

Research Enterprise

March 23, 2015

The Office of the Vice Chancellor for Research (OVCR) publishes the RESEARCH ENTERPRISE to keep the academic community and the community at large informed about research activities, opportunities and development on the IUPUI campus.

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If you have a news item or recent noteworthy research-related achievement that you would like to share, please see the [Research Enterprise Submission Guidelines](#).

Please be aware that not all news items will be deemed appropriate or timely for publication, but each item will be carefully considered.

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Message from the Vice Chancellor for Research

Dear Colleagues,

I would like to extend a personal invitation to each of you to join us at the [2015 IUPUI Research Day](#), on April 17th. Our theme this year is *Research and Creativity - Fulfilling the Promise*. This daylong celebration of IUPUI research and creative activity will be held in the IUPUI Campus Center and will begin with a morning plenary session from 9:30 am to 11:00 am in the lower level theatre. This session will start with the announcement of the 2015 Research Frontiers Trailblazer Award recipients, who will make short presentations, followed by the keynote presentation by Dr. Sally Rockey, National Institutes of Health (NIH) Deputy Director for Extramural Research. In this role, Dr. Rockey leads the NIH extramural research activities, overseeing the development and implementation of the critical policies and guidelines central to the successful conduct of NIH supported research.



Kody Varahramyan, Vice Chancellor for Research

Research Day events also include two poster sessions, showcasing the innovative research of our faculty, staff, and graduate, professional and undergraduate students. Also this year, back by popular demand, we will have "Jag Talks," a series of short but highly dynamic and thought-provoking presentations that illuminate the breadth of research and creative activity happening at IUPUI and beyond. Jag Talks is open to all Research Day attendees. For more details about the Research Day program please refer to the [Program section of the Research Day webpage](#).

Research Day is a great way for IUPUI faculty, staff, and students, and their academic, industry, and government partners, along with the broader community, learn more about the research enterprise at IUPUI, explore new collaborations, and

lay the foundation for new partnerships. This is truly an exciting time for research at IUPUI.

[Please click here to register for Research Day.](#)

I look forward to seeing all of you at the April 17 Research Day!

Kody Varahramyan
Vice Chancellor for Research

FEATURE STORY

IUPUI biologist receives \$1.8 million NIH grant to study how glaucoma develops in stem cells

Dr. Jason Meyer, assistant professor of biology in the School of Science, has received a National Institutes of Health grant to study how glaucoma develops in stem cells created from skin cells genetically predisposed to the disease. The five-year, \$1.8 million grant is funded by the NIH's National Eye Institute.

Glaucoma is a group of degenerative diseases that damage the eye's optic nerve and can result in vision loss and blindness. It is the most common disease that affects retinal ganglion cells. These cells serve as the connection between the eye and the brain. Once these cells are damaged or severed, the brain cannot receive critical information, leading to blindness.

Dr. Meyer's research uses human-induced pluripotent stem cells, which can be generated from any cell in the body. In this case, they are created from skin cells of patients predisposed to glaucoma. These cells are genetically reprogrammed and then given instructions to develop into cells of the eye's retina.

"Our hope is that because these cells have the genetic information to develop the disease, they will do so in our lab," Dr. Meyer said. "Hopefully we can figure out what goes wrong in those cells and then develop new ways to fix that."

Dr. Meyer and two School of Science graduate students are now creating the stem cells and observing their features to determine what isn't going the way it should. They will determine whether they can identify the cause of damage or death of the retinal ganglion cells.

"This is a five-year award, so our hope is that toward the end of the award we can use the information we gather to start developing customized strategies to fix what's going wrong," Dr. Meyer said.

He sees this as an exciting approach to stem cell research. Often, stem cells are transplanted to replace cells damaged by disease. While that's a possibility, Dr. Meyer's research instead could lead to repairing the existing cells in the eye and restoring vision for patients.



Jason Meyer, Ph.D.

ANNOUNCEMENTS

IUPUI motor sports and biomedical engineering students win top

prizes in pitch competition

Motor sports and manufacturing have always played an integral role in the economic health of Indianapolis and the State of Indiana. So it should come as no surprise that the winning idea at Indiana University-Purdue University Indianapolis' annual student pitch competition was all about keeping those investments safe.

SafeBay, a team of three School of Engineering and Technology students, took home the judges' top prize of \$2,500 as well as the Audience Choice award of \$1,000 in the Fourth Annual [Ideas Solving Social and Economic Challenges](#) (ISSEC) competition organized by IUPUI's Office of the Vice Chancellor for Research.



ISSEC director Karen White, left, with SafeBay team members James Rutan, William Pearson and Ed Kello.

Vice Chancellor Kody Varahramyan called the winning idea -- a protective steel enclosure for motorcycles idealized for public use in parking garages, apartment complexes and even university campuses -- a perfect blend of creativity, intellectual acumen and market demand.

"Based on what both the judges and the standing-room-only audience saw, this team came up with a unique idea that solved a problem that most motorcycle users have experienced at one time or another," he said. "And we all know Indiana residents love their motorcycles."

The ISSEC competition, which drew 15 multi-student teams from across IUPUI schools and departments, encourages IUPUI students to come up with innovative ideas to solve real-world problems through new approaches, products, services or venture. Students were given up to three minutes to present their idea without the benefit of slides or props. Prizes are awarded to inspire and support students who might be in a position to move forward with their ideas.

"This was the fourth year we've run this pitch competition under the IUPUI Innovation-to-Enterprise Initiative, and I was delighted to see so many talented students from across campus participating with passion and creativity to improve societal and economic well-being," Varahramyan added.

