



## • Research Development

# Office of the Vice Chancellor for Research

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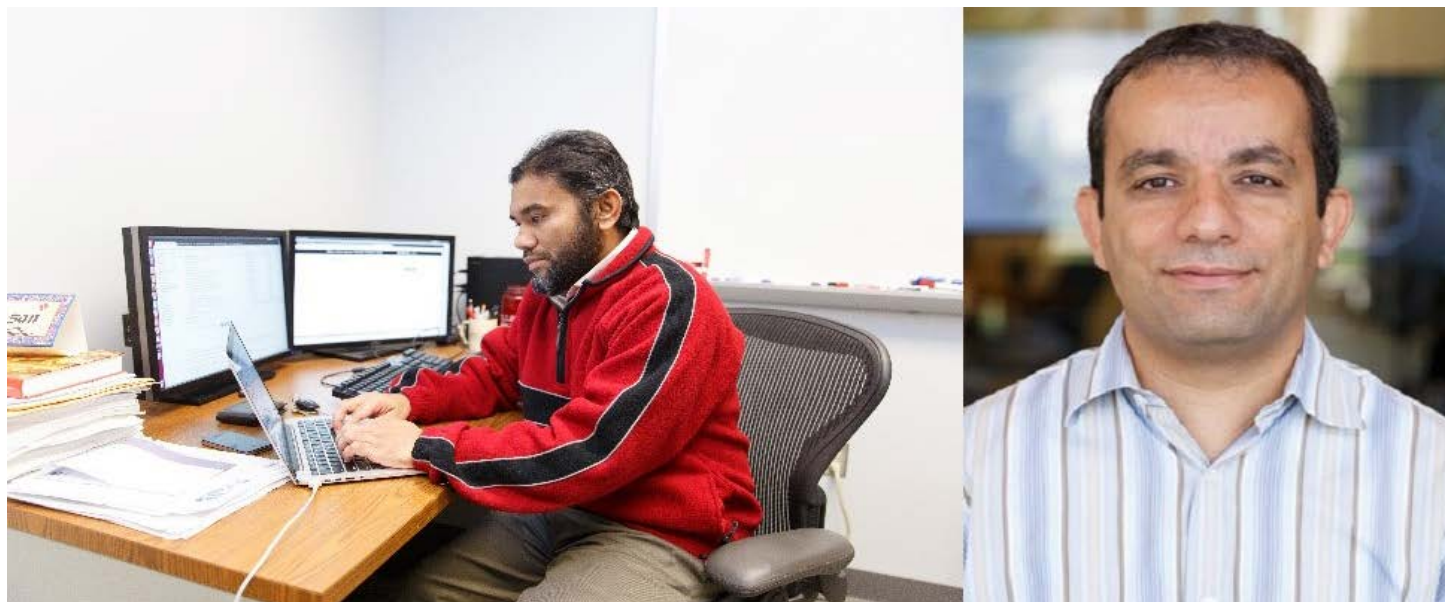
RESEARCH ENTERPRISE NEWSLETTER

January 27, 2016

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### FEATURE STORY



Mohammad al Hasan (left) and Murat Dundar

### **IUPUI study: Training computers to differentiate between people with the same name**

All individuals are unique but millions of people share names. How to distinguish -- or as it is technically known, disambiguate -- people with common names and determine which John Smith or Maria Garcia or Wei Zhang or Omar Ali is a specific John Smith, Maria Garcia, Wei Zhang or Omar Ali -- or even someone previously unidentified?

This conundrum occurs in a wide range of environments from the bibliographic -- which Anna Hernandez authored a specific study? -- to the law enforcement -- which Robert Jones is attempting to board an airplane flight?

Two computer scientists from the [School of Science at Indiana University-Purdue University Indianapolis](#) and a [Purdue University](#) doctoral student have developed a novel-machine learning method to provide better solutions to this perplexing problem. They report that the new method is an improvement on currently existing approaches of name disambiguation because the IUPUI method works on streaming data that enables the identification of previously unencountered John Smiths, Maria Garcias, Wei Zhangs and Omar Alis.

Existing methods can disambiguate an individual only if the person's records are present in machine-learning training data, whereas the new method can perform non-exhaustive classification so that it can detect the fact that a new record which appears in streaming data actually belongs to a fourth John Smith, even if the training data has records of only three different John Smiths. "Non-exhaustiveness" is a very important aspect for name disambiguation because training data can never be exhaustive, because it is impossible to include records of all living John Smiths.

"Bayesian Non-Exhaustive Classification -- A Case Study: Online Name Disambiguation using Temporal Record Streams" by Baichuan Zhang, Murat Dundar and Mohammad al Hasan is published in Proceedings of the 25th International Conference on Information and Knowledge Management. Zhang is a Purdue graduate student. Dundar and Hasan are IUPUI associate professors of computer science and internationally respected experts in machine learning.

"We looked at a problem applicable to scientific bibliographies using features like keywords, and co-authors, but our disambiguation work has many other real-life applications -- in the security field, for example," said Hasan, who led the study. "We can teach the computer to recognize names and disambiguate information accumulated from a variety of sources -- Facebook, Twitter and blog posts, public records and other documents -- by collecting features such as Facebook friends and keywords from people's posts using the identical algorithm. Our proposed method is scalable and will be able to group records belonging to a unique person even if thousands of people have the same name, an extremely complicated task

"Our innovative machine-learning model can perform name disambiguation in an online setting instantaneously and, importantly, in a non-exhaustive fashion," Hasan said. "Our method grows and changes when new persons appear, enabling us to recognize the ever-growing number of individuals whose records were not previously encountered. Also, some names are more common than others, so the number of individuals sharing that name grows faster than other names. While working in non-exhaustive setting, our model automatically detects such names and adjusts the model

parameters accordingly."

