past 15 years and should acknowledge that progress," said Dr. Tierney. "It is propelling us to the future."

As healthcare IT becomes more pervasive, and as technology (Internet access and smart phones, at the very least) becomes part of everyday life for a growing percentage of physicians and patients, both stakeholders are becoming more comfortable with the greater amounts of data available and more demanding of its use in support of health according to Drs. Mamlin and Tierney.

Now is the time for action, they say, for a rational and well-funded national agenda for healthcare IT spearheaded by the federal government. They conclude, "Only then can health care, an information business, maximize the benefits realizable by leveraging existing and rapidly developing information and communication technology. Only then can we extract value from the chaos."

FACULTY SPOTLIGHT

Archaeologist digs deeply to mentor undergraduates

Assistant Professor of Anthropology Jeremy J. Wilson, winner of the 2016 Kathryn J. Wilson Award for Outstanding Leadership and Mentoring of Undergraduate Research, began mentoring college students five years ago with a Center for Research and Learning (CRL) Multidisciplinary Undergraduate Research Institute (MURI) project at the Lawrenz Guns Club site in the central Illinois River valley. Subsequently, Dr. Wilson has mentored 64 individual undergraduate research projects, with 70% of his mentees presenting their research findings at professional conferences, including two MURI projects with eight participants.



Dr. Jeremy Wilson guiding students at a recent dig site.

Wilson expanded his leadership in undergraduate research through garnering one of the first two NSF Research Experiences for Undergraduates (REUs) at IUPUI, a three-year grant that emphasized underrepresented students, providing funds to bring them to the field and IUPUI. Explaining that, "REUs are like MURI on steroids," Wilson remarks, "It was a good feeling to be able to do that, especially with Native American students long underrepresented in archaeology." He continues, "We do targeted excavations complementary to geophysical research and imaging of what's beneath the ground's surface, which limits the impact to sites." Pointing out that career opportunities for such students could include becoming a tribal historic preservation officer (THPO), analogous to a state historic preservation officer (SHPO), he elaborates, "They can use this training and these technologies to *protect* archeological sites as much as to do research on them."

Wilson quotes the late Alfred L. Kroeber (1876-1960), "Anthropology is the most humanistic of the sciences and the most scientific of the humanities," commenting that his own emphasis is on the former of the two. "Training students to conduct original research at the undergraduate level can serve as a springboard to do research in graduate school or propel them into professional careers," Wilson notes. He continues, "It's in doing research you can get a technical skill set that is applicable outside academia."

Noting that most of the training that his colleagues and he provide is multidisciplinary—Wilson has collaborated with geologists, geochemists, and geographers—he argues, "To do really good research you've got to get other experts involved, not just tangentially, but to immerse them in the projects and interacting with the students on a sustained level, actually working side-by-side!"

On the 2016 IUPUI Research Day, which is Friday, April 8, in the Campus Center, Wilson's undergraduate mentees actually will be among the 10,000 attendees at the 81st annual meeting of the Society for American Archeology (SAA) in Orlando. His students will present their research posters at this single largest conference of archeologists in the world.

STUDENT SPOTLIGHT

IUPUI Center for Research and Learning Honors Nine at February Award Luncheon

At a private luncheon in the University Club on Friday, February 26, the IUPUI Center for Research and Learning (CRL) honored eight students and a faculty member, Dr. Jeremy J. Wilson of the Department of Anthropology. Interim Vice Chancellor for Research Simon J. Atkinson conferred upon Jared Richard Thomas of the Purdue School of Science at IUPUI the inaugural Richard E Ward Undergraduate Research Opportunities Program Recognition Award. A Bridges to the Baccalaureate and IUPUI Diversity Scholars Research Program (DSRP) scholar, Jared is a biotechnology major with minors in computer science and philosophy and an aspiring bioethicist. He reminisced, "Dr. Ward was the one who inspired me to continue on when I was in Bridges." Having won poster presentation awards at the 2015 Indiana University Undergraduate Research Conference (IUURC) and the Annual Biomedical Research Conference for Minority Students (ABRCMS) in 2014, Jared says about his mentor, Randall J. Roper, Ph.D., of the Department of Biology, "I don't think without Dr. Roper I would have been this successful. I did a lot of stuff that I've always wanted to do." In the Roper laboratory, Jared investigates the complexity of Down syndrome, of which work he remarks, "It's like a *symphony* to me!"