William Pearson, a member of the winning SafeBay team, called the pitch competition an exciting stepping stone for advancing their innovation in the public eye.

"Building a pitch for SafeBay provided an opportunity to hone the team's direction, and it will be valuable to have in our portfolio for future pitch opportunities," he said. "Our winnings will be used toward building a prototype and for participating in the patent process."

A panel of expert judges from business and industry selected =winning pitches to receive the awards.

"For Indianapolis' entrepreneurial sector, it is encouraging to see many excellent, innovative ideas coming from IUPUI," said judge Ann Wilson, co-founder and CEO of the Impact Venture Center. "Investors, take note! Several of this year's entrants are nearly ready for implementation and will yield strong profits and global markets."

For more information about ISSEC, contact Karen White at kfwhite@iupui.edu or 317-274-1083.

[The 2015 competition winners and their innovative solutions are:](#)

SafeBay: First place, \$2,500; and Audience Choice, \$1,000

Team members: William Pearson, Edward Kello and Jamie Rutan, Purdue School of Engineering and Technology, mechanical engineering majors.

Project description: SafeBay is a secure and effective means of public and personal storage for motorcycles. A balance between security and convenience makes these substantial steel enclosures a unique and improved alternative to options in the market today. SafeBay provides a parking and storage solution for the motorcyclist and financial gains for owners by offering plenty of surface area for art/graphics/advertising.

NeoWarm: Second place, \$1,500

Team members: Demicca Rice, Camron Dawes and Emily Ragozzino, Purdue School of Engineering and Technology, biomedical engineering majors; and Harrison Holmes, IUPUI University College, biomedical engineering major.

Project description: In the limited-resource regions of Africa and Southeast Asia, premature low-weight babies die from hypothermia at a faster rate than elsewhere. The NeoWarm Pouch promotes skin-to-skin contact where the baby is warmed by lying against the mother's chest; when the mother is unavailable, the solar-powered pouch will heat the baby externally, monitor the baby's temperature and alert caregivers when the temperature is too low.

LIRA Loans: a new lending model for 'Low Interest Rate Alternative' loans:
Third place, \$500

Team members: Abigail Parham, IU School of Public and Environmental Affairs, civic leadership major; Phillip Mitchell, IU School of Social Work, social work major; Christopher Moeller, IU Robert H. McKinney School of Law, poverty law major.

Project description: The project is designed to address the public problem of payday loans in Central Indiana. The proposed model provides the same loans as the payday loans but at a much lower rate (36 percent vs. 390 percent) for a longer duration (30 days vs. 14 days).

School of Engineering and Technology to host open labs on IUPUI Research Day

Visit the School of Engineering and Technology and experience innovation. The Walking Tour begins at 2:30 P.M. at the Campus Center, 420 University Blvd., 1st Floor. Tour will conclude at the new Science and Engineering Lab Building (SELB) at 350 N. Blackford Street. Parking at the Campus Center is recommended. No fee. Pre-registration is required since group size is limited on walking tours.

Innovate IUPUI Labs

- Tour newest labs and see live demos
- Safer streets with self-driving cars
- Additive manufacturing by 3D printing
- Nano-medicine delivered by technology
- Energy storage to stop climate change
- Nanoscale and 3D imaging

Research Centers

- Transportation Active Safety Institute (TASI)
- Richard G. Lugar Center for Renewable Energy
- Integrated Nanosystems Development Institute (INDI)



Science and Engineering Laboratory Building

- Biomechanics and Biomaterials Research Center (BBRC)
- The Donald Tavel Arts and Technology Research Center

For more details and to register please visit:
http://events.iupui.edu/event/?event_id=12429.

Federal Office of Management and Budget Requirements

The Office of Management and Budget (OMB) has issued the Uniform Administrative Requirements, Cost Principles and Audit Requirements for Federal Awards (2 CFR Part 200), referred to as the Uniform Guidance. The Uniform Guidance consolidates and supersedes eight previous OMB circulars pertaining to the administration of federal sponsored awards. The new guidance is effective for new federal awards and existing federal awards receiving incremental funding on or after December 26, 2014. For existing awards, the Uniform Guidance applies to funding for non-competing renewals and any supplemental funding from federal agencies except the Department of Defense. For existing Department of Defense awards, the Uniform Guidance will apply to funding awarded for the next competing renewal.

The Office of Research Administration (ORA) has developed a page on its website containing information on the Uniform Guidance and the University's implementation of it. This webpage is available at the following link:
<http://researchadmin.iu.edu/uniform-guidance/index.html>. Federal funding agencies continue to work on their implementation of the Uniform Guidance and prepare revised funding terms and conditions. As new information becomes available from the funding agencies, the ORA webpage will be updated to present that information. If you have any questions, please contact the ORA office serving your campus.

Questions can be directed to 317-278-3473 or srsinfo@iupui.edu.

INSTITUTE SPOTLIGHT

Regenstrief and IU study finds obese black and white women differ in how they view weight

Low-income obese white women uniformly reported that weight negatively affects their lives and causes health problems. But half of their black contemporaries are comfortable with obesity, according to a new Regenstrief Institute and Indiana University Center for Aging Research study.

In spite of their differing views on weight, neither race of middle-aged women in the study was attempting to lose weight. None of the black women said they felt external pressure to lose weight from friends or family members, but almost three-quarters of the white women said they did.

No one in the study indicated any intention to increase exercise or physical activity to lose weight, although 82 percent of the white women and 25 percent the black women said they had family or other support for physical activities.



NiCole Keith, Ph.D.

"For both the black and white women we interviewed, food was central to social life and pleasure," said lead author Dr. NiCole Keith, a physical activity researcher who focuses on health disparities such as race, age and socioeconomic status and on preventive health interventions.