Machine learning employs algorithms - sets of steps -- to train computers to classify records belonging to different classes. Algorithms are developed to review data, to learn patterns or features from the data, and to enable the computer to learn a model that encodes the relationship between patterns and classes so that future records can be correctly classified. In the new study, for a given name value, computers were "trained" by using records of different individuals with that name to build a model that distinguishes between individuals with that name, even individuals about whom information had not been included in the training data previously provided to the computer.

"Features" are bits of information with some degree of predictive power to define a specific individual. The researchers focused on three types of features:

1. Relational or association features to reveal persons with whom an individual is associated: for example, relatives, friends, and colleagues
2. Text features, such as keywords in documents: for example, repeated use of sports- culinary-, or terrorism-associated keywords
3. Venue features: for example, institutions, memberships or events with which an individual is currently or was formerly associated

The study was funded by the National Science Foundation through CAREER awards to Hasan and Dundar in 2012 and 2013, respectively.

The researchers hope to continue this line of inquiry, scaling up with the support of enhanced technologies, including distributed computing platforms

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## ANNOUNCEMENTS



2017 IUPUI Student Research Day

### **2017 IUPUI Student Research Day – Save-the-Date: April 7**

All are invited to attend IUPUI Student Research Day on April 7, 2017 (10 am – 3 pm). This day-long event will spotlight the rich, cutting-edge, and multifaceted research and creative activities that so many IUPUI students are conducting with faculty mentors. The submission deadline for student poster abstracts is 3/15/2017. To submit, go to [https://iu.co1.qualtrics.com/SE/?SID=SV\\_ez0jGDd1n8ja45v](https://iu.co1.qualtrics.com/SE/?SID=SV_ez0jGDd1n8ja45v).

Plan to join us in celebration of student (faculty-mentored) research that is helping IUPUI fulfill the promise of endless possibilities through discover, exploration and innovation. For more information and to register, visit [www.crl.iupui.edu](http://www.crl.iupui.edu). Questions can be directed to Etta Ward at [emward@iupui.edu](mailto:emward@iupui.edu) or 317-278-8427.

## Application Process Open for 2017-2018 Charles R. Bantz Fellowship

Application Deadline – March 6, 2017, 5:00 pm

**Background:** 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 fellowship reflects Charles Bantz's dedication to research that creates university-community partnerships and results in community impact.

**Eligibility:** The Bantz Community Fellowship provides one year of support for a collaborative research team (i.e., faculty, student(s), community partner/members) to address a community issue in Central Indiana. To be eligible to serve as PI on a Bantz Community Fellowship team, the faculty member must have a full-time appointment (Tenured, Tenure-track, Clinical Faculty or Lecturer).

**Awards:** The Bantz Community Fellowship will be awarded through a competitive application process on an annual basis. Proposals may request up to \$50,000, with a required additional cash or in-kind match (minimum 20%) from the school, community partner, and/or other grants and partners.

**To apply:** [Link to Bantz Community Fellowship](#). 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, Monday, March 6, 2017.

## IU Simon Cancer Center seeks applicants for summer research program

High school students and undergraduates interested in gaining hands-on experiences in cancer research are encouraged to apply for the 2017 Summer Research Program at the Indiana University Melvin and Bren Simon Cancer Center.

The annual Summer Research Program, held in partnership with the IU School of Medicine's [Health Professions Program](#), places students with a mentor physician or researcher for nine weeks, June 5 to July 28. Students work with faculty who are conducting studies in the most advanced areas of cancer research.

The program's primary goal is to increase the number of underrepresented populations engaged in basic, clinical, prevention and control cancer research by providing positive and meaningful first-hand exposure to those fields.

Additional information, eligibility requirements and an online application are available at [www.cancer.iu.edu/srp](http://www.cancer.iu.edu/srp). For more information, call (317) 278-4752 or e-mail [askhpp@iupui.edu](mailto:askhpp@iupui.edu). Application deadline is February 28.

## National Endowment for the Arts 2017 Funding Guidelines Posted

Guidelines and application materials for three National Endowment for the Arts funding categories— Art Works, Challenge America, and Creative Writing Fellowships—have posted on the NEA's website. The NEA will again offer funding for [Creativity Connects projects](#) through the Art Works category.

The 2017 Art Works and Challenge America programs support projects taking place beginning in 2018. Guidelines and application materials are in the [Apply for a Grant section](#) of the NEA website.

In addition, guidelines for 2017 Creative Writing Fellowships: Prose are posted for application by published creative writers. Guidelines and application materials for the fellowships are also in the [Apply for a Grant section](#) of the NEA website.

## DATES AND DEADLINES

Art Works

Application Deadlines

\*February 16, 2017 \*July 13, 2017

Recent Art Works grants are posted on the NEA website.

Art Works: Creativity Connects Application Deadline: May 4, 2017 Recent Creativity Connects grants are [posted](#) on the NEA website. Guidelines workshop webinar is scheduled for March 22, 2017 (Details will be posted soon.)

Challenge America Application Deadline: April 13, 2017 Recent Challenge America grants are posted on the NEA website. Guidelines workshop webinar is scheduled for March 1, 2017 (Details will be posted soon.)

Creative Writing Fellowships: Prose Application Deadline: March 8, 2017 The NEA's Writers' Corner features many of the past fellows and their work.

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## CENTER SPOTLIGHT



Peter Schubert, founder, Green Fortress Engineering Inc.