2016 CRL awardees (left to right) John Flood, Dr. Jeremy J. Wilson, Olivia Howald, Mohammed Al-Juboori and Jared Thomas

Due to the transition from Dr. Ward, the previous CRL Executive Director, who retired July 31, 2015, to current Interim Executive Director Dominique M. Galli, CRL omitted last year's award event; hence for 2016 the Bowling-Jones-Russo Memorial Undergraduate Research Award was presented individually to two students. Mrs. Barbra Bowling presented these two awards to Mohammed Haider Malik Al-Juboori of the Purdue School of Engineering and Technology at IUPUI and Olivia Kay Howald of the Purdue School of Science at IUPUI.

Sophomore biology major Olivia Howald, who is minoring in chemistry, wasted no time in getting involved in undergraduate research. Through the Department of Biology Freshman Work Program, she was matched with then-new faculty member Lata Balakrishnan, Ph.D., and helped set up her laboratory. For over a year now, Olivia has been conducting basic science research in this lab, originally investigating the replication protein A (RPA) in collaboration with John J. Turchi, Ph.D., Professor of Medicine and the Tom and Julie Wood Family Foundation Professor of Lung Cancer Research, and creator of the inhibitor TDRL-551. Olivia also continues the research she began during her 2015 Undergraduate Research Opportunities Program (UROP) Summer Fellows project, studying the acetylation of DNA polymerase beta enzyme which is involved in base excision repair. She loves science and is exploring her options for graduate school.

A biomedical engineering major aspiring to enter either an M.D./Ph.D. program or a neuroscience Ph.D. program, Mohammed Al-Juboori works in the laboratory of Steven Pressé, Ph.D., in the Department of Physics, conducting basic science on the parasitic *Bdellovibrio* bacterium and how it attacks *E. coli*. Relishing interdisciplinary research, what Mohammed appreciates most about this work is the computer that advances the research and in turn the computational modeling generated by its evolving research. Employing a Nikon microscope, painstaking videography, and Superflow beads, they were able to ascertain that the hunter bacterium finds its prey by means of chemotaxis and calcium HEPEs. During summer 2015, Mohammed worked with the Stark Neurosciences Research Institute's Xiaoming Jin, Ph.D in the study of concussion-related epilepsy. Mohammed describes working in the Jin lab with a mouse model and LASER in this manner: "As you stimulate the neurons, it's like a galaxy, it's beautiful. It's a chain reaction, like a shooting star, as the calcium and potassium go back and forth!"

Culminating the award luncheon and ceremony, retired Assistant Vice Chancellor for Research and Founding Executive Director of CRL Kathryn J. Wilson presented certificates to the inaugural cohort of RISE to the IUPUI Challenge Undergraduate Research Scholarship Awardees, Nhan Hieu Do (Engineering and Technology), John Scott Flood (IU School of Liberal Arts at IUPUI), Evan John Rouse (Science), Michael Roy (alumnus, Liberal Arts), and Melanie Elizabeth Scheive (Science).

TRANSLATIONAL RESEARCH IMPACT

Researcher gets \$3M in grants to focus on chronic pain care, informed consent for patient records

An IUPUI researcher was recently awarded \$1.1 million, funded by the U.S. Department of Health and Human Services' Agency for Healthcare Research and Quality, to develop information-based tools to help primary care providers improve care for patients with chronic pain, a condition that affects 100 million Americans at a cost of \$630 billion annually in health care costs and lost worker productivity.

The same researcher, Christopher Harle, Ph.D., has also been awarded a second grant \$1.9 million from the National Institutes of Health -- in collaboration with University of Florida researchers to develop software that will help patients better understand what they are granting access to when they approve use of their electronic health records for research purposes.

Harle is an associate professor in the [Department of Health Policy and Management](#) in the [Richard M. Fairbanks School of Public Health at IUPUI](#).



Chris Harle, Ph.D.

Improving pain care

For his work to build information-based tools to better the care for patients with chronic pain, Harle said his team would begin with these facts:

- Primary care physicians have relatively poor experiences in providing care for chronic pain.
- Patients often report low satisfaction with the chronic pain care they receive in primary care settings.

