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RESEARCH ENTERPRISE NEWSLETTER

November 17, 2017

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FEATURE STORY

IUPUI receives NSF grant to enhance geosciences education, expand community engagement



Gabriel Filippelli

A three-year, \$428,000 grant from the National Science Foundation will enable IUPUI researchers to enhance geosciences education and inspire future solutions to community problems. The endeavor is designed to engage undergraduates, especially those typically unrepresented in the study of the Earth and its environment, such as first-generation college students and students of color.

The novel IUPUI program, which will be made available to colleges and universities across the nation, benefits both undergraduates and the communities in which they live as well as encourages the pursuit of geosciences careers.

"Most undergraduates with an interest in science, especially those who attended urban public schools, discover earth and environmental sciences too late to select these fields as majors, meaning they seldom go into geosciences careers," said the NSF grant's principal investigator, Gabriel Filippelli, a professor of earth sciences in the [School of Science](#).

"These students often have no conception that there is a connection between training in geosciences and the ability to improve their communities, cities and states.

"With our new program, we hope to recruit, retain and empower students to use the geosciences to work on and solve problems in the soil, water and air that surround them," he said.

Filippelli, who is also the newly named editor-in-chief of the journal *GeoHealth*, is an internationally respected researcher and educator in the field of medical geology. He is the founding director of IUPUI's Center for Urban Health and received the IUPUI Chancellor's Award for Civic Engagement in 2013 and the Charles R. Bantz Chancellor's Community Fellowship in 2017. Among his many interests is lead in the urban environment, including the soil and air.

The new IUPUI educational program will use targeted mentoring, course material focusing on real-world problems and proactive community engagement. Highlights include:

- Early exposure for students to the geosciences, with the opportunity to explore environmental justice inside and outside of the classroom through an IUPUI themed learning community.
- Specially designed hybrid classroom-field modules inserted into existing Department of Earth Sciences courses to increase student interest in community involvement and geosciences careers.
- A fellowship program in which any undergraduate can apply for a small grant to conduct an earth or environmental sciences-related project with an actively engaged community partner.

Co-principal investigators on the NSF grant are professor of earth sciences Pierre-André Jacinthe, director of IUPUI's Center for Earth and Environmental Sciences and an expert in biogeochemistry; associate professor of earth sciences Kathy J. Licht, a 2017 recipient of the IUPUI Trustees Teaching Award and an expert in glacial geology; associate professor Gregory Druschel, an expert in geochemistry; assistant professor of earth sciences Lixin Wang, an ecohydrologist; and Justin L. Hess, assistant director of IUPUI's STEM Education Innovation and Research Institute.

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ANNOUNCEMENTS

Chemist Pratibha Varma-Nelson honored by American Chemical Society as outstanding educator



Pratibha Varma-Nelson

Pratibha Varma-Nelson, professor of chemistry and founding director of the [STEM Education Innovation and Research Institute at IUPUI](#), has been named the 2018 recipient of the George C. Pimentel Award in Chemical Education, sponsored by Cengage Learning and the American Chemical Society, or ACS. The prestigious award will be presented in March 2018 at the 255th ACS National Meeting in New Orleans.

Varma-Nelson is internationally respected for her leadership in promoting active learning of chemistry that engages students in collaborative problem-solving and critical thinking under the guidance of a peer leader. She is a strong advocate for transforming traditional pedagogical methods to peer-led models in both face-to-face and online environments. She joined IUPUI in 2008 following two years at the National Science Foundation.

"Lecturing without providing students time to construct their own knowledge is really not teaching," said Varma-Nelson, who started her own teaching career by teaching as she was taught, which was primarily through lectures. She said she later realized that only a small number of students succeed in learning by listening to lectures.

"If we want to broaden the pool of students who get excited about chemistry and select a chemistry-related career, we need to make the learning environment more collaborative and accessible to students from diverse backgrounds," said the professor, who is also the former director of IUPUI's Center for Teaching and Learning. "Students and faculty should work as partners in constructing learning environments that

promote understanding of content."

Varma-Nelson's efforts to promote active learning by bringing Peer Led Team Learning, or PLTL, and Cyber Peer Led Team Learning, or cPLTL, to a variety of undergraduate science, technology, engineering and math disciplines have influenced how chemistry and other STEM courses are currently taught at colleges and universities across the United States and abroad. Representatives of some of these programs will participate in a chemistry education symposium to be convened in her honor at the ACS gathering in March.

Varma-Nelson has also been involved in designing research into the effect of PLTL on both students and peer leaders. Her latest research into the use of PLTL in cyberspace examines the differences between face-to-face and synchronous online PLTL sessions. Her work has revealed more similarities than differences between the benefits of PLTL in these two environments. This research is one of the few published studies to compare pedagogies in face-to-face versus online courses.

Earlier this year, Varma-Nelson was named an ACS fellow in recognition of her outstanding achievements in -- and contributions to -- science and the profession and for her service to the ACS, the world's largest scientific society. Her work has been supported by the National Science Foundation, the Bill and Melinda Gates Foundation, and IUPUI.