### **IUPUI-based engineering startup receives \$225,000 NSF grant to improve hydrogen fuel storage**

A startup based on work conducted at the [School of Engineering and Technology at Indiana University-Purdue University Indianapolis](#) has received a federal grant to develop a system that could affect how solid-state hydrogen fuel is stored.

[Peter Schubert](#), professor of electrical and computer engineering and director of the [Richard G. Lugar Center for Renewable Energy](#), founded Green Fortress Engineering Inc. The company has received a one-year STTR Phase I grant of \$225,000 from the National Science Foundation to develop its storage technology. The award includes IUPUI as a subcontractor, and the School of Engineering and Technology will perform the deep technical research.

Schubert said hydrogen is a clean fuel that can be produced from water or biomass. When it is converted to electricity, the only other product is water vapor.

"Renewable hydrogen as an energy vector is the key to reducing carbon and methane emissions, minimizing extraction impacts, and providing energy self-reliance," he said.

Schubert said traditional methods to store hydrogen have significant drawbacks.

"They store hydrogen as a compressed gas or as ultra-cold, cryogenic liquids, both of which are inefficient energy sources. The high pressures used to compress gas pose a mechanical risk, and cryogenic liquids boil off even with the best insulation," he said. "Green Fortress Engineering has developed a solid-state solution that allows the full benefits of a hydrogen economy without the disadvantages of traditional methods."

Schubert said the NSF grant will allow Green Fortress Engineering to achieve two goals.

"First, we will perform the first gaseous recharge of a solid-state hydrogen storage media, which will serve as validation of the theoretical work leading up to the grant," he said. "We will also explore the pathway to lower-cost starting materials, including polycrystalline silicon and metallurgical-grade silicon. Using these less-expensive materials could make solid-state hydrogen storage available to every economic market."

Schubert said receiving the NSF grant is prestigious recognition for Green Fortress Engineering.

"National Science Foundation awards are highly competitive," he said. "A panel of expert reviewers provides recommendations to the program director for funding of transformative research with the potential for significant benefits to society."

"The Green Fortress Engineering team is delighted to have been selected for an award and is eager to demonstrate this technology, leading to commercialization and realizing those benefits, creating jobs and doing good for the environment."

Schubert disclosed the technology to the [Indiana University Research and Technology Corp.](#), which protects, markets and licenses intellectual property developed at Indiana University so it can be commercialized by industry. IURTC licensed the technology to Green Fortress Engineering, which was [launched in the 2015-16 fiscal year](#) as a member of IURTC's [Spin Up](#) entrepreneurial program.

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## FACULTY SPOTLIGHT



Jane Schultz in period costume

### **IUPUI professor helps PBS series 'Mercy Street' accurately portray Civil War hospital drama**

Like millions of other viewers, English professor [Jane Schultz](#) can't wait to watch the second season of "Mercy Street," the PBS Civil War-era hospital drama, when it airs beginning Jan. 22.

Inspired by real events in Alexandria, Virginia, and based on diaries and letters of hospital staff, the series has the ring of authority. As one of four full-time advisors to "Mercy Street," Schultz, a literary scholar and cultural historian who has spent nearly 30 years revealing the world of Civil War hospitals and medicine, contributes her extensive knowledge of that period to make it so. "Mercy Street" is PBS's first original drama in more than a decade. Nearly 6 million viewers watched the first season's premiere a year ago.

The series' producers invited Schultz to come to Richmond, Virginia, where "Mercy Street" hospital scenes are shot. She spent a week and a half last June watching scenes for the second season being filmed in an old girls school that serves as the show's Mansion House Hospital.

She not only watched, but joined the cast as an extra for one scene.

If the scene isn't cut, viewers will see Schultz for about 15 seconds in the background, talking to a patient in a wheelchair and then walking away from him.

While the scene is only seconds long, it took three hours for her to be dressed in a corset and hoop skirt and have her hair and makeup done.

Schultz plans to write about the insights that experience gave her into the position of women in the 19th century for the [series' blog](#). "It gave me a new insight by walking in their shoes, quite literally," she said.

Schultz wrote six blog posts for the first season and will write six more for the second season. The first six posts are still on the PBS site.

The experience of being on a shooting set was "tremendously fun and interesting," Schultz said. "I'm a literary scholar, and I've worked in many archives and libraries, but I've never worked in a place where there was cinematic shooting going on.

"I gained a new respect and fascination for how hard these folks work to put out a quality piece of drama. It just floored me to see the extent to which people focus on the details of production -- from what sort of props are sitting in a hospital room to what the color of mud or blood needs to be in a particular situation.

"I was amazed at how much trouble all of the production staff go to, from the camera people to the people who dye the fabrics to look really old and worn to people who are managing wardrobe and hair and makeup and all of that.

"They spare no detail to make it look authentic, and the same thing happens with the script. We debate every nuance because they want it to look real," Schultz said.

The task confronting "Mercy Street" is to interpret from written text what things looked like during that period. There are some photographs from that era, but the richest field of representation is what people wrote at the time or a few years later, Schultz said: "And from that you have to construct a visual world."

In one scene, Schultz happened to notice that upper shelves in a room for patients were empty. She talked to the set designer, pointing out that the Civil War hospital would likely have filled the shelves with supplies because hospitals often didn't have places to put them.

"There were no storerooms, so they had to use every available bit of space to store all the stuff they did have," she said. "We worked it out, and the next day, there was stuff on those shelves."

"To see them re-create this world and pay such close attention to making it seem that it's really that Civil War place is quite wonderful and thrilling," Schultz said.