"A lot of this stems from challenges around chronic pain, which has biological, physical and psychological underpinnings and therefore can be challenging to diagnose and treat effectively," Harle said.

Added to those challenges are apprehensions about long-used opioid therapies due to concerns about misuse and addiction. Harle revealed, "Physicians are shying away from prescribing these medications, which can create challenging interactions with the patient."

"We want to understand at a pretty basic level how clinical work happens for chronic pain in primary care, how a doctor and other health care providers obtain information about patients when it comes to chronic pain, how they use that information at a detailed level, and how they make decisions regarding treatment," he added. "We want to understand those decision-making processes and the information needs of health care providers as well as the information they may not have."

"Our goal is to use that information to design new prototypes for information technology-based clinical decision support," Harle said.

An example of that may be finding that clinicians critically need better tools to collect and track patient-reported outcomes for pain symptoms or day-to-day functionality and feelings of depression and anxiety that often come with pain.

"Maybe we need better systems to collect that data and process it and communicate it to physicians in a way that they can take that information and modify treatment," he opined.

Another useful tool may turn out to be a better system for capturing all of the data related to prescriptions for controlled substances, ensuring primary care physicians have at their fingertips a good way to assess a patient's risk of abusing the medications, Harle said.

Primary care physicians or other providers who might be interested in participating or otherwise collaborating on this research are encouraged to [contact Dr. Harle](#).

Clarifying patient consent

In the second study related to transparency in disclosure to patients of what access they are granting to their health records, researchers have proposed developing an interactive software tool they envision being used in doctors' offices in academic medical centers or other places where research takes place, Harle said.

The interactive software tool would essentially take a patient through an informed-consent process, giving the patient a better understanding of how their electronic health record information could be used in research so that patients can better provide an informed consent. Electronic health records are increasingly being adopted, used and interconnected between different health care systems, he disclosed, and because of that, the idea of

what is in an individual patient's medical record is changing.

"It's potentially much larger and more comprehensive than that file folder you might imagine sitting in your family doctor's filing cabinet," he noted.

An interactive software tool would allow people to be more informed and thus give knowledgeable consent to the use of their health information without overburdening the health care system by requiring significant human involvement.

OVCR INTERNAL GRANT DEADLINES

RESEARCH SUPPORT FUNDS GRANT (RSFG): The Research Support Funds Grant (RSFG) program is designed to enhance the research mission of IUPUI by supporting research projects and scholarly activities that are sustainable through external funding. The next RSFG application deadline is **April 15, 2016**. For grant guidelines and application forms, go to <http://research.iupui.edu/funding/>.

OVCR EVENTS AND WORKSHOPS

Basic Proposal Development

NSF CAREER Series

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

Session 1: General Information & Eligibility

Target Audience: Early Career Faculty in Disciplines Funded by NSF

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

Where: University Library, Room 1126

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

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

Session 2: Panel of Successful Applicants

Target Audience: Early Career Faculty in Disciplines Funded by NSF

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

Where: University Library, Room 1126

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

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

OTHER EVENTS AND WORKSHOPS

Rufus & Louise Reiberg Reading Series featuring Diane Seuss

Date: April 7, 2016

Time: 7:30-9:00 pm

Location: Basile Auditorium, Eskenazi Hall, IUPUI, 735 W New York St, Indianapolis, IN 46202

[Click here to get your free tickets](#)

Diane Seuss was born in Michigan City, Indiana, in 1956 and raised in Edwardsburg and Niles, Michigan. She studied at Kalamazoo College and Western Michigan University, where she received a master's degree in social work. Seuss is the author of three books of poetry: *Four-Legged Girl* (Graywolf Press, 2015); *Wolf Lake, White Gown Blown Open* (University of Massachusetts Press, 2010); and *It Blows You Hollow* (New Issues Press, 1998). She received the Juniper Prize for Poetry for *Wolf Lake, White Gown Blown Open*. Seuss served as the MacLean Distinguished Visiting Professor in the English department at Colorado College in 2012 and is currently writer-in-residence at Kalamazoo College, where she has been on the faculty since 1988.



Support for the Reiberg Reading Series comes from the Reiberg family, the IU School of Liberal Arts at IUPUI, the IUPUI University Library, the IUPUI Office of Academic Affairs, and the IUPUI Division of Undergraduate Education.