"The School of Science is so proud that Dr. Varma-Nelson's work in chemistry education is being recognized by this prestigious award," said Simon Rhodes, dean of the school. "Her innovation well represents the commitment of School of Science faculty to student success and the impact this has on our state and beyond."

Enhanced Mentoring Program with Opportunities for Ways to Excel in Research (EMPOWER)



EMPOWER

The IUPUI Office of the Vice Chancellor for Research and the IUPUI Office for Women invite you to apply for the Enhanced Mentoring Program with Opportunities for Ways to Excel in Research (EMPOWER).

EMPOWER provides support to IUPUI faculty who are historically underrepresented and/or excluded populations in their discipline or area of scholarship and historically denied admission to higher education or that discipline, 1) to become successful in sponsored research and scholarly activity, and 2) to achieve significant professional growth and advancement. The program sustains mentorship opportunities through the EMPOWER Grant Program, supporting achievement of excellence in research and scholarly activity, and optimal attainment of academic career goals and objectives.

[Click here to read more about EMPOWER](#)

Application Open for 2018-2019 Charles R. Bantz & Community Fellowship Award and Scholar Award



Charles R. Bantz

In 2015 in recognition of the leadership and contributions of Charles R. Bantz to the IUPUI campus and Indianapolis community IUPUI established the Charles R. Bantz Chancellor's Community Fellowship . This grant initiative reflects Charles Bantz's dedication to research that embraces community-driven goals, creates university-community partnerships, and results in community impact. With support from IUPUI, individual donors, and the Office of the Vice Chancellor for Research, the Bantz Community Fellowship Award and Bantz Community Scholar Award support community-engaged research and scholarly activities that:

- Reinforce and deepen campus-community engagement and research partnerships;
- Leverage the knowledge, skills, and innovative talents of IUPUI faculty, students, and community partner(s) in a year-long scope of work that is of mutual value and interest;
- Result in meaningful community impact.

Eligibility: The Bantz Community Fellowship and Bantz Community Scholar awards provide up to one year of research support for a collaborative research team made up of faculty, staff, student(s), and community partners/members to address a pressing community issue in Central Indiana. Research teams must be led by a full-time faculty member who will serve as the Primary Investigator on the project. To be eligible to serve as PI on a Bantz Community Fellowship or Bantz Scholar team, the PI-faculty member must have a full-time appointment (Tenured, Tenure-track, Clinical Faculty or Lecturer). Collaborative teams must include graduate and/or undergraduate students (full-time enrollment in an IUPUI program, in good academic standing), and designated community partner(s) who have been actively engaged in shaping the proposed goals.

Expectations:

- The Bantz Community Fellowship Award is intended to support and advance an established researcher, research team, and research agenda to further an existing national or local reputation for

that research.

- The Bantz Community Scholar Award is intended to support and encourage a new or promising researcher, research team, and research agenda to impact community-driven goals and advance their own research agenda.

Award Process: Both awards, the Bantz Community Fellowship Award and Bantz Scholar Award, will be determined through a competitive selection process on an annual basis. The selection committee is comprised of faculty and community-engaged scholars, campus administrators, prior Bantz Awardees, and community partners. Awardees will be notified by the IUPUI Chancellor in March 2018.

Applications: Applicants to the Charles R. Bantz Chancellor's Community Fellowship Award must complete all sections of the application form. Applications are due by 5:00 pm, Monday, January 15, 2018. Click on the Bantz Community Fellowship and Scholarship 2018-2019 to (1) preview a PDF of the application, and (2) to begin a formal application. Applicants may request up to \$40,000 for the Bantz Fellowship, or up to \$25,000 for the Bantz Scholar Award. Both awards require additional cash or in-kind match (minimum 20%) from the school, community partner, and/or other grants and partners. Applicants to the Charles R. Bantz Chancellor's Community Fellowship must complete all sections of the application form. Applications are due by 5:00 pm, Tuesday, January 16, 2018.

For more information:

- Fellowship and Scholar Award Program Questions - Teresa A. Bennett, Assistant Vice Chancellor for Community Engagement, Office of Community Engagement, tkbennet@iupui.edu
- Academic/Faculty Advice - Julie Hatcher, Executive Director, Center for Service and Learning, Division of Undergraduate Education, jhatcher@iupui.edu

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CENTER SPOTLIGHT

Researchers to develop real-world advance care planning program with nursing homes

The National Institute on Aging has awarded two researchers at IUPUI a \$400,000 grant to work with nursing homes to design a real-world program to provide systematic, high-quality



Kathleen Unroe, left, and Susan Hickman. Photo courtesy of the IU Center for

Aging Research - [Print-Quality Photo](#)

advance care planning for nursing home patients with Alzheimer's disease and related dementias.