"Understanding how low-income urban middle-aged women feel about weight and the perceived social pressures to lose weight is important to reaching this high-risk and complicated -- in terms of weight loss -- population. Focusing attention on the goal of improving health -- better circulation, better mental health, increased mobility -- not to numbers on the scale may be the most effective way to help this population get and stay healthier."

Dr. Keith is a Regenstrief Institute investigator and an IU Center for Aging Research Center scientist. She is also an associate professor of kinesiology in the School of Physical Education and Tourism Management at Indiana University-Purdue University Indianapolis and vice president of the American College of Sports Medicine.

Ninety-one percent of white women in the study versus 69 percent of black women believed obesity to be an inherited trait, suggesting they thought nothing can be done to prevent it.

Both groups desired a quick fix approach to losing weight. One-quarter of the black women and three-quarters of the white women reported a history of using fad diet strategies and weight loss supplements to help them lose weight.

According to the National Center for Health Statistics, nearly one-third of non-Hispanic white women and one-half of non-Hispanic black women in the U.S. are obese.

To determine attitudes toward weight loss, the researchers developed and conducted in-depth home interviews with 16 obese black and 11 obese white women who failed to attend Healthy Me, a free Eskenazi Health lifestyle weight loss program to which they had been referred by their health care provider at one of Eskenazi Health's nine urban clinics. The number of interviews performed for each group was reached when it became apparent to the researchers that no new information -- no new themes, domains or dimensions -- emerged within the group.

The complete published study, "Weight Loss Attitudes and Social Forces in Urban Poor Black and White Women," can be found in the January-February 2015 issue of the peer-reviewed *American Journal of Health Behavior*.

In addition to Dr. Keith, authors are Kimberly Hemmerlein and Ph.D. Daniel O. Clark, of the Regenstrief Institute and IU Center for Aging Research.

The study was funded by a grant (R01 DK081329) from the National Institute of Diabetes and Digestive and Kidney Diseases.

CENTER SPOTLIGHT

New NIH funding expands genetics research resources at IU Alzheimer Disease Center

The [Indiana Alzheimer Disease Center](#) has significantly boosted its resources for treating and researching the genetic underpinnings of Alzheimer's disease with an additional grant of \$300,000 per year from the National Institutes of Health.

The center, one of just 29 NIH-designated Alzheimer's centers in the country, will use the funding to add a genetics, biomarker and bioinformatics core to its existing cores focusing on patient care, education, neuroimaging, pathology and other center activities.



Tatiana Foroud, Ph.D.

The center's work on the genetics of the disease has traditionally focused on families with a history of inherited Alzheimer's disease, such as the early-onset form that can appear in people in their 40s and 50s.

The new funding will expand the center's work on the genetics of Alzheimer's that affects older people, as well as efforts to identify clues -- biomarkers -- that could predict which people are more likely to develop the disease.

"We are interested in the genetics of people who have what we call mild cognitive impairment, which may or may not develop into Alzheimer's," said Dr. Tatiana Foroud, P. Michael Conneally Professor of Medical and Molecular Genetics and director of the new core.

The funding will enable the center to collect more types of specimens, in addition to blood samples, from research participants, Dr. Foroud said. The additional samples will include cerebrospinal fluid, which, she noted, can provide different and often better information than blood samples because "you're getting something that's much closer to what's going on in the brain."

The funding will also support more resources in bioinformatics, the blend of computing, mathematics and statistics that enables scientists to analyze the vast amount of data generated by modern biomedical research at the molecular level.

The grant, along with the resources and research it will enable, should also put the center on firmer footing when it seeks to have its overall center funding renewed, especially if the resources of the National Institutes of Health continue to be tight, Dr. Foroud said.

The NIH renewed funding to the center for a fifth consecutive five-year term in 2011, awarding the center its largest grant yet of \$9.1 million. The center's funding will be up for renewal in 2016.

Director of the Indiana Alzheimer Center is Andrew Saykin, Psy.D., Raymond C. Beeler Professor of Radiology at the IU School of Medicine, who succeeded founding Director Bernardino Ghetti, M.D., Distinguished Professor, in 2013.

FACULTY SPOTLIGHT

How alcohol hijacks brain's reward system: \$545,000 award funds IUPUI investigation

With the support of a \$545,000 three-year grant from the National Institute on Alcohol Abuse and Alcoholism, researchers from the School of Science are conducting research on how the brain's reward system -- the circuitry that helps regulate the body's ability to feel pleasure -- is hijacked by alcohol.

Scientists have only a rudimentary understanding of how alcohol affects neurons in the brain. It is known that, as any addictive drug, alcohol directly or indirectly acts on a specific population of brain cells, called dopamine neurons.

Through this action, the neurotransmitter dopamine is released, which evokes feelings of pleasure. However, the biological mechanisms of how alcohol evokes dopamine release have not been determined; exploring this question is the major goal of the grant.



Christopher Lapish, Ph.D. (left) and Alexey Kuznetsov, Ph.D.

The synergistic approach of the IUPUI researchers -- biomathematician Dr. Alexey Kuznetsov, associate professor of mathematical sciences; and neuroscientist Dr. Christopher Lapish, assistant professor of psychology -- is novel as they marry the cutting-edge tools of mathematical modeling developed by Dr. Kuznetsov and the sophisticated experimental neuroscience experiments designed and conducted by Dr. Lapish to study the electrical properties that determine the release of the neurotransmitter dopamine in the brain. As a starting point, they are focusing on the brain's initial exposure to alcohol.

