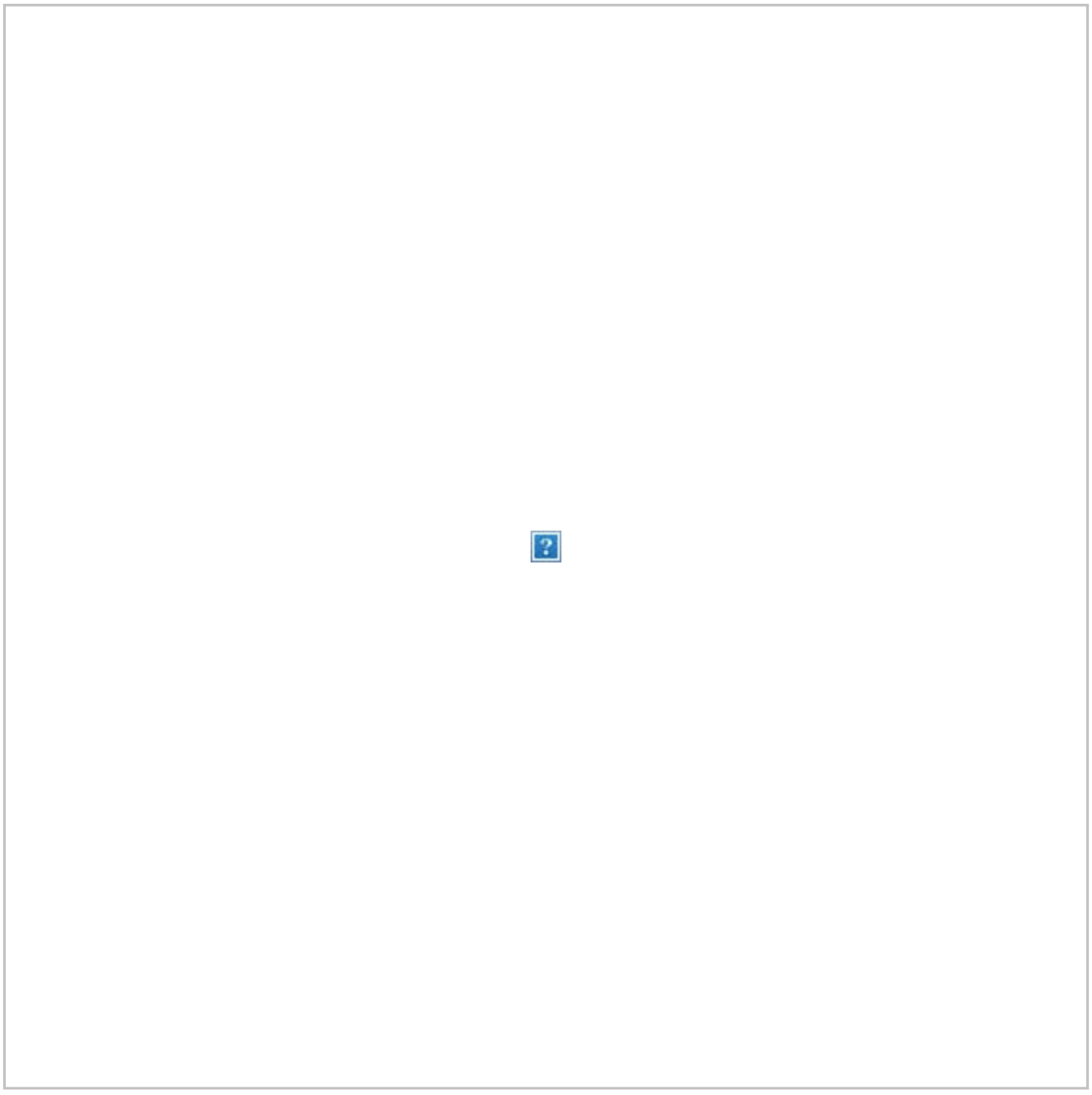
From: Integrative Neuroscience Center
To: Smith, Melinda M
Subject: Neuroscience Newsletter
Date: Friday, August 26, 2016 2:45:36 PM