The initial grant will be followed by a \$3 million second phase of funding if the pilot testing is successful. The multistate project involving about 200 nursing homes aims to integrate advance care planning into the day-to-day workflow of a nursing home. It will provide staff with the tools and

knowledge necessary to support decision-making for nursing home patients with dementia and their families.

The project's goal is to develop and evaluate the program in the clinical setting, rather than through a tightly controlled research trial, said Susan Hickman, an Indiana University School of Nursing professor and co-director of the IUPUI Research in Palliative and End-of-Life Communication and Training, or RESPECT, Signature Center. "We are excited to work with our nursing home partners to create something that fits well within the existing nursing home culture.

Once the program is developed, a second phase of funding will support the evaluation of the intervention. The nursing homes will implement the program as a new clinical program, with the researchers evaluating how the program affects important outcomes like hospitalization rates.

"Our intent is to support nursing homes in providing care through a pragmatic program that helps staff identify the goals and values of patients with dementia and their family members. This will give patients the opportunity to plan in a way that allows for more-seamless care," Hickman said.

The project is co-led by Hickman and Dr. Kathleen Unroe, an IU Center for Aging Research scientist, Regenstrief Institute investigator and IU School of Medicine associate professor of medicine.

Advance care planning is an ongoing process in which patients, their families and their health care providers reflect on the patient's goals, values and beliefs to support decision-making about current and future medical care. It includes identifying preferences for treatment such as whether a nursing home resident prefers to be transferred to the hospital, be admitted to an intensive care unit or be given a feeding tube.

"It's not one-size-fits-all," Unroe said. "There are choices and values that should play into these decisions."

The need for advance care planning is particularly apparent in nursing home settings where a majority of people have cognitive impairment, Unroe said. "Research has shown that families often prefer care focused on comfort, but the default is aggressive medical treatment that may not be consistent with a patient's preference. Yet too often, we fail to ask what people want."

The new program will serve all residents in the nursing homes but will focus on those with Alzheimer's or related dementia, who represent a majority of long-stay nursing home residents.

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FACULTY SPOTLIGHT

School of Education associate professor receives \$2.75 million grant for ESL teacher preparation



Annela Teemant

Improving educational opportunities for multilingual students has never been more important than now. [The IUPUI School of Education](#) is ready to become a major player in providing those opportunities. Annela Teemant, an associate professor in second language education at the School of Education, has been awarded a \$2.75 million U.S. Department of Education grant. The grant will span five years and include partnerships with three Central Indiana school districts and Indianapolis' Global Preparatory Academy.

Funds will support the preparation of English as a Second Language specialists, leaders and general educators in making individual and institutional change that is radical, measurable and replicable for improving education outcomes for English learners.

"We don't need incremental changes; we need radical change in how we engage students in learning and welcome families and communities into our schools," Teemant said. "This funding allows me to implement a districtwide English-learner agenda for change that impacts institutional practices and all teachers."

The professional development offered is multidimensional, collaborative and inter-institutional. The grant will allow educators to complete ESL certification; complete leadership academies; and engage in coach preparation and individual, peer and team coaching. Also, parents, families and community members will be able to participate in school-based equity projects and regional conferences.

This grant will continue Teemant's previous work in the field, which includes two previous federal grants to support ESL programs across Central Indiana. "This is my 18th year in Avon, and there is not one other initiative that we have participated in that has had such widespread impact on schools and the community," said Angela P. Rasor, curriculum coordinator for Avon Community School Corporation. "This grant will carry us even further, and Avon schools will be forever changed."

Professional-development offerings will focus on whole-school reform using a multiyear focus on individual, peer and team coaching and workshops focused on pedagogy, culturally responsive curriculum development, teacher leader development and team coaching. IUPUI School of Education professors Gina Yoder, Cleveland Hayes, Cristina Santamaria-Graff and Monica Medina will collaborate on the development of a parent-family-community engagement initiative and two regional conferences.

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STUDENT SPOTLIGHT

Research translates to real-life success for student Isaac Lamb



Isaac Lamb

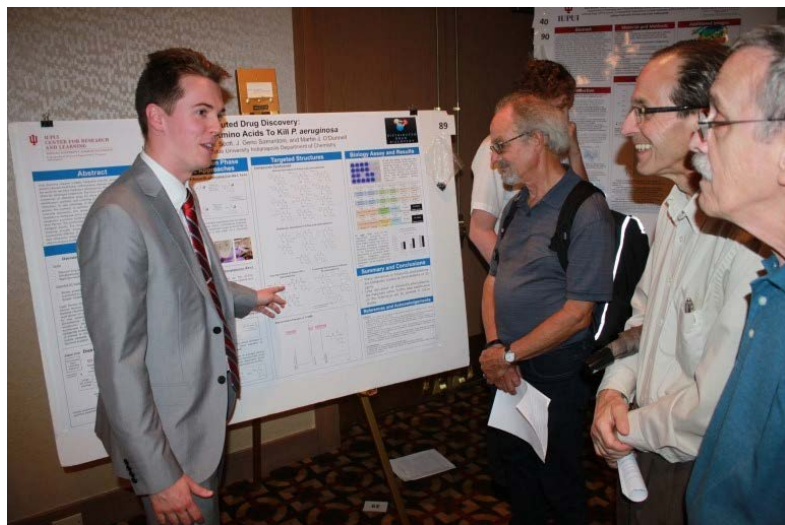
Nothing beats real-life experience, particularly when it comes to developing marketable skills. While it will be a few more years before he hits the job market, it's no different for IUPUI's Isaac Lamb.

