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## FEATURE STORY

### Biotech startup based on IU School of Medicine research launches to develop therapy for lung disease

Indiana University Research and Technology Corp., which advances intellectual property developed at Indiana University so it can be commercialized by industry, has optioned technology to Allinaire Therapeutics that could treat patients affected by lung-related diseases. Allinaire Therapeutics was launched by BioMotiv, a Cleveland-based drug-development accelerator.

Allinaire Therapeutics is a biotechnology startup that aims to develop novel therapeutics for chronic obstructive pulmonary disease, or COPD. The disease is characterized by inflammation and progressive destruction of lung tissue, leading to difficulty in breathing.

The discoveries were made by Dr. Irina Petrache, chief of pulmonary, critical care and sleep medicine at the National Jewish Health Center in Denver, and [Matthias Clauss](#), associate research professor of medicine at the Indiana University School of Medicine. Together, they are Allinaire's scientific founders.



Matthias Clauss, Ph.D.

"More than 3.1 million Americans have been diagnosed with emphysema, one of the components of COPD. COPD is the fourth leading cause of death in the United States, killing more than 120,000 people in 2015," Clauss said. "Therapeutics currently on the market only address the symptoms of COPD, trying to help people breathe better. The potential of our discovery is to slow down the progression of COPD and perhaps reverse it."

Baiju R. Shah, CEO of BioMotiv, said Petrache and Clauss discovered a novel therapeutic target that plays a role in the lung inflammation and airway remodeling that lead to the disease.

"They have demonstrated that a therapeutic antibody against this target has a strong potential to slow the progression of the disease," Shah said. "We look forward to working with them to advance their discoveries into breakthrough medicines to help patients with COPD and other pulmonary diseases."

### **About Indiana University Research and Technology Corp. (IURTC)**

[IURTC](#) is a not-for-profit corporation tasked with protecting and commercializing technology emanating from innovations by IU researchers. Since 1997, IU research has generated more than 2,700 inventions, resulting in over 3,900 global patent applications being filed by IURTC. These discoveries have generated \$133M in licensing and royalty income, including \$111M in funding for IU departments, labs and inventors.

## **ANNOUNCEMENTS**

### **IUPUI faculty members receive \$85,000 in FORCES funding to commercialize research**

IUPUI researchers in the School of Engineering and Technology, School of Medicine, and School of Science have received a total of \$85,000 in FORCES funding to support the development and commercialization of their work.

The Office of the Vice Chancellor for Research oversees [FORCES](#), or Funding Opportunities for Research Commercialization and Economic Success. The initiative has awarded more than \$1M to more than 30 faculty members since 2011.

[Kevin Michael Berkopes](#), a mathematician in the School of Science and director of the [Mathematics Assistance Center](#) and Statistics Assistance Center, received \$35,000 for "Virtual Learning Spaces: Creating Virtual Spaces for Future Teacher Support and Professional Exam Preparation." The work could support future mathematics and K-5 general-education teachers.

"This FORCES funding will help researchers from the School of Science and the School of Education collaborate to create high-tech virtual learning spaces," he said. "The intention is to create a virtual learning space that is embedded in the learning management system canvas and available free of charge to all IUPUI students enrolled in the elementary-education degree path."



Kevin Michael Berkopes

Berkopes founded Crossroads Education through the [Spin Up](#) program of the Indiana University Research and Technology Corp. to commercialize his work.

"Should the product prove impactful, we intend to apply for funding to investigate our virtual learning space design as something that is exportable to different sectors. We hope that we can research and investigate new technologies for providing quality interactions with

mathematical content and to enable collaboration and professional development for current and future teachers of mathematics," he said.

[Dr. Elliot J. Androphy](#), the Kampen-Norins Professor and chair of the Department of Dermatology at the School of Medicine, received \$25,000 for "Evaluation of Novel Compounds for Motor Neuron Disease." The project will determine whether novel drug-like compounds being developed have activity in a human neurologic disease.

"The funding will allow us to purchase the mouse model of this disease, hire staff and perform experiments," he said. "If successful, we will apply for additional grants to characterize the mechanism by which these drugs act. It could be advanced into a clinical trial for people afflicted with neurologic disease."



Elliot J. Androphy

[Andres Tovar](#), assistant professor in the School of Engineering and Technology, received \$25,000 for "Commercialization of a Topology Optimization Algorithm to Design Lightweight, Multi-Functional Components with Optimized Internal Cellular (Porous) Structure." The project could provide engineering product designers with a tool that automatically synthesizes porous architectures.

"The FORCES funding will facilitate the commercialization of this design algorithm, which was disclosed to IURTC in 2014. The algorithm has also been developed from existing research sponsored by Honda R&D America and the Walmart Foundation," he said. "The FORCES funding will support the development of an alpha version of the algorithm to make the design tool marketable."



Andres Tovar

The next round of applications for FORCES funding are due September 15. Contact Karen White, 317-274-1083, [kfwhite@iupui.edu](mailto:kfwhite@iupui.edu), for information.



**INDIANA UNIVERSITY**  
FULFILLING *the* PROMISE

### **IU launches *Insights Into Innovation* website**

In honor of National Inventors Month (May 2016), IU Communications created a long-form story platform/website, *Insights into Innovation* that features 12 prominent IU innovators. The site ([inventors.iu.edu](http://inventors.iu.edu)) launched on May 5th and showcases cutting-edge and groundbreaking research and creative activity to audiences across the university, the State of Indiana and beyond.