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## STUDENT SPOTLIGHT



Rebecca Critser

### **Scholar named for Woltman Endowed Fellowship in Health Communications**

Rebecca Critser, a graduate student pursuing a Juris Doctor in conjunction with a health law certificate at the Robert H. McKinney School of Law as well as a Master of Arts in philosophy from the Department of Philosophy in the IU School of Liberal Arts at Indiana University-Purdue University Indianapolis, has been selected as the recipient of the Richard and Kaye Woltman Endowed Fellowship in Health Communications for the 2017-18 academic year in recognition of her endeavors in bioethics, philosophy and health care law.

Critser earned her Bachelor of Science in animal behavior at Bucknell University and worked in the biotech industry before coming to IUPUI. In the spring of 2016, she began an externship at the [Fairbanks Center for Medical Ethics](#), where she met Susan Hickman, co-director of the Research in Palliative and End-of-Life Communication and Training Center -- or RESPECT Center -- and one of the two directors of the Woltman fellowship.

"Dr. Hickman and I conducted a review of all Physician Orders for Scope of Treatment forms, a tool used to document patient preferences for end-of-life care, currently in use throughout the United States. The goal is to help strengthen this already valuable tool. The externship was nearing its end, but now, through this fellowship, I can continue that work and gain valuable insight into the difficulties encountered by health care professionals who provide end-of-life care as well as the patients they serve," said Critser.

The Richard and Kaye Woltman Endowed Fellowship in Health Communications is a one-year endowed fellowship of \$5,000 that enables a graduate student with an interest in palliative and end-of-life communications to attain a higher understanding of strategies to improve communication with seriously ill patients and their loved ones. By developing current students through this fellowship, the Woltman family, the RESPECT Center and the IU School of Nursing hope to promote excellence and build upon positive communication with the next generation of nurses and caregivers.

This program is supported through a generous gift from the Richard and Kaye Woltman family and is directed by IU School of Nursing adjunct faculty member Lucia D. Wocial, in collaboration with School of Nursing professor Hickman.

"Rebecca was selected as the next Woltman scholar due to her commitment to bioethics and the law and her desire to

improve patient care at a policy level," Wocial said. "She values and recognizes the human lives behind the ethical issues that she studies, and she brings a powerful combination of care and concern for justice to the work we do."

Over the next year, Critser will attend the RESPECT Center's monthly meetings as well as the RESPECT Conference on March 3 in Carmel, Indiana. She will support the work of the Woltman Inter-professional Communication Scholars Program, or WISP, an innovative training program for health care providers who want to improve teamwork with colleagues and advance communication skills with patients and families. She will also assist with other details related to the RESPECT Center and WISP, as well as produce regular reports detailing activities that contribute to her ongoing development in the area of palliative and end-of-life communication.

"I am excited to be able to contribute to the work that Dr. Hickman and Dr. Wocial are doing at the RESPECT Center," Critser said. "And, thanks to the Woltman family, I can continue to acquire this valuable knowledge and a better understanding of end-of-life care. They are lessons that I will carry into the future work I do as an ethicist and a lawyer."

This fellowship will exist in perpetuity, continuing to enable graduate students to focus their studies on communication during end-of-life and palliative care in the hopes of a brighter future for caregiver-patient relationships.

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## TRANSLATIONAL RESEARCH IMPACT



### **African-American veterans in mental health care are not as activated as White veterans**

Patients who are activated--meaning they have the knowledge, skills and confidence to manage their health and health care--have better health outcomes. A new study provides evidence that male and female African-American veterans receiving outpatient mental health services are not as activated as White veterans.

In addition to demonstrating an association between race and lower patient activation, the study shows that the relationship between African-American veterans and their mental health providers is not as strong as the relationship between White veterans and their providers. This difference persisted after adjusting for socio-demographic factors and the study participants' length of time with their providers. Stronger patient-provider relationships--known as working alliances--have been linked to higher treatment adherence. The study also reported that the African-American veterans had significantly lower medication adherence rates than White veterans.

Johanne Eliacin, PhD, clinical psychologist

and psychological anthropologist, led the study.

"A clear implication from this study is that one size does not fit all. We need to tailor our efforts to meet the needs of African-American veterans--and meet them where they are," said VA Center for Health Information and

Communication, Regenstrief Institute and Indiana University Center for Health Services and Outcomes Research investigator Johanne Eliacin, PhD, the health services researcher who led the new study. "When it comes to being activated and engaged in their own health care, African-American veterans have more specific challenges that need to be better understood and addressed.

"There needs to be more research to develop strategies to motivate patients to be involved in their care and to work more effectively with their providers. And we need to learn how to help them sustain engagement over time."

Dr. Eliacin is a clinical psychologist and psychological anthropologist. She also has an appointment as an assistant research professor in the Department of Psychology in the School of Science at Indiana University-Purdue University Indianapolis. Her research focuses on sociocultural determinants of mental health and on reducing health disparities. She has conducted previous studies--published in 2016--on patient activation, patient engagement and visit preparation among African-American veterans in mental health care.



All participants in the new study were seen at Richard L. Roudebush VA Medical Center in Indianapolis, had at least one mental health diagnosis and were receiving psychiatric treatment. The majority were men. Three quarters had completed some higher education, although only a quarter were employed. Participants, both African-American and White, had worked with their mental health provider for an average of 28 months. There were no significant differences between African-Americans and White patients in terms of age (mean age was 51), education or employment status.