A biology and neuroscience double major, Lamb wasted little time setting himself up for medical school. He secured his first research opportunity even before taking his first class in the [School of Science](#) at IUPUI, and he has continued to add to his experience with each passing year.

As a first-year student, Lamb was in the Biology Freshman Work Program, learning the fundamentals of lab management, mixing solutions and cleaning. A year later, he joined the Sears Lab at the Indiana University School of Medicine under the watchful eye of [Dr. Catherine R. Sears](#), an opportunity he seized through the [Life-Health Sciences Internship](#) program.

He continued working at the Sears Lab as a junior, but he also joined the [Distributed Drug Discovery Lab](#)

with the Department of Chemistry and Chemical Biology after taking an organic chemistry class. And now he's completing a research project for his senior neuroscience capstone.



Isaac Lamb presented some of his research at an IUPUI Center for Research and Learning symposium last summer. Photo courtesy of Isaac Lamb

With each of those opportunities, Lamb is investigating DNA proteins with immunofluorescence microscopy to find ways to fight emphysema and other lung diseases. He is identifying chemical compounds that could lead to low-cost antibiotics to treat "orphan diseases," those that largely affect people in developing countries due to the prohibitive expense of developing drugs. And he's laying a foundation that, in the long run, could reduce birth defects in babies born to women using antidepressants.

networking opportunities and experience that helped earn him early admission to the IU School of Medicine -- are actually easier to grasp.

If the technical seems overwhelming, the less-tangible results of his research -- job skills,

"I find it rewarding. I think it's helped me with my academics," said Lamb, who is also a member of the [Honors College](#) and a [Bepko scholar](#). "There's a lot that I experience in my classes that I get to use in the lab. It helps me retain information, too. Things I learned previously come back in my research. It's kind of like a refresher, and it's sharpened because I have a real-life application of it."

[Click here to read full story](#)

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TRANSLATIONAL RESEARCH IMPACT

Research investigates how parent incarceration affects children

Indiana has the second highest state rate of incarceration in the country, largely due to the uptick in illegal opioid use, leaving more than 1 in



incarceration

10 children with at least one parent behind bars. [Research](#) suggests having an incarcerated parent may negatively impact a child’s behavioral, emotional and physical health, also putting the child at an increased risk to suffer from anxiety, learning disabilities and ADD/ADHD.

A community-led study based in Indianapolis hopes to better understand the correlation between parental incarceration and its effects on a

child’s overall health. [IU School of Medicine](#) researcher and professor of clinical pediatrics [Angela Tomlin, PhD](#), has teamed up with other researchers and community partners to find potential solutions for children who are left behind.

“All too often, an incarcerated parent is a child’s first strike against them,” said Tomlin. “The early years of a child’s life are the most important for their overall development, and we want to make sure these children are able to establish supportive relationships outside of the home as a means to help them thrive.”

Read the [IU School of Medicine blog post](#) for more on this research

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OVCR INTERNAL GRANT DEADLINES

IUPUI Arts and Humanities Internal Grant (IAHI):

The IAHI Grant Program supports campus-wide attainment of excellence in research and creative activity in arts and humanities. It is designed to enhance the research and creative activity mission of IUPUI by supporting research projects and scholarly activities that are conducted by arts and humanities faculty. The program is intended to stimulate existing and new research and creative activity and to support faculty in becoming competitive in securing external funding and sponsorship.

The next IAHI application deadline is February 15

Apply to this program through the [InfoReady portal](#).

Download the Guidelines and Application.

Applications are to be submitted as one pdf file.

Release Time for Research (RTR):

IUPUI maintains a robust research enterprise. This funding mechanism allows IUPUI faculty a "buy out" of teaching time to adequately prepare competitive proposals for quality research and scholarly activity.

The next RTR application deadline is February 15

Apply to this program through the [InfoReady portal](#).

Download the Guidelines and Application.

Applications are to be submitted as one pdf file.

Research Support Funds Grant (RSFG):

The Research Support Funds Grant (RSFG) program is designed to enhance the research mission of IUPUI by supporting research projects and scholarly activities that are sustainable through external funding.

The next RSFG application deadline is April 1.

Apply to this program through the [InfoReady portal](#).

Download the Guidelines and Application.

Applications are to be submitted as one pdf file.