### **CENTER SPOTLIGHT**

**\$400,000 grant from Duke Energy Foundation expands Discovering Science of the Environment program**



## Center for Earth and Environmental Science

*Indiana University ~ Purdue University, Indianapolis*

The Duke Energy Foundation will present Indiana University-Purdue University Indianapolis' [Center for Earth and Environmental Science](#) with a \$400,000 charitable grant May 6, enabling the center to double the number of students it reaches in grades 4 through 9 with its Discovering the Science of the Environment program.

"With this grant, we're advancing STEM education and expanding resources across the state," said Duke Energy Indiana President Melody Birmingham-Byrd. "In essence, we're putting science education on wheels. Our Indiana service area stretches over 22,000 square miles, and we are excited about partnering with IUPUI to take quality programming around the state."

The presentation ceremony will feature remarks by Birmingham-Byrd; IUPUI Chancellor Nasser Paydar; and Simon J. Rhodes, dean of the School of Science at IUPUI. It will take place between 9:15 and 10:15 a.m. on the terrace of the Indiana State Museum, 650 W. Washington St.

"The generous gift from the Duke Energy Foundation allows CEES to continue and expand educational programs that are discovery based and make science real and relevant," said Paydar. "CEES exemplifies IUPUI's great strength as a partner working with schools and community organizations in Central Indiana to encourage and facilitate educational attainment at every level."

With the Duke Energy Foundation funding, CEES will expand its programs to include alternative energy and energy conservation and purchase a new mobile science trailer equipped with interactive technology tools, web interface and GIS mapping capabilities that will provide hands-on outdoor lessons in science and the environment.

CEES' Discovering the Science of the Environment has been serving about 3,000 students a year, mainly in the Indianapolis area. The Duke support will allow expansion to areas outside of Marion and surrounding counties.

"We are so happy to partner with Duke Energy Foundation to allow the children of Central Indiana to discover their potential to be scientists, mathematicians or engineers," Rhodes said. "For our economy and quality of life, Indiana needs STEM graduates."

Each year, through the Duke Energy Foundation, the company dedicates a portion of its shareholder earnings to charitable organizations and educational institutions statewide, investing in areas where they can have the greatest impact. By investing in CEES, the Duke Energy Foundation funded two of its highest priorities: education and science.

[Discovering the Science of the Environment](#) was established by CEES to:

\*Fundamentally change the way students and the public view the environment and their role in improving environmental quality;

\*Develop scientifically and technologically skilled students and teachers who are engaged in scientific inquiry; and

\*Interest students in career pathways in science, math, engineering and technology.

## INSTITUTE SPOTLIGHT

### Study finds hospice use does not increase long stay nursing home decedents' care costs

Use of hospice services does not increase care costs in the last six months of life for long-stay nursing homes residents according to an analysis conducted by researchers from the Indiana University Center for Aging Research and the Regenstrief Institute.

Avoidance of costly hospitalization and subsequent post-acute care in the nursing home appears to offset hospice services costs, even when hospice services are provided over a prolonged period of time according to the study of 2,510 long stay nursing home decedents, a third of whom received hospice services. Age, race or gender had no effect on the findings.



Kathleen Unroe, M.D., MHA

"[Effect of Hospice Use on Costs of Care for Long Stay Nursing Home Decedents](#)" is published online ahead of print in the Journal of the American Geriatrics Society.

"The government, through Medicare and Medicaid, spends a lot of money on this vulnerable population, but is it getting appropriate value?," queries [Indiana University Center for Aging Research](#) and [Regenstrief Institute](#) investigator Kathleen Unroe, M.D., MHA, who led the study. "High quality end-of-life care for those living in nursing homes is the goal.

"An active debate about length of stay, reimbursement and other aspects of Medicare and Medicaid payment reform is underway. Our study provides data relevant to the evolving policy landscape surrounding hospice care." Dr. Unroe is an assistant professor of medicine at the [IU School of Medicine](#).

Hospice is a service, not a place. Hospice care can and does take place in nursing homes with specially trained hospice workers coming to the facility to provide palliative care to terminal residents who have elected, or whose families have elected, hospice care which focuses on end-of-life comfort rather than cure.

"Hospice care is not always a perfect fit in nursing homes – it can be difficult to determine when a person with advanced dementia, for example, has truly reached the end of life," said Dr. Unroe. "But despite concerns that Medicare's hospice benefit is not being used appropriately in nursing homes, we didn't find evidence of cost shifting between Medicare and Medicaid."

The study found few significant differences in clinical or demographic characteristics between long stay nursing home decedents who did and did not receive hospice services near the end of life. The exception was residents with a cancer diagnosis, who were more likely to receive

hospice than those with other diagnoses, also true of hospice use by those not in nursing homes. Advanced dementia also was associated with increased hospice use.

The long stay nursing home residents whose records were reviewed for this study were disproportionately poor, non-white and characterized by high health care costs -- individuals often not included in healthcare utilization studies.

In addition to Dr. Unroe, co-authors of the study are Greg Sachs, M.D., of the IU Center for Aging Research, Regenstrief Institute and IU School of Medicine; M.E. Dennis, B.A., of the IU Center for Aging Research and Regenstrief Institute; Susan Hickman, Ph.D., of the IU School of Nursing; Timothy Stump, M.A., of the Regenstrief Institute; Wanzhu Tu, Ph.D. and Christopher Callahan, M.D., of the IU Center for Aging Research, the Regenstrief Institute and IU School of Medicine. Dr. Sachs is division director of the IU School of Medicine's Division of General Medicine and Geriatrics. Dr. Callahan is founding director of the IU Center for Aging Research.