"The Relationship Between Race, Patient Activation, and Working Alliance: Implications for Patient Engagement in Mental Health Care" has been [published online ahead of print in Administration and Policy in Mental Health and Mental Health Services Research](#). The study was supported by grants from the Department of Veterans Affairs.

Authors, in addition to Dr. Eliacin are Jessica M. Coffing, MPH; Marianne S. Matthias, PhD; Diana J. Burgess, PhD; Matthew J. Bair, MD and Angela L. Rollins, PhD. All have VA affiliations. Drs. Matthias and Bair are Regenstrief Institute investigators. Dr. Matthias is on the faculty of IUPUI's School of Liberal Arts, Dr. Bair is on the faculty of IU School of Medicine and Dr. Rollins is on the faculty of IUPUI's School of Science. Dr. Burgess is on the faculty of the University of Minnesota.

The authors conclude, "As efforts to enhance patient engagement accelerate, it is vital that they address the needs of all patients, especially minority groups who experience a disproportionate burden of unmet mental health needs, yet are often less engaged in mental health services. Racial differences in patient engagement may lead to wasted health resources and add to mental health disparities. An important step toward improving engagement among minority patients is to develop a better understanding of the relationship between race and engagement in mental health care."

Dr. Eliacin notes that in addition to African Americans, future work should focus on other minorities within the veteran population who experience challenges in engagement and communication with health providers including Hispanics, Asians, Pacific Islanders and gender minorities such as transgender and LGBT veterans.

"Individuals who are socioeconomically disadvantaged and have low level of education are more likely to suffer from chronic conditions, and often these are the people who are left behind," said Dr. Eliacin. "Yet these are the individuals we really need to help become more activated and engaged in their health care because they can see the greatest gain."

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## OVCR INTERNAL GRANT DEADLINES

### 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.

### 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.

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## OVCR EVENTS AND WORKSHOPS

Proposal Development and Submission for Humanities Scholars

This series of three presentations addresses the value of funded research for career development for faculty working in the humanities. The presentations should give participants a basic understanding of the principles of preparing and submitting funding proposals and will culminate in the start of an actual proposal. Participants are urged to attend all three workshops, and we anticipate that the series will be repeated during fall semester 2017. This series is sponsored by OVCR and the IUPUI School of Liberal Arts.

#### Session 1: Preliminary Considerations in Obtaining Funding for Work in the Humanities

Target Audience: IUPUI and IUPUC faculty and librarians working in the humanities

Friday, January 27, 2017

11:00am – 12:30pm

Cavanaugh Hall Room 438

This session is devoted to preliminary considerations in seeking and applying for external funding to support research and scholarship in the humanities. Topics to be discussed include motivations for applying for grant funding, defining research and scholarship goals, matching research and scholarship goals to specific funding agencies, understanding how funding agencies operate, and basic procedures for applying for funding. The session will consist of a brief presentation followed by an open discussion with a panel of faculty members who have been successful in receiving grants to support their research and scholarship in the humanities. Participants are welcome to bring a lunch to the session.

[Click here to register](#)

#### Session 2: Top 10 Success and Blunders in Proposal Development and Submission

Target Audience: IUPUI and IUPUC faculty and librarians working in the humanities

Friday, February 17, 2017

1:00pm - 2:30pm

Cavanaugh Hall Room 508

This session will cover best practices for developing a proposal whose components—administrative and technical—build a cohesive and persuasive case for funding, and the role played by the SLA Office of Research and the IUPUI Office of Research Administration in the submission process. We'll focus on the administrative documents, including budget and budget narrative, and their role in answering all the questions reviewers may have so your proposal goes straight to the "Let's Fund This One!" stack. We'll have a look at common blunders too, to help prevent your proposal from ending up in the "Do Not Review" or "Do Not Fund" group. Participants will leave with tools to facilitate the preparation process and meeting the routing and submission deadlines.

[Click here to register](#)

#### Session 3: Developing Your Grant Proposal: Turning Ideas into Funding

Target Audience: IUPUI and IUPUC faculty and librarians working in the humanities

Friday, March 24, 2017

1:00pm - 2:30pm

Cavanaugh Hall Room 508

Designed for humanities scholars seeking assistance with writing grants, this workshop will introduce participants to key grant writing concepts and provide them with the opportunity to develop a one-page statement of significance and intent. Along with the workshop, participants will have the opportunity to engage with a series of online resources, including presentations, exemplar successful grants, and podcasts that will position them to be successful in their grant-writing. A combination of discussion and writing exercises, the workshop will result in a map for attendees to follow to complete their first (or improve their existing) grant proposal.

[Click here to register](#)

#### Basic Proposal Development

Target Audience: IUPUI and IUPUC faculty, postdoctoral fellows, and graduate students

Thursday, February 9, 2017

11:30am – 1:30pm

University Library Room 1126

This presentation focuses on basic procedures for developing successful proposals to funding agencies that support research and other scientific/scholarly/educational activities. Topics we will discuss include clarifying project objectives (e.g., narrowing the scope of research); matching project objectives to funding agencies (e.g., finding funding opportunities); becoming familiar with funding agencies (e.g., understanding agency missions, application procedures, and review criteria); basic budget construction (e.g., calculating indirect costs); and communicating objectives and methods (e.g., communicating complex ideas in a limited space); all related to persuading agencies to give you money. Participants are welcome to bring a lunch to the session.

[Click here to register](#)

### NSF CAREER Program

The Faculty Early Career Development (CAREER) Program is a National Science Foundation-wide activity offering prestigious awards in support of junior faculty who exemplify the role of teacher-scholars through outstanding research, excellent education, and the integration of education and research within the context of the mission of their organizations. The NSF deadlines for submission of proposals are expected to be July 19, 20, and 21, 2017, depending on discipline. If you are interested in applying and would like assistance by OVCR staff, be sure to attend the following sessions. These sessions are sponsored by the following OVCR units: Proposal Development Services and the STEM Education and Innovation Research Institute.