Everyday Bias Culture & Conversation

The science and sociology of unconscious bias

Thursday, March 24th

12:00 p.m. - 1:00 p.m.

Medical Science Building (MS) B11

Join us for the Office of Diversity Affairs Culture and Conversation Event: Everyday Bias. This interactive presentation explores the science and sociology of unconscious bias, as well as provides best practices for developing a stronger awareness of our cultural perceptions. Free lunch is provided for those who [register](#).

IAHI The Entanglement Series: "How Do We (re)Make Our Planet?"

Date and Time: April 12, 2016, 7:30-9:00

Location: Indianapolis Central Library, Clowes Auditorium

Cost: Free Admission ([Get your tickets](#))

How have humans reshaped our planet? How do we address the social and environmental consequences of our carbon economy? What will the future of planet earth look like?

James Syvitski and Stephanie Kane visit Indianapolis on April 12 for the IUPUI Arts and Humanities Institute's Entanglements Series. Entanglements brings together scientists, humanists, and artists to discuss "big questions" that affect all of us.

James Syvitski, Executive Director of the Community Surface Dynamics Modeling System and the former Director of the International Geosphere-Biosphere Programme, will join Stephanie Kane, ethnographer and ecologist of the IU School of Global and International Studies, in a conversation that will



James Syvitski, Ph.D.

take us on a journey to answer one of humanity's most pressing questions:
"how do we (re)make our planet?"

Over the course of this evening, Syvitski and Kane will discuss climate change, environmental justice, and how the relationship between biology, society, culture, and technology determines the future of humanity. This will be an event that changes the way you think about your place in the world.



Stephanie Kane, Ph.D.

Stepping Stones of Women in Leadership



Karen West, M.D.
Professor of Surgery, IUSM
2010 Outstanding Woman Faculty Member

Tuesday, April 12 | 11:45 a.m. - 1:00 p.m. | Fairbanks Hall (FS)

The Stepping Stones of Women in Leadership creates a space where all faculty and students can learn about professional development through hearing the personal career journeys of successful women. The next forum in the Stepping Stones of Women in Leadership series features the career journey of Dr. Karen West.

[Register](#) today!

RECENT EXTERNAL FUNDING AWARDS

Grants and Awards – February 2016

PI	Agency	Project Title	School	Department	Total
Geraci, Mark W	NATIONAL HEART, LUNG AND BLOOD INSTITUTE	Pulmonary Hypertension Breakthrough Initiative	MEDICINE	PULMONARY	\$5,591,081
Sullivan, William J.	NATIONAL INSTITUTE ALLERGY & INFECTIOUS DISEASES	Translational control during stage conversion of Toxoplasma, an opportunistic infection of HIV/AIDS	MEDICINE	PHARMACOLOGY & TOXICOLOGY	\$1,953,103
Marrero, David G.	NATIONAL INSTITUTE OF DIABETES, DIGESTIVE & KIDNEY	14/22 Diabetes Prevention Program Outcomes Study (DPPOS) Phase 3 ? Research Project	MEDICINE	ENDOCRINOLOGY	\$1,767,094
Sun, Yang	NATIONAL EYE INSTITUTE	The role of primary cilia in glaucoma pathogenesis	MEDICINE	OPHTHALMOLOGY	\$1,571,000
El-Mounayri, Hazim A	NATIONAL SCIENCE FOUNDATION	Nanotechnology Experiences for Students and Teachers (NEST)	E&T	MECHANICAL ENGINEERING	\$1,061,245
Presse, Steve	NATIONAL SCIENCE FOUNDATION	CAREER: Data-Driven Models for Biological Dynamics	SCIENCE	PHYSICS	\$1,000,001
Barnett, William Kinne	UNIVERSITY OF KANSAS MEDICAL CENTER RESEARCH INSTI	Clinical Data Research Network - Greater Plains Collaborative	MEDICINE	CLINICAL TRANSLAT SCI (CTSI)	\$362,264
Presse, Steve	U.S. DEPARTMENT OF DEFENSE	Multi-Dimensional and Dissipative Dynamical Systems: Maximum Entropy as a Principle for Modeling Dynamics and Emergent Phenomena in Complex Systems	SCIENCE	PHYSICS	\$343,000
Howenstine, Michelle S	CYSTIC FIBROSIS FOUNDATION THERAPEUTICS INC.	Cystic Fibrosis Foundation Therapeutics, Inc. (CFFT) Therapeutics Development Center 2015 Policies and Guidelines Governing Renewal	MEDICINE	PED-PULM CRITICAL CARE/ALLERGY	\$168,721
Howenstine,	CYSTIC FIBROSIS FOUNDATION	IMPLEMENTATION OF THE DEPRESSION AND ANXIETY: AWARD FOR A	MEDICINE	PED-PULM CRITICAL	\$162,000