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OTHER INTERNAL GRANT DEADLINES

2018 Curriculum Enhancement Grant RFP Now Available

The Curriculum Enhancement Grant (CEG) provides faculty with technical and instructional support, time, and funds to implement projects designed to improve student learning and success at IUPUI and IUPU Columbus. In addition, the grants seek to enhance the conversation about scholarly teaching on campus and increase the practice of the scholarship of teaching and learning. The grant supports a wide

range of faculty projects designed to improve student learning and success.

[See the 2018 Curriculum Enhancement Grant Request for Proposals](#) for more information.

The deadline for proposal submissions is Friday, January 26, 2018.

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OVCR EVENTS AND WORKSHOPS

INDIANA CTSI Annual Meeting: Global to Local Health



Indiana CTSI

You're invited to the [Indiana Clinical and Translational Sciences Institute's ninth annual meeting](#) from 8 a.m. to 3 p.m. on Friday, Dec. 8, 2017, at IUPUI's Hine Hall in Indianapolis. This year's event will focus on "Global to Local Health" and feature scientific presentations, panel discussions, networking opportunities, a poster session and keynote addresses by Dr. Dan

Hartman of the Bill and Melinda Gates Foundation and Dr. Peter Agre, winner of the 2003 Nobel Prize in Chemistry.

[Register now](#)

KEYNOTE SPEAKERS



Dan Hartman, MD, joined the Bill and Melinda Gates Foundation in 2012 as the director of Integrated Development and leads a team that provides technical expertise in product development. In 2016, he added the role of interim director of malaria, guiding foundation efforts towards eradication.

[Read more about Dan Hartman](#)

Peter Agre, MD, is a Bloomberg Distinguished Professor and director of the Malaria Research



Institute at Johns Hopkins University. In 2003, Dr. Agre shared the Nobel Prize in Chemistry for discovering aquaporins, a family of water channel proteins implicated in multiple clinical disorders.

[Read more about Peter Agre](#)

IN Ag Industry and Rural Community: Opioid Addiction Symposium

Date/Time: 01/05/2018 8:30 am - 4:00 pm

Location: Boone County Fairgrounds, Witham Exhibit Hall

Strong rural communities are a critical component to the success of businesses, small and large, that call the areas outside major metropolitan areas home. What happens when those communities are impacted by a crisis? Unlike weather-related events or even a market dip, this crisis is a preventable problem: Opiate addiction.

Understanding the impact on business economics, community services, law enforcement and the overall health of the county population is a start to community conversations that can lead the way to positive outcomes. Join us in this much needed conversation and learn more about the true impact and the opportunities for action.

Keynote speakers:

Lt. Governor Suzanne Crouch will kick off the day's program followed by these powerful experts:

Sam Quinones, author, *Dreamland, The True Tale of America's Opiate Epidemic*

Jim McClelland, Executive Director for Drug Prevention, Treatment, and Enforcement, Office of Governor Eric J. Holcomb, State of Indiana

Anne Hazlett, Assistant to the Secretary for Rural Development, USDA

[Click HERE to view full Agenda](#)

RECENT EXTERNAL FUNDING AWARDS

Grants and Awards – October 2017

PI	Agency	Project Title	School	Department	Total
Asirwa, Fredrick Chite	ELI LILLY AND COMPANY FOUNDATION	AMPATHBREAST & CERVICAL CANCER CONTROL PROGRAM (ABCCCP) Improving access to community- based cancer prevention, screening, diagnostics & care in Western Kenya	MEDICINE	CANCER CENTER	\$3,500,000
Xu, Xiao-Ming	NATIONAL INSTITUTE NEUROLOGICAL DISORDERS & STROKE	Modulation of lumbar motor circuitry after an above-level SCI and NT-3 gene therapy	MEDICINE	NEUROLOGICAL SURGERY	\$1,936,957
King, David Patrick	LILLY ENDOWMENT INCORPORATED	National Study of Congregations' Economic Practices Project	LILLY FAMILY SCHOOL OF PHILANTHROPY	PHILANTHROPY	\$1,670,000

Ashkar, Tarek Maurice	NATIONAL INSTITUTE OF DIABETES, DIGESTIVE & KIDNEY SCIENCE	Understanding the Function of Tamm-Horsfall Protein in Acute kidney Injury.	MEDICINE	NEPHROLOGY	\$1,623,776
Chen, Peng-Sheng	NATIONAL CENTER FOR ADVANCING TRANSLATIONAL SCIENCE	Subcutaneous nerve stimulation for arrhythmia control.	MEDICINE	CARDIOLOGY	\$1,353,096
Goff, Philip Kevin	LILLY ENDOWMENT INCORPORATED	YOUNG SCHOLARS IN AMERICAN RELIGION	LIBERAL ARTS	LIBERAL ARTS	\$1,151,493
Conway, Simon J	NATIONWIDE CHILDREN'S HOSPITAL	Mechanisms of cardiac and pulmonary fibrosis in relation to TGF β signaling and miR- 145 function	MEDICINE	PED-PULMONARY BASIC RESEARCH	\$896,314
Sullivan, William J.	UNIVERSITY OF SOUTH FLORIDA	Developmental switches regulating tissue cyst formation	MEDICINE	PHARMACOLOGY & TOXICOLOGY	\$715,075
Greene, Marion S	INDIANA DIVISION OF MENTAL HEALTH AND ADDICTION	State Epidemiological Outcomes Workgroup (SEOW)	PUBLIC HEALTH	HEALTH POLICY & MANAGEMENT	\$704,200
Basile, David Patrick	NATIONAL INSTITUTE OF DIABETES,	Long-term effects of acute renal	MEDICINE	CELLULAR & INTEGRATIVE PHYSIO	\$516,769