In 2014 the authors published a study in the Journal of General Internal Medicine comparing the characteristics of hospice patients in nursing homes with hospice patients living in the community.

Both studies were funded by National Palliative Care Research Center Grant 4183655 and National Institute on Aging Grants R01 AG031222 and K24 AG024078.

## FACULTY SPOTLIGHT

### Librarian receives honor for national and international work

[Tina Baich](#), associate librarian at University Library at Indiana University-Purdue University Indianapolis, is the recipient of this year's Virginia Boucher-Online Computer Library Center Distinguished Interlibrary Loan Librarian Award. Baich is head of resource sharing and delivery services, as well as bibliographic and metadata services, at the IUPUI library.

The Online Computer Library Center award recognizes a degreed librarian for outstanding professional achievement, leadership, and contributions to interlibrary loan and document delivery through recent publication of significant professional literature, participation in professional associations and/or innovative approaches to practice in individual libraries. Recipients of the annual award receive \$2,000 and a citation.



Tina Baich

In its release about the award, the American Library Association cited Baich's "outstanding and sustained contributions to the resource-sharing community both nationally and internationally, her leadership on the Indiana Shared Print Project, her willingness to share her expertise with colleagues through a strong publication record, and an impressive array of conference presentations and online courses." The award announcement also acknowledges Baich's "unflinching commitment to enhancing the teaching and learning mission of academic libraries throughout the State of Indiana."

Baich has been with University Library since 2007. She is a valuable collaborator and a leader, both within the library and in the profession, distinguishing herself in the areas of professional

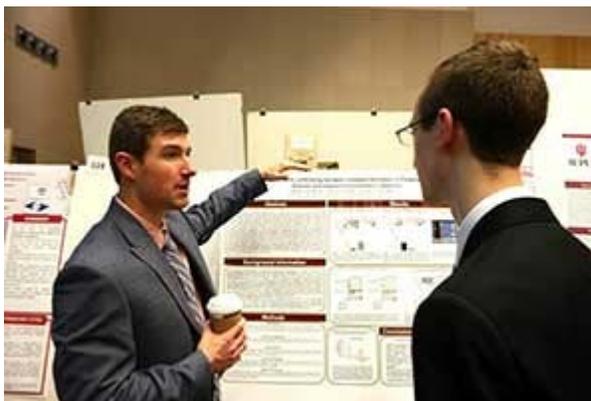
development and scholarship as well as service to the profession. She has made particularly important contributions in Indiana, including her work with the Indiana Shared Print Project.

She is extremely active in professional organizations pertinent to her daily work and research and has held leadership positions on a number of committees engaged in important statewide and national resource-sharing initiatives. She is a fellow of the International Federation of Library Associations and Institutions.

## STUDENT SPOTLIGHT

### Fired up about neuronal protein overexpression

Senior neuroscience-chemistry (BS-ACS) double major Cameron Morris embarked on undergraduate research in AY 2014-2015 for his capstone project, investigating psychological aspects of neuroscience under the tutelage of Anthony J. Baucum, II, Ph.D., Assistant Professor, Department of Biology. He continued his work on DNA-protein overexpression in living cells as a 2015 Undergraduate Research Opportunities Program (UROP) summer fellow, and his ongoing work in Dr. Baucum's laboratory garnered an honorary mention for Cameron's oral presentation on "Mechanisms underlying the SAPAP3 and spinophilin interaction: Implications in OCD and Parkinson's disease" at the Midwest Undergraduate Cognitive Science Conference (MUCSC) on April 9, 2016, at Indiana University Bloomington.



Cameron Morris presenting his faculty-mentored research at IUPUI Research Day 2016

Implications in OCD and Parkinson's disease" at the Midwest Undergraduate Cognitive Science Conference (MUCSC) on April 9, 2016, at Indiana University Bloomington.

Remarking, "My work is *part* of who I am, but it's not *all* that I am," this Millennial, Peer-led Team Learning (PLTL) leader says of his work as a mentor for Chemistry 105 recitation, "It's challenging; I *love* it!" During AY 2015-2016, Cameron began serving as a Center for Research and Learning (CRL) ambassador, meeting with interim executive director Dominique M. Galli, Ph.D.; brainstorming with her in an advisory capacity on how to attract freshmen to undergraduate research; and assisting staff with the annual IUPUI Research Day symposium.

Looking forward to his final course this coming fall and aspiring to enter an M.D.-Ph.D. program, Cameron is intrigued with the multiple facets of how each doctorate—the clinical practice and the laboratory research—can inform the other, a phenomenon to which shadowing Eli Lilly and Company neurologist Ann M. Hake, M.D., opened his eyes. Dr. Hake leads a multidisciplinary clinical-trials team on Alzheimer's disease with dosing sites around the globe. Looking ahead, Cameron yearns to see, "how my work can affect patients' lives."

With his undergraduate research focusing on molecular mechanisms, i.e., protein interaction, that can have implications on the disease states of Obsessive-Compulsive Disorder (OCD) and Parkinson's disease, his professional goal is to pursue a career in academia, continuing to conduct the same type of research but rather focusing on Alzheimer's, which affects a different brain region. Genuinely grateful for the opportunities that he has been fortunate to receive, he notes, "It's kind of rare that as an undergraduate you really get to combine everything you love to do. It's been a really great process!" Ultimately, Cameron Morris would like to leave a legacy of true leadership, which he defines as, "importing what you have learned into others."