Message from the Director:

While we are starting our new year, if you happen to spot any of our new faculty who have joined us on campus, be sure to say hello. For the neuroscience institute, we are happy to welcome:

-**Perry Paschou** who looks at human genetic variation around the globe and studies neuropsychiatric disorders of childhood (Biological Sciences)

-**Hari Bharadwaj** who examines hearing loss and how we process sounds and analyze acoustic scenes (Speech, Language, and Hearing Science, & Biomedical Engineering)

-**Mark Sayles** research interests include systems neuroscience, brainstem auditory neurophysiology,

binaural hearing and sensorineural hearing loss (Biomedical Engineering & Speech, Language and Hearing Sciences)

-**Estuardo Robles** who works on retinal circuits in zebrafish (Biological Sciences)

This is the final callout for a 2-day training course (lectures and hands-on training) on the handling and differentiation of **human iPSCs** (induced pluripotent stem cells). The training will be conducted by a company representative and will be run out of the 3D3C tissue culture core facility in Discovery Park, most likely within the next month. Our hope is to have the final differentiation component of the training focused on neural induction. If you or one of your students would be interested in this type of training, please let us know as soon as possible. We will sponsor attendance by PIIN members, with the limit of one individual per lab. Labs outside of PIIN should contact us if interested. Only one seat remains.

As we look forward, we are excited to welcome **Dr. Bruce Lamb of the Stark Neuroscience Institute** in Indianapolis for a visit and seminar on Wednesday, August 31 (notice below). We hope to build stronger bridges between our Institutes, and seek your help in welcoming him with a good turnout to the seminar, and individual meetings with interested faculty.

Below you will find information about the **Gill Symposium,** with an emphasis on **glial biology and neuroimmunology** in development and disease, to be held at IU Bloomington, September 12. I will be attending the symposium on behalf of PIIN and would happily welcome company for the drive if you plan to attend.

Finally, I particularly wish to draw attention to the NIH **Autism Centers of Excellence** program seeking Center proposals, with a November 17 submission deadline.