Michelle S		MENTAL HEALTH COORDINATOR		CARE/ALLERGY	
March, Keith L	UNIVERSITY OF TENNESSEE HEALTH SCIENCE CENTER	Vascular and Neuronal Repair with Adipose Stromal cells in Retinopathy	MEDICINE	CTR FOR VASCULAR BIOLOGY & MED	\$138,032
Pike, Gary Robert	CENTRAL INDIANA COMMUNITY FOUNDATION	Central Indiana Community Foundation (CICF) High School Student Tracker	EDUCATION	EDUCATION	\$124,577
Ashkar, Tarek Maurice	DIALYSIS CLINIC, INC. (DCI)	Understanding the Function of Tamm-Horsfall Protein in Acute Kidney Injury.	MEDICINE	NEPHROLOGY	\$100,000
Delgado-Calle, Jesus	AMERICAN SOCIETY OF HEMATOLOGY	Targeting Notch in multiple myeloma	MEDICINE	ANATOMY & CELL BIOLOGY	\$100,000
Counsell, Steven R.	INDIANA FAMILY AND SOCIAL SERVICES ADMINISTRATION	Design of Medicaid Funded Programs	MEDICINE	GENERAL INTERNAL MEDICINE	\$100,000

CURRENT EXTERNAL FUNDING OPPORTUNITIES

Funding opportunities in this section include selected current grant announcements from federal agencies for new initiatives and changes to existing programs. Announcements with limited scope are not listed here but instead are sent directly to IUPUI School Deans. For comprehensive coverage of funding opportunities, please use the links below to search online tools.

NATIONAL INSTITUTES OF HEALTH

Precision Medicine Initiative Cohort Program Biobank (U24): The purpose of this opportunity is to provide support for a Biobank for the Precision Medicine Initiative® Cohort Program. The goal of the program is to build a research cohort of one million or more U.S. volunteers who are engaged as partners in a longitudinal, long-term effort to transform the understanding of factors contributing to individual health and disease. The PMI Cohort Program Biobank will have the responsibility of establishing state of the art methods and technologies for sample collection, processing, handling, management, storage, and providing all support services needed for biospecimen collection. *Deadlines: Letter of Intent: January 4, 2017; Application: February 4, 2017.* <https://grants.nih.gov/grants/guide/rfa-files/RFA-PM-16-004.html>

CAPSTONE Centers for Multidisciplinary Research in Child Abuse & Neglect (P50): This opportunity will use the specialized research center mechanism (P50) to call for multidisciplinary centers to serve as the CAPSTONE for research and education n child maltreatment and as a resource for the field. The Center(s) will conduct innovative and high quality research including: 1) trials testing the efficacy and effectiveness of clinical interventions; 2) longitudinal prospective studies examining the long term impact of specific and understudied types of maltreatment including abusive head trauma, medical neglect, sexual abuse; 3) studies examining the neurobiology of abuse and neglect and implications for health outcomes; and 4) studies testing the development of screening tools and clinical assessment measures for early identification and treatment of specific types of abuse and neglect to decrease morbidity and mortality and to identify potential comorbidities. The centers are also required to propose a dissemination and outreach core which will provide opportunities for students, faculty at all levels, and lay professionals to be exposed to the educational tools and technologies, research, and expertise within the field of child maltreatment. The format for the outreach and dissemination activities will be tailored to the expertise of the Center and the needs of the community. Finally, the Centers will be encouraged to disseminate information to the broader community through education, grand rounds, conferences and seminars, webinars, materials or other means of communication. *Deadlines: Letter of Intent: December 28, 2016; Application: January. 28, 2017.* <http://grants.nih.gov/grants/guide/rfa-files/RFA-HD-16-002.html>

Collaborative Research in Genomics, Epigenomics, and Bioinformatics (R01): The purpose of this opportunity is to encourage the application of existing and newly emerging genomic, epigenomic, and bioinformatics tools to generate novel insights into the development, progression, and treatment of select disorders in gynecologic health and disease.