The only thing that is going to stick is the impact I've had on others that will affect what they take away, signifying things that I've taught them."

## TRANSLATIONAL RESEARCH IMPACT

### Large reductions in prison population can be made without endangering public safety, study says

A paper published in the journal *Criminology & Public Policy* addresses one of the most important crime policy questions in America: Can prison populations be reduced without endangering the public?

That question was examined by researchers who tested the impact on public safety of California's dramatic efforts to comply with court-mandated targets to reduce prison overcrowding

The results showed that California's Realignment Act, passed in 2011, had no effect on aggregate violent or property crime rates in 2012, 2013 or 2014. When crime types were disaggregated, a moderately large, statistically significant association between realignment and auto theft rates was observed in 2012. By 2014, however, this effect had decayed, and auto theft rates returned to pre-realignment levels.



Jody Sundt

The paper, "[Is Downsizing Prisons Dangerous? The Effect of California's Realignment Act on Public Safety.](#)" was authored by Jody Sundt, associate dean and associate professor at the School of Public and Environmental Affairs at Indiana University-Purdue University Indianapolis; Emily Salisbury, an associate professor of criminal justice at the University of Nevada, Las Vegas; and Mark Harmon, an assistant professor in the Department of Criminology and Criminal Justice in the Hatfield School of Government at Portland State University.

"The results provide evidence that large reductions in the size of the prison population can be made without endangering the overall safety of the public," Sundt said. "Three years after the passage of the Realignment Act, California crime rates remained at levels comparable to what we would predict if the prison population had remained at 2010 levels."

According to the paper, within 15 months of its passage, realignment reduced the total prison population by 27,527 inmates and saved \$453 million.

Realignment substantially reduced the size of the prison population by shifting responsibility for certain groups of offenders to local jurisdictions.

The researchers found that with a mixture of jail use, community correction, law enforcement and other preventive efforts, California counties have provided a comparable level of public safety to that previously achieved by state prisons.

That's a far cry from what was believed in the mid-1970s, when the U.S. prison population began a steady climb that continued until 2010, the first time in 30 years the number of inmates declined.

The prison buildup was based on the premise that incarceration improves public safety, the researchers wrote in the paper. As the buildup began, some argued that the nation had a clear choice -- build more prisons or tolerate higher rates of violent crime.

Confidence in the utility of incarceration was so great that policies to increase sentence lengths and punish a range of crimes with imprisonment were pursued with vigor over several decades by every jurisdiction in the United States, the researchers wrote.

"This issue is complicated, but I think the safety effects of prison have been oversold," Sundt said. "Many of the estimates of the effectiveness of incarceration were based on a comparison to doing nothing. The estimates tend to be too optimistic because they are not really comparing the preventive effect of prison to other options that are available for addressing crime."

The research study did not address the best ways to reduce prison populations, but Sundt said, "If we want to reduce the size of the prison population, we should think about who we are currently sending to prison and whether we can supervise them as effectively or perhaps more effectively in the community."

Another consideration, Sundt said, would be to consider "how we can reduce the length of stay in a way that balances the public safety and accountability desires of the public with the economic and social costs of prison. We can reduce sentences in ways that are rational and recognize the risk that offenders pose."

"For the first time in decades, it appears that a window of opportunity for justice reform is opening to allow for a reevaluation of the effectiveness and wisdom of policies that have created the largest prison population in the world," the researchers wrote.

## INTERNAL GRANT DEADLINES

**Indiana Clinical and Translational Sciences Institute (CTSI), Community Health Engagement Program (CHEP) 2016 Pilot Program Request for Applications**



**INDIANA**ACTS  
*Clinical and Translational Sciences Insti*

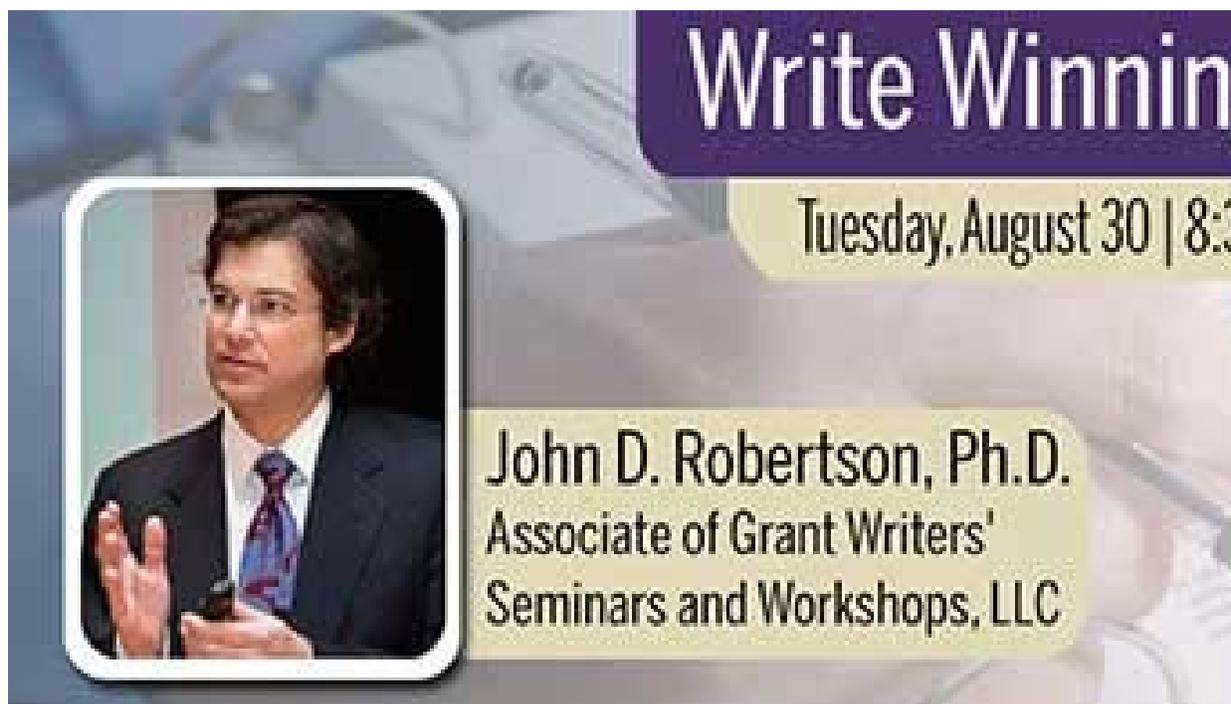
The Indiana CTSI, CHEP is soliciting proposals for community-based research projects. This RFA will fund pilot projects of community-university partnerships focused on program evaluation, feasibility or preliminary data collection for extramural grant submissions.