Dr. Kuznetsov has developed unique mathematical models as he homes in on why and how much dopamine is released when alcohol is consumed. With the same goal, Dr. Lapish is employing sophisticated tools and methods to measure and analyze electrical signals of dopamine neurons in rats. This synergy forms a two-way street with data from the recordings of the electrical impulses of the rat brains affecting how the mathematical models are constructed and the predictions generated by the mathematical models informing the study of the animal brains.

IUPUI undergraduates and graduate students are assisting the investigators in their work.

"Our mathematical models go much further than simple logic," Dr. Kuznetsov said. "What we are learning from experiments is critical. The direct connection of modeling and experiments enables us to test and refine our hypotheses."

"As we begin our second year on this project we are gaining a better understanding of how the brain responds to alcohol," Dr. Lapish said. "The cross talk between us drives this hypothesis-driven research. There are many unknowns to explore and interpret."

The IUPUI researchers are also collaborating with French scientists. "We are working on the problem at different levels -- we are modeling and studying the brains of live rodents -- in vivo work -- and they [the French researchers] are studying in vitro brain slices in the lab," Dr. Kuznetsov added.

"Alcohol addiction is among America's largest public health concerns yet we know far less about it than most other addictions. If we are going to successfully treat alcohol addiction we need to begin with the basics and understand how alcohol directly acts on dopamine neurons in both the alcoholic and normal brain," Dr. Lapish said.

STUDENT SPOTLIGHT

Bioinformatics student chosen as the 2015 Indiana University Graduate School IUPUI Chancellor's Scholar

Deepali Jhamb, a bioinformatics PhD candidate, was chosen as the 2015 recipient of the Indiana University Graduate School IUPUI Chancellor's Scholar because of her passion and commitment to her educational endeavors with the School of Informatics and Computing, contributions to the field, as well as her academic achievements.

Deepali's thesis research involves applying systems biology and text mining to identify important transcription factors and growth factors in limb regeneration. Her goal is to utilize the data from her research on amphibian species and apply the knowledge towards further research on limb regeneration in mammalian species.



Deepali Jhamb

"I am quite honored to receive this award. My research is an important part of my life and I hope it will make a big impact in the lives of others someday. Being a Chancellor's Scholar is a great achievement and I want to thank

my mentors Dr. Palakal and Dr. Stocum for their support," said Deepali.

With a background in biochemistry and life sciences, Deepali notes that studying bioinformatics helped her to understand biology through analysis, data visualization and creation of algorithms for mining of data.

She will be receiving her PhD in May and has already secured a position as a scientific investigator at GlaxoSmithKline in Philadelphia.

TRANSLATIONAL RESEARCH IMPACT

UPUI Translating Research Into Practice (TRIP) Keynote Address

Dr. Hecht will present ***Coming to the new D.A.R.E.*** on Monday, March 30, 2015 at 5 PM in the IUPUI Campus Center Room 409. [RSVP here](#).



Michael Hecht, PhD

What is the new D.A.R.E. being taught in Indiana, across the nation, and around the world? Has it overcome controversies swirling around the program to reach a new generation of youth? How has it changed? What is this new and improved curriculum being taught to a new generation of our youth?

For over 30 years, the D.A.R.E. program, designed to teach students good decision-making skills to help them lead safe and responsible lives, has been a dominant influence in the lives of our nation's youth.

Since its inception in Los Angeles in 1983, the program has placed police officers in classrooms to prevent drug use and violence. Each year D.A.R.E. officers reach thousands of U.S. youth as well as those in 47 countries around the world. However, almost from the beginning controversies arose about the effectiveness in the program. After an exhaustive review of all effective prevention programs, *keepin' it REAL* was adopted by D.A.R.E. America as the new middle school curriculum in 2009 and then as the new elementary curriculum in 2013. So, what is this new partnership among an evidence-based curriculum created and evaluated by academics, the field experience of D.A.R.E.'s officers and educators, local police, and schools? Can these diverse groups collaborate effectively in order to contribute to the development of safe and responsible youth? What makes this program unique and how does it differ from previous versions of D.A.R.E.? Find out from one of the creators of *keepin' it REAL*, Dr. Michael Hecht, and see how his team collaborated with D.A.R.E., local police, and schools to develop something new and different.

Michael Hecht (PhD, University of Illinois) is a Distinguished Professor of Communication Arts and Sciences at Penn State University and President of REAL Prevention, LLC. He is the co-creator of the evidence-based *keepin' it REAL* substance use prevention curriculum for elementary and middle school students that, since its adoption by D.A.R.E. America, is the most widely disseminated substance use prevention program in the world. The curriculum is a translation of theory and research on culture (the principle of cultural grounding), health message design (narrative engagement theory), and interpersonal relationships through community-based research processes. Dr. Hecht's other projects focus on using interactive video games for sex education, narrative HPV vaccination promotion, and media literacy. In addition to D.A.R.E., collaborators include Planned Parenthood, the 4H Clubs of America, as well as organizations in Nicaragua where his company is involved in adolescent health promotion. Dr. Hecht's work has been funded by the National Institutes of Health, Robert Wood Johnson Foundation, US AID, and the Nemours Foundation among others.

To **RSVP** for this free event, go to
https://iu.co1.qualtrics.com/SE/?SID=SV_cZMwMkDc9A8OpG5.

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, 2015**. For grant guidelines and application forms, go to <http://research.iupui.edu/funding/>.

OTHER INTERNAL GRANT DEADLINES

Indiana Diabetes Research Center Pilot and Feasibility Program applications due May 1

A primary research-related activity of the Indiana Diabetes Research Center Pilot and Feasibility Program is to foster the development of new diabetes-related investigators and provide seed support for innovative, high-risk projects. The pilot and feasibility program would like to fund three meritorious proposals requesting up to \$25,000.