DIGESTIVE & KIDNEY failure

Foroud, Tatiana M	COLUMBIA UNIVERSITY	The National Institute on Aging (NIA) Late Onset of Alzheimer's Disease (LOAD) Family Based Study (FBS)	MEDICINE	MEDICAL & MOLECULAR GENETICS	\$472,500
Tune, Johnathan David	ELI LILLY AND COMPANY	Modulation of Cardiovascular Function in Obese Heart Failure	MEDICINE	CELLULAR & INTEGRATIVE PHYSIO	\$387,080
Warden, Stuart J	GENERAL ELECTRIC COMPANY	Activities and factors influencing the magnitude and distribution of tibial bone strains in basketballers	HEALTH/REHABILITATION SCIENCES	HEALTH & REHAB	\$299,922
Elbert, Shawnte McMillian	INDIANA DIVISION OF MENTAL HEALTH AND ADDICTION	Dual Campus Capacity for AOD Prevention	STUDENT LIFE	STUDENT LIFE	\$209,000
Carpenter, Janet	PFIZER, INC	Initial Evaluation of the Impact of the "Hot Flashes? Cool!" Exhibit	NURSING	NURSING	\$200,000
Bonetto, Andrea	V FOUNDATION FOR CANCER RESEARCH	Mechanisms and treatment of chemotherapy- induced cachexia and muscle	MEDICINE	GENERAL SURGERY	\$200,000

weakness

Dos Santos, Euzeli Cipriano	ALLISON TRANSMISSION DIVISION OF GM	Data Driven System Modeling for Hybrid and Electric Vehicles	E&T	ELECTRICAL & COMPUTER ENGR	\$175,829
Truitt, William A	INDIANA STATE DEPARTMENT OF HEALTH	Mechanisms and rehab strategies for social and psychological impairments induced by mTB	MEDICINE	ANATOMY & CELL BIOLOGY	\$160,000
March, Keith L	AMERICAN HEART ASSOCIATION INCORPORATED	Adipose Stem Cell Secretome Provides Novel Functional and Molecular Cardiac Preservation	MEDICINE	CTR FOR VASCULAR BIOLOGY & MED	\$150,000
Boone, David L	PFIZER, INC	JAK and Innate Immune Colitis	MEDICINE	IUSM-SOUTH BEND	\$150,000
Ray, Brad	INDIANA FAMILY AND SOCIAL SERVICES ADMINISTRATION	21st Century Cures Evaluation	PUBLIC & ENVIRONMENTAL AFFAIRS	SPEA	\$125,000
Xie, Jingwu	AMERICAN GASTROENTEROLOGICAL ASSOCIATION	Molecular mechanisms underlying drug resistance in gastric cancer	MEDICINE	PED-HEME/ONC BASIC RESEARCH	\$100,000

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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.

INTERNATIONAL ANESTHESIA RESEARCH SOCIETY (IARS)

Frontiers in Anesthesia Research Award (FARA): The award is intended to foster innovation and creativity by an individual researcher in the anesthesiology field, funding projects with significant originality and scientific excellence. Proposed projects must have direct relevance to the future development of anesthesiology, and play a critical role in the scientific evolution of a novel concept. FARA applicants must demonstrate commitment to anesthesia research and the potential for leadership in the anesthesiology field.

Proposed studies must address one of the following areas of research:

1. Fundamental Neuroscience Unknowns (including anesthesia safety in children)
2. Immune and Metabolic Consequences of Trauma, Surgery and Critical Care
3. Best Use of Systems-Based Practice to Enhance Patient Safety & Quality

Deadlines: Jan. 30, 2018

<http://www.iars.org/awards/fara/>

NATIONAL ENDOWMENT for the HUMANITIES

Public Humanities Projects: This opportunity seeks projects that bring humanities ideas/insights to life for general audiences. Projects must engage humanities scholarship to illuminate significant themes in disciplines such as history, literature, ethics, and art, or to address challenging issues in contemporary life. NEH encourages projects that involve members of the public in collaboration with humanities scholars or that invite contributions from the community in the development/delivery of humanities programming. Applications should follow the parameters below for one of the following three formats:

1. Community Conversations: This format supports 1- to 3-year-long series of community-wide public discussions in which diverse residents creatively address community challenges, guided by the

perspectives of the humanities.