In order to focus efforts in the field, the scope is limited to four common gynecologic disorders associated with substantial morbidity and health care costs: 1) Endometriosis; 2) Adenomyosis; 3) Uterine fibroids/leiomyoma; and 4) Pelvic floor disorders including organ prolapse, urinary incontinence, and fecal incontinence in the female. The focus of the application must be on the use of global genomic and epigenomic approaches. Genome-wide association studies (GWAS) with robust sequence analysis are acceptable.

Studies must be adequately powered to detect low frequency alleles. State-of-the-art sequencing technologies and bioinformatics tools should be utilized. Results should be predicted to result in new paradigms regarding disease etiology and progression. In addition, the proposed work should provide resources such as datasets and methodologies that will be of broad value to the gynecologic research community. Mapping the genome/epigenome of normal cells or tissues should only be performed as a control for analysis of diseased or other aberrant cellular states. The use of primary human cells and tissues will take priority. Applicants are strongly encouraged to utilize existing high quality genomic/epigenomic archives and well-characterized human biospecimen banks when available in order to minimize costs and accelerate progress. The addition of a genome/epigenome-wide mapping component to an ongoing clinical or epidemiological study of a relevant disease should be considered. *Deadlines: Letter of Intent: Nov. 16, 2016; Application: December 10, 2016.* <http://grants.nih.gov/grants/guide/rfa-files/RFA-HD-16-003.html>

NIGMS Legacy Community-Wide Scientific Resources (R24): This opportunity supports important "legacy" resources developed as a result of NIGMS research activities that are central to the NIGMS mission and demonstrate a high value to a community of researchers that NIGMS supports, but are no longer eligible for support under their original initiatives. It is also expected that these resources are not eligible for support by other funding opportunities, and not yet self-sustaining or ready for commercialization. For this initiative, a resource is defined as a non-hypothesis-driven activity that is available to any qualified investigator and provides data, materials, tools, or services considered essential to making the most timely, high quality, and cost-efficient progress in a field.

This opportunity is designed to support the continuation of existing resources, not to develop new ones. The support requested must be for funding of maintenance activities only, and not for research activities. Under this limited pilot, only NIGMS-sponsored "legacy" resources that cannot be renewed under their initial funding activity are eligible. *Deadline: October 18, 2016.* <https://grants.nih.gov/grants/guide/pa-files/PA-16-104.html>

NATIONAL SCIENCE FOUNDATION

Tectonics: The Tectonics Program supports a broad range of field, laboratory, computational, and theoretical investigations aimed at understanding the deformation of the terrestrial continental lithosphere. The Program focuses on non-magmatic deformation processes and their tectonic drivers that operate at any depth within the continental lithosphere, on time-scales of decades/centuries and longer, and at micro- to plate boundary/orogenic belt length-scales. The Program also supports research on the structural expression of deformation processes at the surface or at depth, the geological record of continental lithosphere deformation, the rheological properties of continental lithosphere materials, and plate movements and continental reconstructions.

Because understanding continental deformation requires a variety of expertise and methods, the Program supports investigations that engage a wide variety of disciplines. Because of its integrative and interdisciplinary nature, the science supported by the Program may bridge programmatic boundaries with other programs in the Earth Sciences Division and Geosciences Directorate, in which case such research projects may be considered for co-review with other those programs. Projects involving both the terrestrial and marine realms may be jointly considered by the Tectonics and the Marine Geology and Geophysics Programs. Principal Investigators are encouraged to contact the cognizant program officers regarding proposals that may cross disciplinary boundaries before submission. *Deadline: July 27, 2016*

http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=13673

Software Infrastructure for Sustained Innovation: Software Infrastructure for Sustained Innovation (SI²) is a long-term investment focused on realizing a portion of the Cyberinfrastructure Framework for 21st Century Science and Engineering (CIF21) vision and catalyzing new thinking, paradigms and practices in science and engineering. CIF21 envisions a linked cyberinfrastructure architecture that integrates large-scale computing, high-speed networks, massive data archives, instruments and major facilities, observatories, experiments, and embedded sensors and actuators, across the nation and the world, and that enables research at unprecedented scales, complexity, resolution, and accuracy by integrating computation, data, and experiments in novel ways.