This funding opportunity is particularly directed to new investigators and established investigators new to diabetes-related research, and applications from investigators from the IU School of Medicine and IUPUI are encouraged. The program will also consider established diabetes investigators pursuing high-impact/high-risk projects or projects that are a significant departure from their usual work. IUSM and IUPUI are ideal for establishing interdisciplinary collaborations and forging new partnerships between basic scientists and clinical researchers, and such collaborations are encouraged.

Work supported by these funds is expected to lead to submissions of major extramural grants (R01/equivalent NIH, major foundation awards, DOD, etc.). New investigators must have no prior R01 funding, and all proposals must be directed towards basic biomedical, clinical or translational research questions on cellular and molecular metabolism related to diabetes/obesity/metabolic syndrome, clinical and outcomes research in diabetes and obesity, complications of diabetes and obesity, islet function and survival, and/or nutrition and physiology of obesity.

Applicants should submit a letter of intent by 5 p.m. Wednesday, April 1. The deadline for applications is 5 p.m. Friday, May 1. The letters of intent and applications must be received via email at jelmendo@iupui.edu. For more information, visit the [Indiana Diabetes Research Center](#) website or email jelmendo@iupui.edu.

OVCR EVENTS AND WORKSHOPS

Seventh Annual Teaching Skills in International Research Ethics workshop

The seventh annual Teaching Skills in International Research Ethics workshop will be April 15 to 17 in the Health Information and Translational Sciences Building.

TaSkR is hosted by the IU-Moi University Academic Research Ethics Partnership, a program supported by a five-year grant from the Fogarty International Center at the National Institutes of Health, and is designed to build research ethics capacity at

both universities. This year's theme is "Epidemic Ethics."

The event will help prepare participants to learn pedagogical methods and acquire skills for teaching international research ethics. Faculty and students involved in, or interested in, teaching and mentoring students in international research settings and experts in international research ethics, including those from other Fogarty-funded programs, are encouraged to attend.

This is a free workshop but [registration is required](#). The registration deadline is **Wednesday, April 8**.

This event is sponsored by the IU Center for Bioethics, Moi University and the Moi Teaching and Referral Hospital in Eldoret, Kenya. Support for the development of this workshop is provided by grant R25TW006070 from the Fogarty International Center at the National Institutes of Health.

Please direct any questions about this event to arep@iupui.edu.

How to Write a Winning NSF CAREER Proposal

Target Audience: Early Career Faculty in Disciplines Funded by NSF

When: Tuesday, March 24, 2015 | 2:00pm - 4:00pm

Where: University Library, Room 2115J

Webinar for faculty on how to write a successful proposal to NSF's [Faculty Early Career Development Program \(CAREER\)](#), presented by *Academic Research Funding Strategies, LLC*. Topics to be covered are:

- *How to decide when and if to apply for a CAREER grant
- *How to position yourself and your research to be competitive for a CAREER grant
- *How to structure your proposal
- *How to develop an education plan
- *Addressing diversity
- *Keys to success and common mistakes to avoid
- *A step-by-step discussion of each section of the proposal and what it needs to tell the reviewers
- *How to analyze reviews and decide whether to revise and resubmit
- *Questions and Answers

A package will also be provided to participants that includes annotated excerpts from successful proposals and helpful resources.

Register: <https://crm.iu.edu/CRMEvents/NSFCAREERWebinar032415/>

Developing Complex, Multi-Investigator, Multi-Institutional Proposals

Target Audience: Senior Faculty with Previous or Current External Funding

When: Thursday, March 26, 2015 | 4:00pm - 5:30pm

Where: University Library, Room 1126

The current funding environment favors large, complex, multi-institutional, multi-investigator projects. However, organizing a successful submission takes a great deal of planning and teamwork. What works best in which situation? Should you use a "Red Team Review?" What role does the RFP serve to organize the writing efforts? Professional proposal writers and editors will discuss these and a number of related issues at this session (limited to 20 registrants).

Register: <https://crm.iu.edu/CRMEvents/ComplexProposals032615/>

Nine Golden Rules to Succeed in Research and Scholarship

Target Audience: Faculty
When: Friday, March 13, 2015 | 11:00am - 1:00pm
Where: University Library, Room 1126

This session will reveal the Nine Golden Rules on how to succeed in research and scholarship. It is focused toward new and early career investigators; however, mid-career faculty should find information of interest as well.

Register: <https://crm.iu.edu/CRMEvents/NineGoldenRules031315/>

Working with Industry on Applied Research & Creative Activity

Target Audience: Faculty
When: Friday, April 24, 2015 | 1:00pm - 2:30pm
Where: University Library, Room 1126

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

Register: <https://crm.iu.edu/CRMEvents/WorkingwithIndustry042415/>

OTHER EVENTS AND WORKSHOPS

IU McKinney professor Fran Watson to discuss work with Innocence Network

Forensic science buffs, criminal justice students, wannabe crime scene investigators -- anyone who likes a good crime story with a couple of twists -- will find IU Robert H. McKinney School of Law professor Fran Watson's upcoming lecture intriguing.

Watson, director of the McKinney Wrongful Conviction Clinic, [will discuss her work with the Innocence Network](#) at 4:30 p.m. on March 26 in the Wynne Courtroom at Inlow Hall, 530 W. New York St. The event is followed by a reception at 6 p.m. in the atrium.

To learn more and to register, go to [Innocence Network Lecture](#).



Fran Watson, J.D.