2. Exhibitions: This format supports permanent exhibitions that will be on view for at least 3 years, or travelling exhibitions that will be available to public audiences in at least 2 venues in the U.S. (including the originating location).
3. Historic Places: This format supports the interpretation of historic sites, houses, neighborhoods, and regions, which might include living history presentations, guided tours, exhibitions, and public programs.

NEH encourages projects that explore humanities ideas through multiple formats. Proposed projects may include complementary components that deepen an audience's understanding of a subject: for example, a museum exhibition might be accompanied by a website, mobile app, or discussion programs.

Deadline: Aug. 09, 2018

<https://www.neh.gov/grants/public/public-humanities-projects>

NATIONAL INSTITUTES OF HEALTH

Oral Cancer Agents: Utilization, Adherence & Health Care Delivery (RO1 Clinical Trial Optional): This opportunity supports novel strategies to: 1) assess and describe the current state of oral anticancer medication utilization, delivery, and adherence; 2) identify structural, systemic, and psychosocial barriers to adherence; and 3) develop models and strategies to improve safe and effective delivery of these agents so that clinical outcomes are optimized.

Applications should focus research questions on at least one of the following: specific cancer type; class of drugs; and/or groups subject to disparities (e.g., elderly populations, members of low socioeconomic groups, racial/ethnic minorities). Research may be focused at the patient (pediatric, adolescent, or adult), patient-caregiver, provider, health care team, or health care delivery system level, and may include intervention studies, observational studies, or mixed-methods studies. Observational studies should emphasize modifiable risk factors for future intervention research.

Deadline: Feb. 05, 2018

<https://grants.nih.gov/grants/guide/pa-files/PA-18-004.html>

Centers of Excellence in Genomic Sciences (CEGS) (RM1): The CEGS program establishes academic Centers for advanced genome research. Each CEGS grant supports a multi-investigator, interdisciplinary team to develop innovative genomic approaches to address a particular biomedical problem. A CEGS project will address a critical issue in genomic science or genomic medicine, proposing a solution that

would be a very substantial advance. Thus, the research conducted at these Centers will entail substantial risk, balanced by outstanding scientific and management plans and very high potential payoff. A CEGS will focus on the development of novel technological or computational methods for the production or analysis of comprehensive data sets, or on a particular genome-scale biomedical problem, or on other ways to develop and use genomic approaches for understanding biological systems and/or significantly furthering the application of genomic knowledge, data and methods towards clinical applications. Exploiting its outstanding scientific plan and team, each CEGS will nurture genomic science at its institution by facilitating the interaction of investigators from different disciplines, and by providing training to new and experienced investigators, it will expand the pool of highly-qualified professional genomics scientists and engineers.

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

<https://grants.nih.gov/grants/guide/pa-files/PAR-16-436.html>

Lasker Clinical Research Scholars Program (Si2/R00): The NIH funds research and research training at extramural institutions, as well as within the NIH Intramural Research Program (IRP) to address this goal. However, these efforts can be hindered by barriers to clinical and translational research. Such barriers include limited research time for clinical investigators, increases in the length of time to independent careers, and access to hospital facilities and patient enrollments.

This opportunity encourages applications for the Lasker Clinical Research Scholars Program for the purpose of supporting the research activities during the early stage careers of independent clinical researchers. It is a unique combination of intramural and extramural resources for clinical research. The program combines a period of research experience as a tenure-track Investigator in the IRP with additional years of independent financial support, either within the IRP or at an extramural research institution.

The program offers the opportunity for a unique bridge between the NIH intramural and extramural research communities and contains two phases. In the first phase, Lasker scholars will receive appointments for up to 5-7 years as tenure-track investigators within the NIH Intramural Research Program with independent research budgets. In the second phase, successful scholars will receive up to 3 years of NIH support for their research at an extramural research facility; or, the scholar can be considered to remain as an investigator within the intramural program.

Components of Participating Organizations: NCI, NEI, NHLBI, NHGRI, NIAID, NIAMS, NICHD, NIDDK, NIDA, NIEHS, NIMH, NINDS & NINR.

Deadline: Aug. 25, 2018

<https://grants.nih.gov/grants/guide/pa-files/PAR-17-254.html>

NATIONAL SCIENCE FOUNDATION

Dimensions of Biodiversity: Despite centuries of discovery, most of our planet's biodiversity remains unknown. The scale of the unknown diversity on Earth is especially troubling given the rapid and permanent loss of biodiversity across the globe. The goal of the Dimensions of Biodiversity campaign is to transform, by 2020, how we describe and understand the scope and role of life on Earth.

This campaign promotes novel integrative approaches to fill the most substantial gaps in our understanding of the diversity of life on Earth. It takes a broad view of biodiversity, and focuses on the intersection of genetic, phylogenetic, and functional dimensions of biodiversity. Successful proposals must integrate these three dimensions to understand interactions and feedbacks among them. While this focus complements several core programs in BIO, it differs by requiring that multiple dimensions of biodiversity be addressed simultaneously, in novel ways, to understand their synergistic roles in critical ecological and evolutionary processes, especially pertaining to the mechanisms driving the origin, maintenance, and functional roles of biodiversity.