The SI² program includes three classes of awards: 1) **Scientific Software Elements (SSE):** SSE awards target small groups that will create and deploy robust software elements for which there is a demonstrated need that will advance one or more significant areas of science and engineering; 2) **Scientific Software Integration (SSI):** SSI awards target larger, interdisciplinary teams organized around the development and

application of common software infrastructure aimed at solving common research problems faced by NSF researchers in one or more areas of science and engineering. SSI awards will result in a sustainable community software framework serving a diverse community or communities; and 3) **Scientific Software Innovation Institutes (S²I²)**: S²I²s are an integral part of the SI² software ecosystems and focus on the establishment of long-term hubs of excellence in software infrastructure and technologies, which will serve a research community of substantial size and disciplinary breadth. The outcomes of S²I² go beyond the software itself, including the software development infrastructure and process, successfully responding to science challenges, and enabling transformative new science. *Deadline: June. 3, 2016.*

https://www.nsf.gov/publications/pub_summ.jsp?ods_key=nsf15553

Improving Undergraduate STEM Education (IUSE): The IUSE program invites proposals that address immediate challenges and opportunities that are facing undergraduate STEM education, as well as those that anticipate new structures (e.g. organizational changes, new methods for certification or credentialing, course re-conception, cyberlearning, etc.) and new functions of the undergraduate learning and teaching enterprise. The IUSE program recognizes and respects the variety of discipline-specific challenges and opportunities facing STEM faculty as they strive to incorporate results from educational research into classroom practice and work with education research colleagues and social science learning scholars to advance our understanding of effective teaching and learning.

Toward these ends the program features two tracks: (1) Engaged Student Learning and (2) Institutional and Community Transformation. Two tiers of projects exist within each track: (i) Exploration and (ii) Design and Development. These tracks will entertain research studies in all areas. In addition, IUSE also offers support for a variety of focused innovative projects that seek to identify future opportunities and challenges facing the undergraduate STEM education enterprise. *Deadline: November 3, 2016.*

http://www.nsf.gov/publications/pub_summ.jsp?ods_key=nsf15585

U.S. Department of Commerce (NIST)

Research and Evaluation on Institutional Corrections: NIST is soliciting applications for National Network for Manufacturing Innovation (NNMI) Institute Awards from to establish and operate a Manufacturing Innovation Institute in an area of U.S. advanced manufacturing national need. Proposed Institutes in any area of advanced manufacturing will be considered so long as they do not duplicate the technical scope and programs of both existing programs of federally funded Institutes within the National Network for Manufacturing Innovation (NNMI), and technical focus area(s) that are identified within any in-progress Institute funding opportunity announced by a federal agency.

The purpose of the NNMI Program is to: a) Improve the competitiveness of U.S. manufacturing and increase the production of goods manufactured predominantly within the U.S.; b) Stimulate U.S. leadership in advanced manufacturing research, innovation, and technology; c) Facilitate the transition of innovative technologies into scalable, cost-effective, and high-performing manufacturing capabilities; d) Facilitate access by manufacturing enterprises to capital-intensive infrastructure, including high-performance electronics, computing, and the supply chains that enable these technologies; e) Accelerate the development of an advanced manufacturing workforce; f) Facilitate peer exchange and documentation of best practices in addressing advanced manufacturing challenges; g) Leverage non-Federal sources of support to promote a stable and sustainable business model without the need for long-term Federal funding; and h) Create and preserve jobs. The NNMI Program consists of three essential parts: "Centers for Manufacturing Innovation;" the "Network for Manufacturing Innovation;" and the "National Office of the Network for Manufacturing Innovation Program." *Deadlines: Pre-Application: April 20, 2016; Application: July 22, 2016.*

<http://www.grants.gov/web/grants/view-opportunity.html?oppId=281622>

U.S Dept. of Defense (DARPA)

Biological Control: The objective of the DARPA Biological Control program is to build new capabilities for the control of biological systems across scales--from nanometers to centimeters, seconds to weeks, and biomolecules to populations of organisms--using embedded controllers made of biological parts to program system-level behavior. This program will apply and advance existing control theory to design and implement generalizable biological control strategies analogous to conventional control engineering, for example, for mechanical and electrical systems. The resulting advances in fundamental understanding and capabilities will create new opportunities for engineering biology.