These projects are to pursue one or both of the following: (1) to improve an important feature of health or health care or (2) to perform a needed evaluation of a health-related program. Projects that propose achieving their objectives by changing (or demonstrating the potential to change) policy, systems, and/or the environment are encouraged. See [FAQ](#) page for more details. There must be 1) a university partner and 2) a community partner for the project, and both partners must currently be working in an Indiana-based institution or organization. The

Indiana CTSI, CHEP will provide up to \$25,000 in funding per pilot project. Proposed project duration should not exceed 12 months.

**Proposals are due by June 1, 2016 at 5:00 pm (EST).** For more information, go to <https://www.indianactsi.org/chep/2016-chep-rfa> and our [FAQ](#) page.

## EVENTS AND WORKSHOPS



The poster features a background image of a person writing. On the left, there is a circular inset photo of John D. Robertson, Ph.D., a man in a suit and tie, gesturing with his hands. To the right of the photo, the text reads: "Write Winning" in large white letters on a dark purple background, followed by "Tuesday, August 30 | 8:30" in white on a yellow background. Below that, in black text on a yellow background, is "John D. Robertson, Ph.D. Associate of Grant Writers' Seminars and Workshops, LLC".

This seminar comprehensively addresses both conceptual and practical aspects of the grant-writing process. All participants will receive light breakfast, boxed lunch, and a copy of The Grant Application Writer's Workbook.

[Register »](#)



### Upcoming IAHI Events

Date/Time	Event
06/13/2016 - 06/16/2016 All Day	<a href="#">Workshops   Humanities Intensive Learning + Teaching (HILT) 2016</a> <i>Cavanaugh Hall, Room 503A, Indianapolis</i>

07/06/2016 - 07/12/2016 All Day	<a href="#">The 2016 Summer School of the LabEx DynamiTe   From risk to resilience, from past to present: critical perspectives and comparative approaches</a> Monastero dei Benedettini di San Nicolò l'Arena Piazza Dante, 32 95124 – Catania, Catania
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## 2nd Annual Symposium on Cell Therapy and Regenerative Medicine

June 13, 2016 | 8:00 am - 9:00 pm  
The Rathskellar/Athenaeum  
401 E. Michigan Street  
Indianapolis, IN 46204

Register: <http://www.ihif.org/conference/register/71>

Sponsored by the IU School of Medicine and the Indiana Health Industry Forum, this year's event will focus on two key areas: **commercialization of cell therapy and regenerative medicine** and **healthcare system engagement with cell therapy and regenerative medicine**.

The two Keynote speakers will be Dr. Michael May, focusing on commercialization practices that are being very successfully conducted in Canada at present, and Dr. Andre Terzic, focusing on the development of a Regenerative Medicine service line from his program at the Mayo Clinic.

Attendees are invited to submit abstracts for a poster session, which will be held concurrently and after dinner. Abstracts may be both BASIC and TRANSLATIONAL, and abstract/poster awardees will be selected in each category. Award levels will range from \$250-\$1,000. Please submit your abstracts by e-mailing Michele Schlegelmilch at [mdschleg@iu.edu](mailto:mdschleg@iu.edu). Abstracts should be limited to one page, 12 point Arial font, and may include figures and tables.

Sources for research support should be included on the last line of the abstract.

**Deadline for abstract submission is Friday, June 3.** Information on the dimension of the poster will be provided upon acceptance of the abstract. Questions can be directed to Michele Schlegelmilch at [mdschleg@iu.edu](mailto:mdschleg@iu.edu) or (317) 988-4976.