The Dimensions of Biodiversity program includes partnerships with the National Natural Science Foundation of China (NSFC), the São Paulo Research Foundation (FAPESP) of Brazil, and the National Research Foundation (NRF) of South Africa in fiscal year 2018.

Deadline: Feb. 21, 2018

https://www.nsf.gov/funding/pgm_summ.jsp?pims_id=503446

Communications, Circuits & Sensing-Systems (CCSS): This opportunity supports systems research in hardware, signal processing techniques, and architectures to enable the next generation of cyber-physical systems that leverage computation, communication, and algorithms integrated with physical domains. CCSS supports innovative research and integrated educational activities in micro- and nano-systems, communications systems, and cyber-physical systems. The goal is to design, develop, and implement new complex and hybrid systems at all scales, including nano, micro, and macro, that lead to innovative engineering principles and solutions for a variety of application domains including, but not limited to, healthcare, medicine, environmental monitoring, communications, disaster mitigation, homeland security, transportation, manufacturing, energy, and smart buildings. CCSS also supports integration technologies at both intra-and inter-chip levels, new and advanced radio frequency (RF), millimeter wave and optical wireless and hybrid communications systems architectures, and sensing and imaging at terahertz (THz) frequencies.

Proposals may involve collaborative research to capture the breadth of expertise needed for such multidisciplinary, integrative activities.

Hao Ling:

1. RF, Analog, and Mixed Signal Integrated Circuits and Systems
2. RF, Microwave, Millimeter-Wave and THz Technology
3. Energy-Efficient, Low-Noise, Reconfigurable Electronics
4. Antennas and Wave Propagation for Communications and Sensing
5. High-Fidelity Modeling and Simulation of Electronic, Photonic and Electromagnetic Systems

Chengshan Xiao:

1. RF/Wireless, Optical, and Hybrid Communications and Networking
2. Integrated Sensing, Communication, and Computational Systems
3. Spectrum Access and Spectrum Sharing, Cognitive Radio
4. Signal Processing and Compressive Sampling
5. Cyber Physical Systems and Security

Mona Zaghloul:

1. Micro, Nano, and Bio Systems (MEMS/NEMS)
2. Chemical, Biological, and Physical Sensors, Sensors and Actuators, and Electronic Interfaces
3. Ultra-Low Power Wearable and Implantable Sensing and Imaging Systems
4. Real-Time Monitoring and Stimulation of the Brain and Other Body Functions in Natural Environments

Deadline: April. 01, 2018

[https://www.nsf.gov/funding/pgm_summ.jsp?
pims_id=505248&WT.mc_id=USNSF_39&WT.mc_ev=click](https://www.nsf.gov/funding/pgm_summ.jsp?pims_id=505248&WT.mc_id=USNSF_39&WT.mc_ev=click)

U.S. DEPT. of COMMERCE

Building the Environmental Literacy of K-12 Students & the Public for Community Resilience: The goal of this opportunity is to support the education of K-12 students and the public so they are knowledgeable of the ways in which their community can become more resilient to extreme weather events and/or other environmental hazards. Many U.S. communities are increasingly contending with issues related to preventing, withstanding, and recovering from disruptions caused by extreme weather and other environmental hazards. These hazards include but are not limited to severe storms, tornadoes, hurricanes, flooding, heavy precipitation events, persistent drought, heat waves, increased global temperatures, acidification of the ocean, and sea level rise. These extreme weather/climate events put stress on

infrastructure, ecological systems, and humans. U.S. communities can become more resilient to such events by exploring the hazards they face, assessing their specific vulnerabilities and risks, considering options, prioritizing and planning, and finally taking action. This process is typically performed by scientists and municipal planners, but in order for resilience to occur, other members of a community must have some understanding of the hazards they face and how to mitigate them, both at the individual and the community level. Education projects focused on resilience enable and empower community members, including children and youth, to protect themselves and their communities from these hazards.

Projects should build the environmental literacy necessary for communities to become more resilient to the extreme weather and other environmental hazards they face. In order for communities to become more resilient, their members must have the ability to reason about the ways that human and natural systems function and interact; to understand the scientific process and uncertainty; to reason about the ways that people and places are connected to each other across time and space; and to weigh the potential impacts of their decisions systematically.

Deadline: Dec 19, 2017

<https://www.grants.gov/custom/viewOppDetails.jsp?oppId=298495>

NOTE: : All faculty, researchers, and scientists on continuing contracts at IU interested in applying for Department of Defense funding are eligible for assistance by the consulting firm--Cornerstone Government Affairs--arranged by the Vice President for Research. Those interested in securing assistance from Cornerstone must submit a 2 page summary of their research project and a CV or biosketch to the VP for Research Office at vpr@iu.edu. Prior to submission, the IUPUI Office of the Vice Chancellor for Research is offering assistance with the 2 page summaries. For more information, contact Steven Chin schin@iupui.edu.

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