Specifically, the Biological Control program will demonstrate tools to rationally design and implement multiscale, closed-loop control of biological systems, through the development of biological controllers, testbeds to evaluate control of system-level behavior, and theory and models to predict and design effective control strategies. The resulting capabilities will be inherently generalizable to a variety of biological systems. Successful teams will integrate and apply these capabilities to demonstrate a practical proof-of-principle biological solution to a proposer-defined application relevant to the U.S. Department of Defense (DoD). *Deadline: April 29, 2016.* <http://www.grants.gov/web/grants/view-opportunity.html?oppId=281618>

U.S. Dept. of Health and Human Services

BRAIN Initiative: Next-Generation Invasive Devices for Recording and Modulation in the Human Central Nervous System (U44): The purpose of this opportunity is to encourage small business concerns (SBCs) to pursue translational non-clinical studies and clinical studies for recording and/or stimulating devices to treat nervous system disorders and thereby better understand the human brain. The program will utilize a cooperative agreement mechanism to support the non-clinical studies necessary for the submission of an Investigational Device Exemption (IDE) for a Significant Risk (SR) study or to obtain Institutional Review Board (IRB) approval for a Non-Significant Risk (NSR) study, and the subsequent small clinical study (e.g., Early Feasibility Study).

Activities supported in this program include implementation of clinical prototype devices, non-clinical safety and efficacy testing, design verification and validation activities, and pursuit of regulatory approval for, and implementation of, a single small clinical study. The small clinical study should provide data to answer key questions about the function or final design of a device. This final device design may require most, if not all, of the non-clinical testing on the path to more advanced clinical trials and market approval. The clinical study is expected to provide information that cannot be practically obtained through additional non-clinical assessments (e.g., bench top or animal studies) due to the novelty of the device or its intended use. *Deadline: April 26, 2016.* <http://grants.nih.gov/grants/guide/rfa-files/RFA-NS-16-011.html>

U.S. Dept. of Justice

Research and Evaluation on Institutional Corrections: This opportunity seeks innovative research proposals to empirically assess pressing issues in institutional corrections. Applicants should submit proposals that address one of the three categories identified below. Application titles should clearly indicate the category selected: 1) Advancing science: Responding to the National Academy of Sciences (NAS) Report, The Growth of Incarceration in the United States: Exploring Causes and Consequences; 2) Understanding the use of restrictive housing (2a. An examination of the use of restrictive housing in State and/or federal prisons. 2b. Assessing the use of restrictive housing in jails. 2c. Understanding the impact of restrictive housing on the mental health of inmates and staff in prison, and how working in restrictive housing varies from working in the general population. 2d. A review of step-down programs available in restrictive housing environments in U.S. prisons and jails.); and 3) An examination of correctional officer safety and wellness: The impact of fatal and non-fatal work-related injuries on the corrections institution.

Applicants interested in submitting research proposals that focus on community corrections are encouraged to submit proposals to NIJ's "Community Corrections: Technology Research, Development and Evaluation to Improve Supervision and Outcomes" solicitation. *Deadline: May 17, 2016.* <http://www.grants.gov/web/grants/view-opportunity.html?oppId=281600>

NOTE: All faculty, researchers, and scientists on continuing contracts at IU interested in applying for Department of Defense funding are eligible for assistance by the consulting firm Cornerstone Government Affairs, arranged by the Vice President for Research. Those interested in securing assistance from Cornerstone must submit a two-page summary of their research project and a CV or biosketch to the VP for Research Office at vpr@iu.edu. Prior to submission, the IUPUI Office of the Vice Chancellor for Research offers assistance with the two-page summaries. For more information, contact Ann Kratz, akratz@iupui.edu.

IDENTIFYING FUNDING OPPORTUNITIES

On-line search tools are available to IUPUI investigators who are interested in identifying funding opportunities

in their areas of interest.

Community of Science (COS): 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.

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