#### Session 1: General Information and Eligibility

Target Audience: IUPUI and IUPUC Assistant professors in disciplines funded by NSF

Friday, February 24, 2017

11:30am - 1:30pm

University Library Room 1126

An overview of the guidelines and eligibility requirements will be presented. Participants will also learn what resources are available to support development of a competitive proposal to the National Science Foundation CAREER program. Participants are welcome to bring a lunch to the session.

[Click here to register](#)

#### Session 2: Panel of Successful Applicants Target Audience: IUPUI and IUPUC Assistant professors in disciplines funded by NSF

Thursday, March 23, 2017

10:00am - 12:00pm

University Library Room 1126

As a follow-up to the initial introductory session in February, recent NSF CAREER award recipients will share insights into securing funding through this program and address questions from session participants.

[Click here to register](#)

### 2017 JagStart Pitch Competition

Target Audience: faculty, staff, students, community members

Friday, March 3, 2017

1:30pm - 3:30pm

University Library Lilly Auditorium

**JagStart** is an annual event that pits contestants against the clock to pitch their original ideas to a panel of judges. Students enter the competition to showcase their ideas for innovative new products, new business ventures, or compelling solutions to social challenges. JagStart rewards those who have the best ideas—and the best pitches—with cash prizes!

[Click here to register](#)

### Developing Complex, Multi-Investigator, Multi-Institutional Proposals

Target Audience: IUPUI and IUPUC senior faculty with previous or current external funding; Signature Center directors  
Thursday, March 30, 2017  
4:00pm - 5:30pm  
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. This session will focus on exploring the distinctions between “standard” and “complex” submissions, navigating through issues of building and organizing the research team, intra- and inter-institutional collaboration, and preparing a successful proposal. Participants will also find out what assistance is available from the staff of Proposal Development Services in the Office of the Vice Chancellor for Research. (Limited to 20 registrants.)

[Click here to register](#)

#### NSF Research Experiences for Undergraduates

Target Audience: IUPUI and IUPUC Faculty interested in mentoring undergraduate researchers  
Friday, April 14, 2017  
11:30am - 1:30pm  
University Library Room 1126

This session will focus on the NSF Research Experiences for Undergraduates (REU) program, which supports active participation by undergraduate students in any of the areas of research funded by the National Science Foundation. The next submission deadline is expected to be August 23, 2017. Proposals for REU Sites are for independent projects that engage several undergraduate students in research on a well-defined common theme. Proposals for REU Supplements are for support of one or two undergraduate students to participate in research under the auspices of a new or ongoing NSF-funded project. Discussion will cover proposal strategies, campus resources, and budgetary considerations. Participants are welcome to bring a lunch to the session.

[Click here to register](#)

#### NSF Graduate Research Fellowship Program

Target Audience: IUPUI and IUPUC First-year graduate students in STEM and STEM education, undergraduate juniors and seniors planning to enroll in STEM or STEM education graduate programs  
Friday, April 21, 2017  
1:00pm – 2:30pm  
University Library Room 1126

This session will introduce interested students to the National Science Foundation (NSF) Graduate Research Fellowship Program (GRFP). The GRFP is an NSF-wide program that provides fellowships to students in the earliest stages of their graduate careers to pursue non-medical research in science, technology, engineering, or mathematics (STEM) or in STEM education. Topics to be discussed include details of the support provided by the fellowship, eligibility requirements, application requirements and procedures, and strategies for developing strong proposals. Submission deadlines for fellowship applications will be the week of October 23, 2017, the specific day dependent on discipline. NOTE: Eligibility for the NSF GRFP is limited to students who are U.S. citizens, nationals, and permanent residents. This session is sponsored by the following OVCR units: Proposal Development Services and the STEM Education Innovation and Research Institute.

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## Recent External Awards

### Grants and Awards – December 2016

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PI	Agency	Project Title	School	Department	Total
Hashino, Eri Ann	NATIONAL INSTITUTE ON DEAFNESS AND OTHER COMM. DIS	Modeling Genetic Inner Ear Disorders with Human Pluripotent Stem Cells	MEDICINE	OTOLARYNGOLOGY & H/N SURGERY	\$3,267,128
Kaplan, Mark H	NATIONAL INSTITUTE ALLERGY & INFECTIOUS DISEASES	Th9 cells in immediate hypersensitivity	MEDICINE	PED-PULMONARY BASIC RESEARCH	\$1,966,875
Guo, Haitao	NATIONAL INSTITUTE ALLERGY & INFECTIOUS DISEASES	Development of an HTS Assay for Discovery of HBV cccDNA Inhibitors	MEDICINE	MICROBIOLOGY & IMMUNOLOGY	\$1,189,244
Farlow, Martin Rhys	UNIVERSITY OF SOUTHERN CALIFORNIA	Alzheimer's Disease Neuroimaging Initiative 3 (ADNI3)	MEDICINE	NEUROLOGY	\$1,051,750
Bodenhamer, David J	LILLY ENDOWMENT, INCORPORATED	Spirit & Place 2017- 2019 Lilly Grant	LIBERAL ARTS	POLIS CENTER	\$650,000