Data Topics Series: Spring 2015

These workshops will provide an overview of funding agency and publisher data policies, as well as resources and options for compliance.

Format: 20-minute lecture with examples, 20-30 minute activity, 10-15 minute discussion

Audience: Any faculty, staff, or student engaged in research

Questions can be directed to Heather Coates at hcoates@iupui.edu or 317-278-7125.

Register for any of the following data topics at

<https://www.surveymonkey.com/s/datatopicspr15>.

Topic: Documenting your data with lab notebooks and readme files

Date: Wednesday, April 8

Time: 4:30-5:45pm

Location: University Library, 2120

Topic: Documenting your data with metadata

Date: Thursday, April 23

Time: 4:30-5:45pm

Location: University Library, 2120

Data Policy Workshops: Funding agency & publisher policy

These workshops will provide an overview of funding agency and publisher data policies, as well as resources and options for compliance.

Format: 30-45 minute lecture with examples, 15-20 minute discussion

Audience: Any faculty, staff, or students engaged in research

Questions can be directed to Heather Coates at hcoates@iupui.edu or 317-278-7125.

Register for any of the following data workshops

at <https://www.surveymonkey.com/s/datapolicyspr15>.

Topic: Meeting publisher data availability policies

Date: Tuesday, May 5

Time: 12:00-1:00pm

Location: University Library, 2120

Topic: What you need to know about the NIH Data Sharing Policy

Date: Thursday, May 14

Time: 1:00-2:00pm

Location: University Library, 2120

IUPUI Arts and Humanities Institute (IAHI) Spring 2015 Lineup

For details and to register, visit http://www.iupui.edu/~iahi/?page_id=39.

RECENT EXTERNAL FUNDING AWARDS

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

Grants and Awards - February 2015

Sun, Jie	NATIONAL INSTITUTE ALLERGY & INFECTIOUS DISEASES	IRF4 and immunity to influenza infection	MEDICINE	PED-PULMONARY BASIC RESEARCH	\$1,982,637
Petrache, Irina	NATIONAL HEART, LUNG AND BLOOD INSTITUTE	IU training Program in Molecular Physiology and Clinical Mechanisms of Lung Disease	MEDICINE	PULMONARY	\$1,538,594
DiMeglio, Linda A	JUVENILE DIABETES RESEARCH FOUNDATION	Targeting Polyamines using DFMO in Persons with T1D	MEDICINE	PED-ENDOCRINOLOGY BASIC RES	\$1,136,793

	INTERNATIONAL				
Walsh, Susan	NATIONAL INSTITUTE OF JUSTICE	Improving the prediction of human quantitative pigmentation traits such as eye, hair and skin color using a worldwide representation panel of US and European individuals	SCIENCE	BIOLOGY	\$1,123,404
Handa, Rajash K	UNIVERSITY OF WASHINGTON	Strategies to improve single-session success in nephrolithiasis	MEDICINE	ANATOMY & CELL BIOLOGY	\$564,951
Walton, Betty A	INDIANA FAMILY AND SOCIAL SERVICES ADMINISTRATION	CANS and ANSA Training and Consultative Services	SOCIAL WORK	SOCIAL WORK	\$518,850
Nunn, Samuel	INDIANA CRIMINAL JUSTICE INSTITUTE	Indiana Traffic Safety Analysis and Reporting	SPEA	PUBLIC & ENVIRONMENTAL AFFAIRS	\$350,000
Brown, John W	RILEY CHILDREN'S FOUNDATION	Pediatric congenital heart datacenter and outcomes	MEDICINE	CARDIOSURGERY	\$310,000
Asirwa, Fredrick Chite	INDIANA HEMOPHILIA & THROMBOSIS CENTER	AMPATH Non-Malignant Hematology Program	MEDICINE	CANCER CENTER	\$232,500
Custer, Sara K	FAMILIES OF SPINAL MUSCULAR ATROPHY	Transcriptional changes in an NSC-34 cell model of SMA	MEDICINE	DERMATOLOGY	\$140,000
Liang, Yao	UNIVERSITY OF PITTSBURGH	Improving Hydrologic Disaster Forecasting and Response for Transportation by Assimilating and Fusing NASA and Other Data Sets	SCIENCE	COMPUTER SCIENCE	\$131,463
Foroud, Tatiana M	MICHAEL J FOX FOUNDATION FOR PARKINSONS RESEARCH	PPMI Widespread Recruitment Initiative GBA Study	MEDICINE	MEDICAL & MOLECULAR GENETICS	\$129,428
Meroueh, Samy	INDIANA STATE DEPARTMENT OF HEALTH	Small-Molecule Inhibition of RhoA Signaling Following Spinal Cord Injury	MEDICINE	NEUROLOGICAL SURGERY	\$120,000
Harezlak, Jaroslaw	BARCELONA CENTRE FOR INTERNATIONAL HEALTH RESEARCH	MAL067 VIW Immune Correlates Pilot Study	FAIRBANKS SCHOOL OF PUBLIC HEALTH	PUBLIC HEALTH	\$115,100
Rodefeld, Mark D	THE CHILDREN'S HEART FOUNDATION	Cavopulmonary assist device development for Fontan circulatory support	MEDICINE	CARDIOSURGERY	\$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 to online search tools listed below.

General Motors Foundation

The General Motors Foundation supports only programs that fall within the foundation's four key focus areas: education, health and human services, environment and energy and community development. Primary consideration is given to requests that meet the following criteria:

1. Exhibit a clear purpose and defined need in one of the foundation's four key focus areas.
2. Implement innovative approaches to address the defined need.
3. Demonstrate efficiency and the ability to follow through on the proposal.