## RECENT EXTERNAL FUNDING AWARDS

### Grants and Awards – April 2016

PI	Agency	Project Title	School	Department	Total
Bodenhamer, David J	UNITED WAY OF CENTRAL INDIANA	SAVI Task Order 10	LIBERAL ARTS	POLIS CENTER	\$3,560,000
Maupome, Gerardo	NATIONAL INSTITUTE OF DENTAL CRANIOFACIAL RESEARCH	Social Network Dynamics and Oral Health Disparities in Mexican American Immigrants	DENTISTRY	DENTISTRY-RESEARCH	\$3,345,214
Meroueh, Samy	NATIONAL CANCER INSTITUTE	Small-Molecule Antagonists of Ral GTPases in Cancer	MEDICINE	BIOCHEMISTRY/MOLECULAR BIOLOGY	\$2,953,661
Guo, Haitao	NATIONAL INSTITUTE ALLERGY & INFECTIOUS DISEASES	Molecular mechanisms of HBV cccDNA Formation	MEDICINE	MICROBIOLOGY & IMMUNOLOGY	\$1,561,600

Guise, Theresa Ann	U.S. DEPARTMENT OF DEFENSE	Effect of low magnitude mechanical signals on breast cancer bone metastases.	MEDICINE	ENDOCRINOLOGY	\$857,226
Li, Lei	AMERICAN CANCER SOCIETY, INCORPORATED	Role of spore photoproduct in genome instability and epigenetics changes	SCIENCE	CHEMISTRY	\$792,000
Thompson, William R	U.S. DEPARTMENT OF DEFENSE	Effect of Low Magnitude Mechanical Signals on Breast Cancer Bone Metastases	HEALTH/REHABILITATION SCIENCES	HEALTH/REHABILITATION SCIENCES	\$702,772
Unroe, Kathleen T	CENTERS FOR MEDICARE AND MEDICAID SERVICES	OPTIMISTIC Phase 2 ? Clinical and Financial Demonstration Project	MEDICINE	GENERAL INTERNAL MEDICINE	\$598,857
Lamb, Bruce Timothy	U.S. DEPARTMENT OF DEFENSE	The Role of TREM2 in Traumatic Brain Injury Induced Pathology	MEDICINE MEDICINE	STARK NEUROSCIENCES RES INST	\$478,380
Haggstrom, David A	WALTHER CANCER FOUNDATION, INC.	Patient-Centered Informatics for Cancer Survivors	MEDICINE	GENERAL INTERNAL MEDICINE	\$449,991
Johns, Shelley A.	WALTHER CANCER FOUNDATION, INC.	Faculty Development in Supportive Oncology: Shelley Johns, PsyD, ABPP	MEDICINE	GENERAL INTERNAL MEDICINE	\$449,228
Litzelman, Debra K	INDIANA UNIVERSITY HEALTH	We Care Indiana: Improving Maternal and Infant Health to Reduce Infant Mortality	MEDICINE	GENERAL INTERNAL MEDICINE	\$421,475
Palakal, Mathew J.	INDIANA DEPARTMENT OF WORKFORCE DEVELOPMENT	Informatics: Diversity Workforce Initiative	INFORMATICS	INFORMATICS	\$405,495
Osili, Una O	BANK OF AMERICA	2016 High New Worth Study on Philanthropy	LILLY FAMILY SCHOOL OF PHILANTHROPY	PHILANTHROPY	\$364,943
Watson, Dennis P	INDIANA DIVISION OF MENTAL HEALTH AND ADDICTION	Partnership for Success	PUBLIC HEALTH	HEALTH POLICY & MANAGEMENT	\$235,000
Motaganahalli, Raghu L	PURDUE UNIVERSITY	Thermotherapy for intermittent claudication	MEDICINE	VASCULAR SURGERY	\$205,747
Palakal, Mathew J.	HERBERT SIMON FAMILY FOUNDATION	informatics Diversity Enhanced Workforce	INFORMATICS	INFORMATICS	\$200,000
Guo, Haitao	ALIOS BIOPHARMA	Development of novel cell based HBV CCCDNA reporter systems	MEDICINE	MICROBIOLOGY & IMMUNOLOGY	\$200,000
Decker, Brian Scott	PURDUE UNIVERSITY	Formulation, processing and performance interrelationships for amorphous solid dispersions	MEDICINE	NEPHROLOGY	\$183,074
Biondich, Paul G	REGENSTRIEF INSTITUTE, INC.	Open Health Information Exchange Public-Private Partnership	MEDICINE	PED-HEALTH SERVICES RESEARCH	\$172,110
Hurley, Joyce Harts	INDIANA STATE DEPARTMENT OF HEALTH	Sensitization of the Trigeminovascular System after mTBI: A Mechanism for Posttraumatic Migraine?	MEDICINE	BIOCHEMISTRY/MOLECULAR BIOLOGY	\$160,000
Meyer, Jason	INDIANA STATE DEPARTMENT OF HEALTH	Retinal Ganglion Cell Regeneration and Connectivity in the Damaged Optic Nerve	SCIENCE	BIOLOGY	\$160,000
Blesch, Armin	INDIANA STATE DEPARTMENT OF HEALTH	Patterned human glial progenitors stem cells in spinal cord injury	MEDICINE	NEUROLOGICAL SURGERY	\$160,000
Naugle, Kelly Marie	INDIANA STATE DEPARTMENT OF HEALTH	Role of Deficient Pain Modulatory Systems in Chronic Post-Traumatic Headache after Mild Traumatic Brain Injury	PHYSICAL EDUCATION AND TOURISM MANAGEMENT	PHYSICAL ED	\$150,914
Mosher, Catherine Esther	WALTHER CANCER FOUNDATION, INC.	Acceptance and Commitment Therapy for Symptom Interference in Metastatic Breast Cancer Patients	PUBLIC HEALTH	SOCIAL & BEHAVIORAL SCIENCES	\$149,506