Hess, Jay L	UNIVERSITY OF FLORIDA	Chromatin Mechanisms and Epigenetic Targeting in Hematological Malignancies	MEDICINE	PATHOLOGY AND LABORATORY MED	\$360,000
Knopf, Amy	UNIVERSITY OF NORTH CAROLINA AT CHAPEL HILL	Adolescent Medicine Trials Network for HIV/AIDS Interventions (ATN)	NURSING	NURSING	\$358,422
Bozic, Molly A	CYSTIC FIBROSIS FOUNDATION	GROW-IU16K0	MEDICINE	PED-GASTROINTESTINAL DISEASES	\$233,878
Einterz, Robert Michael	ABBOTT FUND	Academic Model Providing Access To Healthcare (AMPATH) 2016 for Diabetes and Chronic Disease Care	MEDICINE	GENERAL INTERNAL MEDICINE	\$200,000
Sanders, Don B	CYSTIC FIBROSIS FOUNDATION	Viral infections, antibiotics, and the microbiome in infants	MEDICINE	PED-PULM CRITICAL CARE/ALLERGY	\$150,234

	THERAPEUTICS INC.	with CF			
Chen, Jie	U.S. DEPARTMENT OF ENERG	Industrial Assessment Center ? integration of education and practice	E&T	MECHANICAL ENGINEERING	\$150,000
Zhang, Jian-Ting	QRKANSWER LLC	A Novel STAT3 Inhibitor Targeting its DNA-Binding Site for Drug Development	MEDICINE	PHARMACOLOGY & TOXICOLOGY	\$142,175
Osili, Una O	CHARLES STEWART MOTT FOUNDATION	The 2017 Index of Philanthropic Freedom	PHILANTHROPY	LILLY FAMILY SCHOOL OF PHILANTHROPY	\$140,000
Lahiri, Debomoy K.	PROVAIDYA, LLC	Development of peptide inhibitors for neuroinflammation and neurodegeneration	MEDICINE	PSYCHIATRY	\$120,970
Vest, Joshua Ryan	ALASKA DEPARTMENT OF HEALTH AND SOCIAL	Early Childhood Comprehensive Systems (ECCS)	PUBLIC HEALTH	HEALTH POLICY & MANAGEMENT	\$120,000

	SERVICES	Impact Project			
Tepper, Robert S.	OREGON HEALTH & SCIENCE UNIVERSITY	Maternal vitamin C supplementation to decrease effects of smoking during pregnancy on infant lung function and health: Follow-up of two randomized trials and association with changes in DNA methylation	MEDICINE	PED-PULMONARY BASIC RESEARCH	\$117,594
Brown, Cynthia Diane	CYSTIC FIBROSIS FOUNDATION	Improving Physical Activity and Fitness in an Outpatient CF Center	MEDICINE	PULMONARY	\$103,680
Chalasani, Naga P.	PURDUE UNIVERSITY	Fatty Acid Desaturase 1 (FADS1) Variants and Non-alcoholic Fatty Liver Disease	MEDICINE	GASTROENTEROLOGY	\$101,682



Dagher, Pierre C.	AUGUSTA UNIVERSITY	Molecular and pathological signature of the human kidney tubule in progression of diabetic nephropathy.	MEDICINE	NEPHROLOGY	\$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.

### NATIONAL INSTITUTES OF HEALTH

**Research Program Award (R35):** The purpose of the NINDS Research Program Award (RPA) is to provide longer-term support and increased flexibility to Program Directors (PDs) /Principal Investigators (PIs) whose outstanding records of research achievement demonstrate their ability to make major contributions to neuroscience. RPAs will support the overall research programs of NINDS-funded investigators for up to 8 years, at a level commensurate with a PD/PI's recent NINDS support. This greater funding stability will provide investigators with increased freedom and flexibility which may allow them to be more adventurous in their research, to take greater risks, to embark upon research that breaks new ground, to undertake research projects that require a longer timeframe, and/or to extend previous discoveries in new directions. Research supported through the RPA must be within the scope of the NINDS mission. Deadlines: Letter of Intent: February 21, 2017; Application: March 21, 2017. <https://grants.nih.gov/grants/guide/rfa-files/RFA-NS-17-020.html>

**Initiative to Maximize Research Education in Genomics: Diversity Action Plan (R25):** This opportunity seeks to facilitate the training of individuals at all careers levels (the undergraduate, graduate, post baccalaureate, postdoctoral and faculty levels) from diverse backgrounds underrepresented in scientific disciplines relevant to genomics to enable them to pursue genomics research that spans all areas of interest to NHGRI later in their careers. This is a limited competition funding opportunity announcement and is limited to PD(s)/PI(s) with NHGRI applications or grants in the following areas: Centers of Excellence in Genome Science; databases, large-scale sequencing and institutional training grants. In all cases, the PD/PI of any of the previous applications/grants cited above, must be the PD/PI of the R25. Deadline: May 25, 2017. <http://grants.nih.gov/grants/guide/pa-files/PA-16-345.html>

**Exploratory/Developmental Bioengineering Research Grants (EBRG) (R21):** This opportunity solicits applications which establish the feasibility of technologies, techniques or methods that: 1) explore a new multidisciplinary approach to a biomedical challenge; 2) are high-risk but have high impact; and 3) develop data that may lead to significant future research. An EBRG application may propose hypothesis-driven, discovery-driven, developmental, or design-directed research and is appropriate for evaluating unproven approaches for which there is minimal or no preliminary data. Deadline: Application: June 16, 2017. <https://grants.nih.gov/grants/guide/rfa-files/RFA-CA-17-003.html>