Deadline: Continuous. http://www.gm.com/company/aboutGM/gm_foundation.html

NOTE: Faculty, researchers, and scientists interested in this funding opportunity may also consider pursuing a collaborative relationship that provides access to unique data for appropriate research projects. This data has been collected from a broad spectrum of public safety personnel from various agencies in Indiana over the past two decades. Cardiovascular disease happens to be the primary cause of on-duty and lifetime mortality in firefighters (45% and 36% of deaths, respectively). Dataset includes: tobacco and alcohol use, diet, physical activity level, medications, immunization history, overall fitness, blood pressure, weight, lung function, blood

analysis/lipids/glucose, urine analysis, psychological overview. Over 100,000 person years available. Data is currently being accessed for FEMA/Homeland Security study through Harvard School of Public Health. (S. Kales, Primary Investigator). To learn more about this data and explore the feasibility of a joint project for this funding opportunity, please contact Terry Zollinger , Professor Emeritus, Fairbanks School of Public Health, 317.278.0307 or tzolling@iu.edu).

NATIONAL INSTITUTES OF HEALTH

Prevention Innovation Program (PIP): This Funding Opportunity Announcement (FOA), the Prevention Innovation Program (PIP), encourages Research Project Grant (R01) applications in non-vaccine biomedical prevention (nBP) research. The PIP is intended to support high-risk/innovative research and development efforts to establish and maintain a sustainable pipeline for the prevention of HIV acquisition/transmission. The PIP will support discovery and development of novel and under-explored nBP candidates/strategies, nBP delivery strategies, studies of the impact of nBP prevention strategies on genital and gastrointestinal (GI) mucosa function and emerging technologies that support microbicides, pre-exposure prophylaxis (PrEP), and Multipurpose Prevention Technologies (MPT) for prevention of HIV acquisition/transmission. *Deadlines: Letter of Intent: June 10, 2015; Application: July 10, 2015; February 05, 2015.*

<http://grants.nih.gov/grants/guide/rfa-files/RFA-AI-13-059.html>

Bioengineering Research Grants (R01): The purpose of opportunity is to encourage collaborations between the life and physical sciences that: 1) apply a multidisciplinary bioengineering approach to the solution of a biomedical problem; and 2) integrate, optimize, validate, translate or otherwise accelerate the adoption of promising tools, methods and techniques for a specific research or clinical problem in basic, translational, or clinical science and practice. An application may propose design-directed, developmental, discovery-driven, or hypothesis-driven research and is appropriate for small teams applying an integrative approach that can increase our understanding of and solve problems in biological, clinical or translational science. NIH scientific and financial contacts listed at the following website should be contacted for answers to questions about scientific or financial issues. Components of Participating Organizations: National Institute of Biomedical Imaging and Bioengineering (NIBIB) National Cancer Institute (NCI) National Eye Institute (NEI) National Heart, Lung, and Blood Institute (NHLBI) National Human Genome Research Institute (NHGRI) National Institute of Allergy and Infectious Diseases (NIAID) National Institute of Arthritis and Musculoskeletal and Skin Diseases (NIAMS) Eunice Kennedy Shriver National Institute of Child Health and Human Development (NICHD) National Institute on Deafness and Other Communication Disorders (NIDCD) National Institute of Dental and Craniofacial Research (NIDCR) National Institute on Drug Abuse (NIDA) National Institute of Environmental Health Sciences (NIEHS) National Institute of General Medical Sciences (NIGMS) National Institute of Neurological Disorders and Stroke (NINDS). *Deadline: June 5, 2015.*

<http://grants.nih.gov/grants/guide/pa-files/PAR-13-137.html>

Advancing Translational and Clinical Probiotic/Prebiotic and Human Microbiome Research (R01): The purpose of this opportunity is twofold: 1. to accelerate translational and clinical Phase I and II a/b safety and efficacy studies for substantiating measurable functional benefits of probiotic/prebiotic components and/or their combinations; and; 2. to understand the underlying mechanisms of their action(s), and variability in responses to these interventions. This calls for interdisciplinary collaborations across scientific disciplines engaged in microbiome and pro/prebiotic research including, but not limited to: nutritional science, microbiology, virology, microecology, genomics, immunology, computational biology, chemistry, and bioengineering as well as integration of omics and computational approaches in DNA technologies. Components of Participating Organizations: National Cancer Institute (NCI) Eunice Kennedy Shriver National Institute of Child Health and Human Development (NICHD) National Institute on Drug Abuse (NIDA)

National Center for Complementary and Integrative Health (NCCIH) Office of Dietary Supplements (ODS). *Deadline: June 5, 2015.* <http://grants.nih.gov/grants/guide/pa-files/PA-15-127.html>

Technologies for Improving Health and Eliminating Health Disparities

(R41/42): The purpose of this opportunity is to stimulate a partnership of ideas and technologies between innovative small business concerns (SBCs) and non-profit research institutions resulting in improving minority health and the reduction of health disparities by commercializing innovative technologies. Healthy People 2020 defines a health disparity as a particular type of health difference in the incidence, prevalence, morbidity, and burden of diseases and other adverse health outcomes that is closely linked with social, economic, and/or environmental disadvantage. NIH-defined health disparity population groups include racial/ethnic minorities, socioeconomically disadvantaged individuals, and individuals residing in rural areas. Appropriate technologies must be effective, affordable, culturally acceptable, and easily accessible to those who need them. *Deadlines: Letter of Intent: December 23, 2015; Application: January 23, 2016.* <http://grants.nih.gov/grants/guide/rfa-files/RFA-MD-15-003.html>