Bigatti, Silvia M	WALTHER CANCER FOUNDATION, INC.	Identifying the Impact of Social-Environmental Challenges and Cumulative Life Stress on Treatment-Related Behaviors and Satisfaction with Care in African American Breast Cancer Patients	PUBLIC HEALTH	SOCIAL & BEHAVIORAL SCIENCES	\$149,506
Hickman, Susan E	WALTHER CANCER FOUNDATION, INC.	Advance Care Planning Systems Integration and Implementation	NURSING	NURSING	\$149,064
Bucher, Sherri L	JOHNSON & JOHNSON	Contextual analysis to identify opportunities and partners for scale-up of mHBB in Sub Saharan Africa	MEDICINE	PED-NEONATAL MEDICINE	\$125,000
Burow, Susan M	INDIANAPOLIS DEPARTMENT OF PUBLIC WORKS	Data Collection Services	PUBLIC & ENVIRONMENTAL AFFAIRS	SPEA	\$106,000
Menachemi, Nir	ESKENAZI HEALTH	Eskenazi Health Scholars Program	PUBLIC HEALTH	HEALTH POLICY & MANAGEMENT	\$100,000
Davis, Stephanie D	CYSTIC FIBROSIS FOUNDATION	Fourth Year Clinical Fellowship Award	MEDICINE	PED-PULM CRITICAL CARE/ALLERGY	\$100,000
Pasic, Amir	THE HEARST FOUNDATION, INC.	2015-09-09 Indiana University	LILLY FAMILY SCHOOL OF PHILANTHROPY	PHILANTHROPY	\$100,000
Lu, Tao	V FOUNDATION FOR CANCER RESEARCH	Facing up to the challenge, a novel approach to combat carboplatin resistance in ovarian cancer	MEDICINE	PHARMACOLOGY & TOXICOLOGY	\$100,000

## CURRENT EXTERNAL FUNDING OPPORTUNITIES

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

## NATIONAL ENDOWMENT for the HUMANITIES

**Collaborative Research Grants:** Collaborative Research Grants support interpretive humanities research undertaken by two or more collaborating scholars, for full-time or part-time activities for periods of one to three years. Support is available for various combinations of scholars, consultants, and research assistants; project-related travel; field work; applications of information technology; and technical support and services. All grantees are expected to disseminate the results of their work to scholarly and public audiences.

Eligible projects include the following: research that significantly adds knowledge and understanding of the humanities; conferences on topics of major humanities importance that will benefit scholarly research; and archaeological projects that include the interpretation and dissemination of results. *Deadline: Pre-Application (optional): October 15, 2016; Application: December 9, 2016.* <http://www.neh.gov/grants/guidelines/collaborative.html>

## NATIONAL INSTITUTES OF HEALTH

**Partnerships for the Development of Host-Targeted Therapeutics to Limit Antibacterial Resistance (RO1):** The purpose of this opportunity is to solicit research applications for milestone-driven projects focused on preclinical development of candidate therapeutics that target host-encoded functions required for infection, replication, virulence,

proliferation and/or pathogenesis of select bacterial pathogens for which drug resistance poses a significant public health concern.

This initiative will support preclinical development of a single candidate therapeutic or lead candidate series. For projects initiating with a lead series, down-selection to a single lead candidate must be accomplished within the first two years of the project. Of particular importance for novel host-targeted therapeutics is consideration of the most appropriate clinical and regulatory path to product registration and potential hurdles such as demonstration of pathogen susceptibility and therapeutic efficacy using non-standard in vitro assays and in vivo disease models, as well as potential toxicity issues. Proposed projects are not required to result in a "final" product, nor is it necessary to propose completion of the product development process up to the point of readiness for clinical trials or validation within the time frame of the project. *Deadlines: Letter of Intent: August 17, 2016; Application: September 17, 2016.*

<http://grants.nih.gov/grants/guide/rfa-files/RFA-AI-15-024.html>

**Staged Vaccine Development:** The Division of Acquired Immune Deficiency Syndrome (DAIDS) of the National Institute of Allergy and Infectious Diseases (NIAID), National Institutes of Health (NIH), is committed to the development of efficacious preventive vaccines against HIV-1 for worldwide use to end the AIDS epidemic. While industry, government, and academia have contributed considerable resources to this effort over the past 30 years, no fully effective vaccine has emerged. A wide assortment of candidate HIV-1 vaccines have reached Phase I clinical trials, but only three vaccine regimens have advanced to efficacy testing. One of these 3 trials, designated RV144, has shown modest efficacy in humans and this result coupled with promising results from nonhuman primate (NHP) studies has now stimulated the field to continue to test more advanced vaccine candidates in humans. To augment the development process for identifying and testing an improved HIV vaccine, NIAID will be using a staged development approach to allow the rapid advancement of promising HIV vaccine platforms.