### NATIONAL SCIENCE FOUNDATION

NSF/Intel Partnership on Assisted Programming for Heterogeneous Architectures (CAPA): This opportunity aims to address the problem of effective software development for diverse hardware architectures through groundbreaking university research that will lead to a significant, measurable leap in software development productivity by partially or fully automating software development tasks that are currently performed by humans. The main research objectives for CAPA include programmer effectiveness, performance portability, and performance predictability. In order to address these objectives, CAPA seeks research proposals that explore (1) programming abstractions and/or methodologies that separate performance-related aspects of program design from how they are implemented; (2) program synthesis and machine learning approaches for automatic software construction that are demonstrably correct; (3) advanced hardware-based cost models and abstractions to support multi-target code generation and performance predictability for specified heterogeneous hardware architectures; and (4) integration of research results into principled software development practices. Deadline: December 15, 2017 [http://www.nsf.gov/funding/pgm\\_summ.jsp?pims\\_id=505319](http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=505319)

Ecology and Evolution of Infectious Diseases (EEID): A critical research goal of this program is the generation of principles and conceptual frameworks that organize and inform the research that lead to mathematical, computational, and statistical models of infectious disease dynamics. Diverse modeling approaches are appropriate, including, but not limited to, mathematical equations, computational simulations, geospatial algorithms, and statistical models. For the EEID program, the most competitive proposals are organized around an overarching conceptual framework that leads to such a model. Models should aim to be explanatory beyond the specific system under study and must be well-characterized and rigorously tested.

Among the areas of particular interest are: the role of social influences on the susceptibility of individuals or populations; multiway interactions between pathogenic and non-pathogenic organisms and their mutual hosts; the role of medical, agricultural or environmental practices on pathogen emergence and transmission; emergence of pathogens from non-pathogenic populations; host switching; evolutionary dynamics in an ecological context such as disease control interventions and drug resistance. These topics have significant ecological and evolutionary components that should be studied as a system, not in isolation. Depending on the hypotheses or research questions being addressed, investigations might entail some combination of laboratory experiments, field observations or manipulations, public health interventions, (although clinical trials are beyond the scope of the EEID program), analysis of social and cultural processes, or ethnographic studies. Research may also focus on novel analyses of existing data and/or theoretical investigations of ecological and evolutionary dynamics. Investigations may focus on model infectious disease systems in natural (terrestrial or freshwater) or laboratory settings where those systems elucidate general principles. Deadline: November 16, 2017 [http://www.nsf.gov/funding/pgm\\_summ.jsp?pims\\_id=5269](http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=5269)

Alliances for Graduate Education and the Professoriate (AGEP): The AGEP program goal is to increase the number of historically underrepresented minority faculty, in specific STEM disciplines and STEM education research fields, by advancing knowledge about pathways to career success. The program objectives include: To support the development, implementation and study of innovative models of doctoral education, postdoctoral training, and faculty advancement for historically underrepresented minorities in specific STEM disciplines and/or STEM education research fields; and to advance knowledge about the underlying issues, policies and practices that have an impact on the participation, transitions and advancement of historically underrepresented minorities in the STEM academy.

The AGEP Transformation Alliance projects are collaborative research projects representing new strategic alliances of institutions and organizations to develop, implement, and study evidence-based models to transform doctoral education, postdoctoral training, and faculty advancement for historically underrepresented minorities in specific STEM disciplines and/or STEM education research fields. Embedded social science and education research contributes to the knowledge base about how transformational models eliminate or mitigate negative factors and promote positive policies and practices for historically underrepresented minorities. Deadline: June 14, 2017. [http://www.nsf.gov/funding/pgm\\_summ.jsp?pims\\_id=5474](http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=5474)

PATIENT-CENTERED OUTCOMES RESEARCH INSTITUTE Communication and Dissemination Research: This opportunity invites applications that study the comparative effectiveness of communication and dissemination strategies. The program is looking for strategies aimed at informing and empowering patients, caregivers, and other healthcare decision makers so that they know what questions to ask and have the information needed to provide support in shared decision making.

This announcement is designed to solicit applications that include:

- The direct comparison of two or more health communication and dissemination interventions or strategies, each of which has established efficacy or is in widespread use

- Research conducted in real-world, clinical care settings and situations
- Proposed research questions and health outcomes that will matter to the patient population, their caregivers, and family members under study, and that will help to guide their healthcare decisions.

Research appropriate for this opportunity includes:

- Communication strategies to promote the use of health and healthcare CER evidence by patients and clinicians
- Dissemination strategies to promote the use of health and healthcare CER evidence by patients and clinicians
- Explanation of uncertain health and healthcare CER evidence to patients and clinicians.

Deadlines: Letter of Intent: Feb. 17, 2017; Application: May 17, 2017. <http://www.pcori.org/funding-opportunities/announcement/communication-and-dissemination-research-cycle-1-2017>

## U.S. DEPT. OF DEFENSE

Focused Program Award-Peer Reviewed Medical Research Program (PRMRP): The vision of the PRMRP is to improve the health and well-being of all military service members, veterans, and beneficiaries. The PRMRP challenges the scientific and clinical communities to address at least one of the FY16 Topic Areas with original ideas that foster new directions along the entire spectrum of research and clinical care. The program seeks applications in laboratory, clinical, behavioral, epidemiologic, and other areas of research to advance knowledge in disease etiology, improve prevention, detection, diagnosis, treatment, and quality of life for those affected by a relevant disease or condition, and to develop and validate clinical care or public health guidelines. *Deadlines: Pre-Application: June 30, 2017; Application: October 26, 2017* . <http://cdmrp.army.mil/funding/prmrp.shtml>

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*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](mailto: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 at [schin@iupui.edu](mailto:schin@iupui.edu).

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