NATIONAL SCIENCE FOUNDATION

Designing Materials to Revolutionize and Engineer Our Future (RMREF): The program will support efforts that span researchers in materials science, chemistry, mathematics, computer science, and engineering. The complexity and challenge of activities addressed by this initiative require a transformative approach to discovering and developing new materials, predicting and optimizing properties of materials, and informing the design of material systems. Accordingly, the proposed research must be a collaborative and iterative process. As such theory guides computational simulation, computational simulation guides experiments, and experiments further guide theory. Strategies to be included in the proposals must advance synthesis/growth/processing techniques, characterization/testing methodology, and theory/data/computation/simulation approaches needed to develop predictive computational models. This collaborative and iterative process will require a team of PIs with the requisite expertise. It is expected that proposals will be directed by a team of at least two Senior Personnel with complementary expertise. While not required, ties with industry, national laboratories, engineering partners, or other organizations are encouraged. If there are strong collaborations with industry, please see the Grant Opportunities for Academic Liaison with Industry (GOALI) program solicitation, which can be used in conjunction with this effort. Collaborative Proposals involving two or more academic institutions may also be appropriate. Because this approach emphasizes an integrated approach to materials research, cross-disciplinary education and public outreach activities are encouraged. *Deadline: January 29, 2016.* http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=505073&org=NSF&sel_org=NSF&from=fund

Improving Undergraduate STEM Education (IUSE-EHR): This 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, 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. 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: October 22, 2015.*

http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=505082&org=NSF&sel_org=NSF&from=fund

Exploiting Parallelism and Scalability (XPS): This program seeks transformative proposals on new and visionary approaches to re-evaluate and possibly re-design the traditional computer hardware and software stack for today's heterogeneous parallel, concurrent, and distributed systems, and should explore new holistic approaches to parallelism and cross-layer design. New approaches should encompass both software and hardware to achieve scalable performance and usability through new abstract models and algorithms, programming models and languages, data models and declarative query languages, hardware architectures, compilers and runtime systems. Research may focus on scalable performance, energy efficiency and communication efficiency, and/or on enabling the division of effort between edge devices and clouds. Primary importance is twofold: programmability and reliability. Proposals should address problems related to (at least) one of the four focus areas: 1) foundational principles, 2) cross-layer and crosscutting approaches, 3) scalable distributed architectures, and 4) domain-specific design. *Deadline: January 27, 2016.* http://nsf.gov/funding/pgm_summ.jsp?pims_id=504842

Combustion and Fire Systems: The goal of this program is to generate cleaner global and local environments, enhance public safety, improve energy and homeland security, manufacture new materials, and create more efficient manufacturing. The program endeavors to provide basic engineering knowledge that is needed to develop useful combustion applications (such as flame-assisted synthesis of novel materials) and for mitigating the effects of fire. Broad-based tools - experimental, diagnostic, and computational - that can be applied to a variety of problems in combustion and fire systems are the major products of this program.

Research areas of interest for this program include: 1) Basic Combustion Science: Laminar and turbulent combustion of gas, liquid, and solid fuels in premixed, non-premixed, partially premixed, and homogeneous modes over a broad range of temperatures, pressures and length scales. Burning of novel and synthetic fuels. Development of models and diagnostic tools. 2) Combustion Science Related to Climate Change: Increasing efficiency and reducing pollutants. Production and use of renewable fuels. Technologies such as oxy-fuel combustion and chemical looping combustion for carbon sequestration. 3) Fire Prevention: Improved understanding of fires to prevent their spread, inhibit their growth, and suppress them. 4) Turbulent Combustion Modeling and Validation: This is an NSF-AFOSR (Air Force Office of Scientific Research) joint funding area focusing on team efforts closely coordinating experimental and modeling efforts for validating fundamental turbulent combustion model assumptions. *Deadlines: October 20, 2015.*

http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=13366

U.S. DEPARTMENT OF ENERGY (DOE)

Stewardship Science Academic Alliances (SSAA): This program supports state-of-the-art research at U.S. institutions in areas of fundamental physical science and technology of relevance to the Stockpile Stewardship Program mission, with a focus on those areas not supported by other federal agencies. This opportunity seeks proposals in properties of materials under extreme conditions and/or hydrodynamics (condensed matter physics and materials science, and fluid dynamics); low energy nuclear science; and radiochemistry. The program objectives are: 1) Support the U.S. scientific community by funding research projects at universities that conduct fundamental science and technology research that is of relevance to Stockpile Stewardship; 2) Provide opportunities for intellectual challenge and collaboration by promoting scientific interactions between the academic community and scientists at the DOE/NNSA laboratories; and 3) Develop and maintain a long-term recruiting pipeline to the DOE/NNSA laboratories by training and educating the next generation of scientists in the fundamental research of relevance to Stockpile Stewardship and

thereby increasing the visibility of the DOE/NNSA scientific activities to the U.S. academic communities. *Deadline: October 27, 2015.*

<http://www.grants.gov/web/grants/view-opportunity.html?oppId=261008>

U.S. DEPARTMENT OF TRANSPORTATION (DOT)

Strategies for Increasing Ignition Interlock Use Among DWI Offenders: The main objective of this opportunity is to measure the effectiveness of a strategy in increasing interlock use as deployed by a jurisdictional site (State, county, court system). The contractor shall gather information on interlock programs across a range of sites to identify and recruit a site that is willing or about to deploy a strategy for increasing interlock use. The contractor shall partner with a site and assess changes in program measures of performance prior to, during and after the strategy is deployed. *Deadline: July 23, 2015.*

See [Strategies for Increasing Ignition Interlock Use Among DWI Offenders](#).

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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