NIAID's primary areas of interest are: 1) Recombinant HIV protein including HIV envelopes, envelope derivatives, Virus Like Particles, as well as formulations of HIV proteins with immune enhancers such as adjuvants and immune modulators; 2) POX virus (Fowlpox, NYVAC, ALVAC, Modified Vaccinia Ankara) vector-based vaccine candidates; 3) DNA vaccines, including DNA delivery device technologies and DNA expressed immune modulators; 4) Replication defective adenovirus vectors with low sero-prevalence and low T-cell reactivity in the relevant human populations; 5) Replication competent viral vectors (e.g., Paramyxoviruses, Morbilliviruses, Herpesviruses.); and 6) Adeno-associated virus vectors for the delivery of broadly neutralizing antibodies. *Deadline: August 20, 2016.*

[Federal Business Opportunities Staged Vaccine Development](#)

**Imaging Diagnostics of Dental Diseases and Conditions (R43/44):** The intent of this SBIR initiative is to accelerate the advanced development and clinical implementation of reliable, reproducible, highly specific and sensitive imaging diagnostic devices for dental caries, periodontal disease, cracked teeth, and pulp vitality. These new devices must demonstrate superior specificity and sensitivity compared with current diagnostic methods, such as the visual/tactile/radiographic examination for detection of caries, while not increasing health risks for patients. Approaches that could be explored include, but are not limited to: optical coherence tomography (OCT) with or without Raman spectroscopy, MRI image analysis, electrical conductivity measurement (ECM), quantitative laser fluorescence (QLF), alternating current impedance spectroscopy, multi-photon imaging, infrared thermography, infrared fluorescence (IR), ultrasound, and terahertz imaging. The development of novel modalities is also encouraged. *Deadline: September 5, 2016.* <http://grants.nih.gov/grants/guide/pa-files/PA-15-335.html>

## NATIONAL SCIENCE FOUNDATION

**Energy-Efficient Computing: from Devices to Architectures:** There is a consensus among many industries that computing infrastructure performance improvements across the board are now severely limited by the amount of energy it takes to manipulate, store, and transport data. The limits and tradeoffs for this crisis vary across platforms, but they have all reached a point at which evolutionary approaches are inadequate.

Truly disruptive breakthroughs are required; revolutionary new approaches are needed at each level. Due to the complexity of the challenges, simultaneous co-optimization across all levels is essential for the creation of new, sustainable computing platforms. Therefore, a comprehensive and collaborative approach must be undertaken to maximize the potential for successfully identifying and implementing revolutionary solutions to break through the bottleneck of energy-constrained computational performance.

The NSF and the Semiconductor Research Corporation (SRC) recognize this need, and agree to embark on a new collaborative research program to support compelling research that is of paramount importance to industry, academia and society at large. This partnership will specifically support new research to minimize the energy impacts of processing, storing, and moving data within future computing systems, and will be synergistic with other research activities that address other aspects of this overarching energy-constrained computing performance challenge. *Deadline: March 28, 2017.*

[http://www.nsf.gov/publications/pub\\_summ.jsp?ods\\_key=nsf16526](http://www.nsf.gov/publications/pub_summ.jsp?ods_key=nsf16526)

**Data Infrastructure Building Blocks (DIBBS):** This solicitation includes two classes of science data pilot awards: 1. Early Implementations are large "at scale" evaluations, building upon cyberinfrastructure capabilities of existing research communities or recognized community data collections, and extending those data-focused cyberinfrastructure capabilities to additional research communities and domains with community engagement.; and 2. Pilot Demonstrations address advanced cyberinfrastructure challenges across emerging research communities, building upon community data collections and disciplinary research interests, to address specific challenges in science and engineering research.

Prospective PIs should be aware that DIBBs is a multi-directorate activity, and are encouraged to contact a Cognizant Program Officer in the organization(s) closest to the major disciplinary impact of the proposed work to ascertain whether the scientific focus and budget of the proposed work are responsive to this solicitation. It is recommended that a prospective PI *Deadline: April 4, 2017* [http://www.nsf.gov/publications/pub\\_summ.jsp?ods\\_key=nsf16530](http://www.nsf.gov/publications/pub_summ.jsp?ods_key=nsf16530)

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

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

enterprise. *Deadline: November 3, 2016.*

[http://www.nsf.gov/publications/pub\\_summ.jsp?ods\\_key=nsf15585](http://www.nsf.gov/publications/pub_summ.jsp?ods_key=nsf15585)

## U.S DEPT. of ENERGY (DOE)

**Systems Biology Enabled Research on the Roles of Microbial Communities in Carbon Cycle Processes:** This opportunity seeks applications in two areas: 1) systems biology studies on regulatory and metabolic networks of microbes, microbial consortia, and microbe-plant interactions involved in biogeochemical cycling of carbon; and 2) development and application of -omics approaches to investigate microbial community functional processes involved in carbon cycling in terrestrial ecosystems. *Deadline: March 23, 2017.*

<http://www.grants.gov/web/grants/view-opportunity.html?oppld=280206>

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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 two-page summary of their research project and a CV or bio-sketch 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 offers assistance in developing the two- page summaries. For more information, contact Steven Chin [atschin@iupui.edu](mailto:atschin@iupui.edu).*

## IDENTIFYING FUNDING OPPORTUNITIES

On-line search tools are available to IUPUI investigators who are interested in identifying funding opportunities in their areas of interest.

**Community of Science (COS):** COS is a primary on-line search tool for identifying funding opportunities. To take advantage of this tool, register at <http://www.cos.com/login/join.shtml>. Once you have completed the short registration process, you can personalize your search by selecting the option entitled "launch your workbench". You can access federal, local, corporate, foundation, nonprofit and other funding opportunities using key terms and save the results of up to 20 searches and have them delivered to you weekly via email.

**National Institutes of Health (NIH) "NIH Guide":** To take advantage of this search tool, register at <http://grants.nih.gov/grants/guide/listserv.htm>. It allows you to receive discipline specific funding opportunities that are delivered to you weekly via email.

**National Science Foundation (NSF) "MyNSF":** To take advantage of this search tool, register at [http://service.govdelivery.com/service/multi\\_subscribe.html?code=USNSF&custom\\_id=823](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](mailto: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](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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