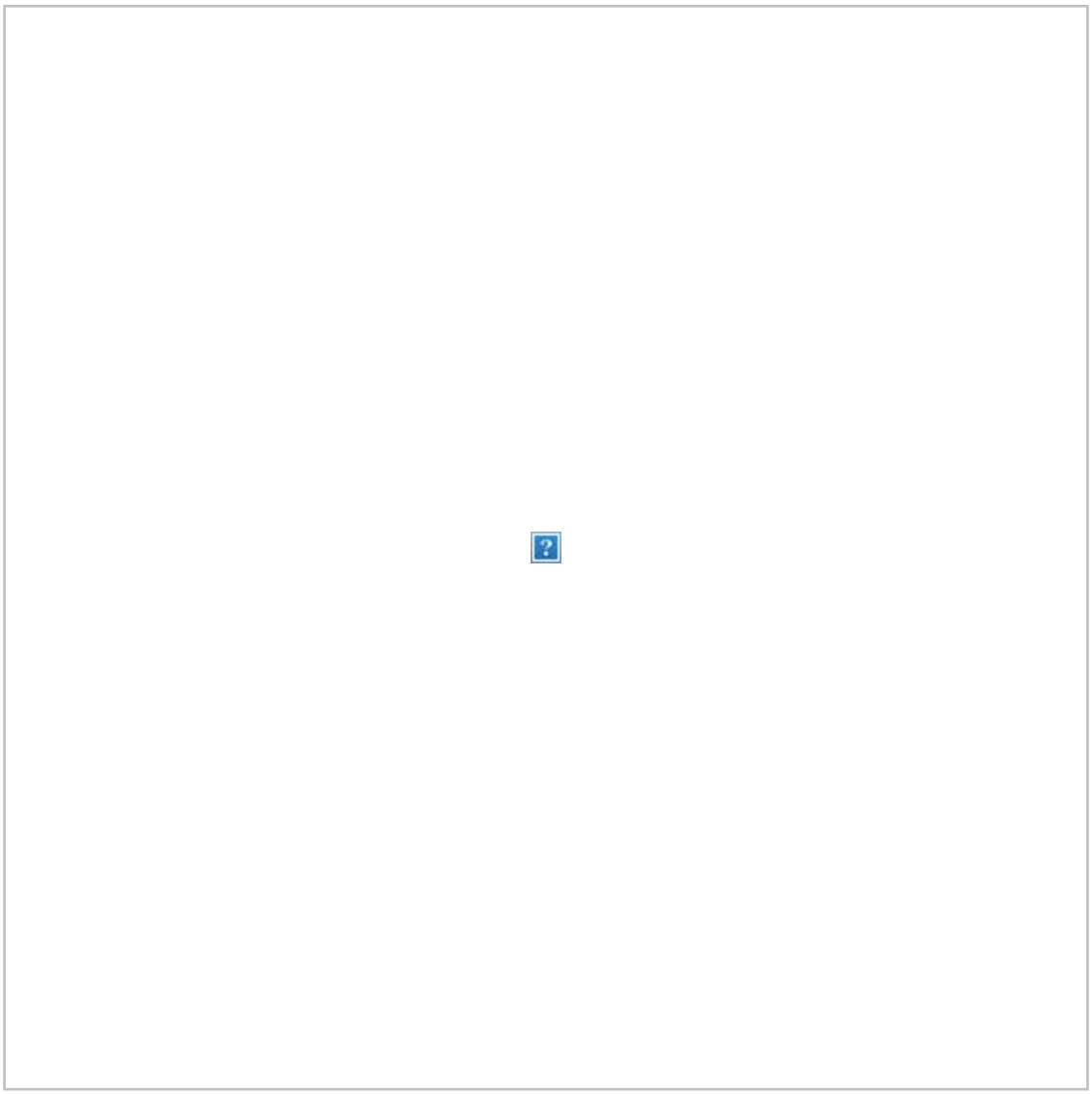
Donna Fekete, *Inaugural Director*

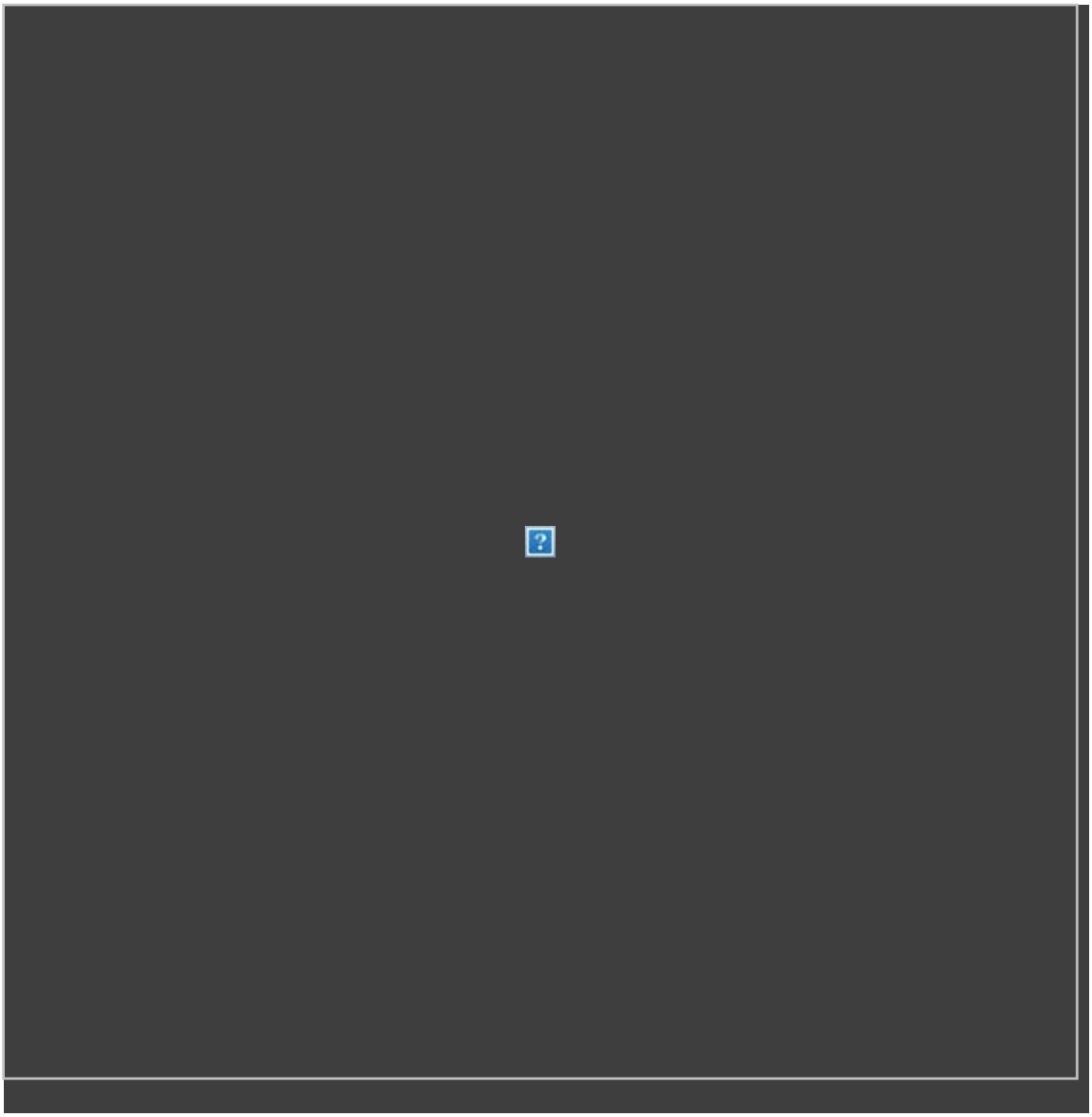
On Wednesday, August 31st, Dr. Bruce Lamb, Director of the Stark Neuroscience Institute will join us for a special seminar:

The Role of Innate Immunity in Neurodegeneration

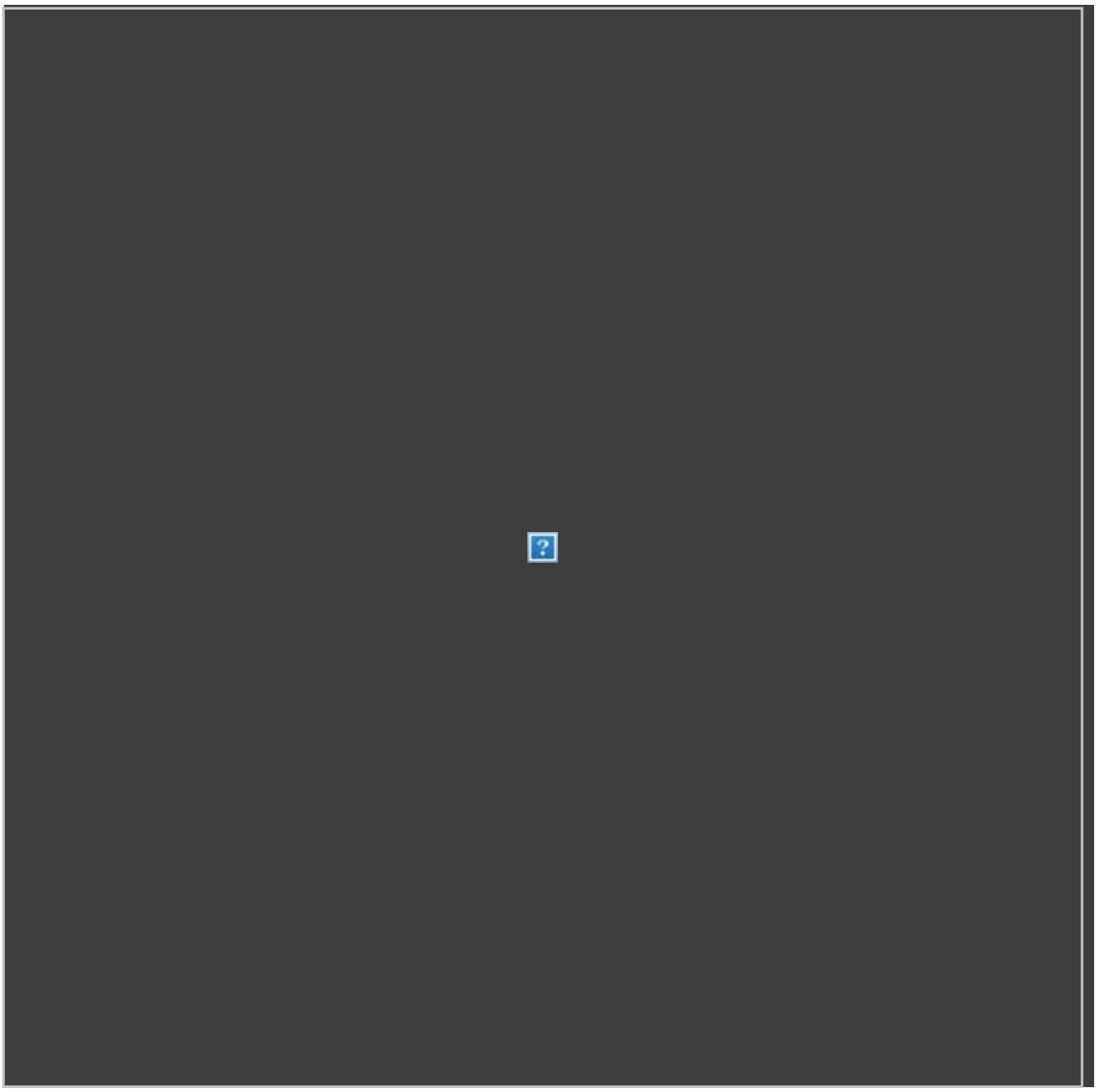
MJIS 1001 @ 9:30AM, August 31st

Dr. Lamb's laboratory works on the basic science of Alzheimer's disease, with a focus on: 1) genetic modifiers identified from both mouse and human studies, 2) microglia and neuronal-microglial communication in the development and progression of AD pathologies; and 3) traumatic brain injury as an environmental modifier for the development of AD pathologies. In addition, Dr. Lamb is actively involved in advocacy for increased research funding for the disease.





Time Horizons and Optimal Aging



Indiana's new chief innovation officer to speak on state's $1 billion investment in entrepreneurship, innovation

Ian Steff, the newly appointed executive vice president and chief innovation officer of the Indiana Economic Development Corporation, will provide an informational session on the state's $1 billion initiative to support innovation and entrepreneurial opportunities in Indiana.

The plan, spanning over the next 10 years, was announced by Gov. Mike Pence in July with the goal of incentivizing ingenuity and development statewide.

The informational session, which is open to faculty and staff, will be held 2-3 p.m. Aug. 31 at Stewart Center, Fowler Hall.

As executive vice president and chief innovative officer, Steff's first priority will be to inform innovators and entrepreneurs locally, nationally and globally that Indiana is committed to providing the resources necessary for sustaining current and future growth. One facet of the new initiative will support Indiana's universities by fostering research opportunities and supporting small businesses.

Steff previously served as the senior advisor for nanotechnology and advanced manufacturing for IEDC. He is currently serving on the Purdue's Engineering Advisory Council and on the Advisory Council for the vice chancellor for research at Indiana University-Purdue University Indianapolis.

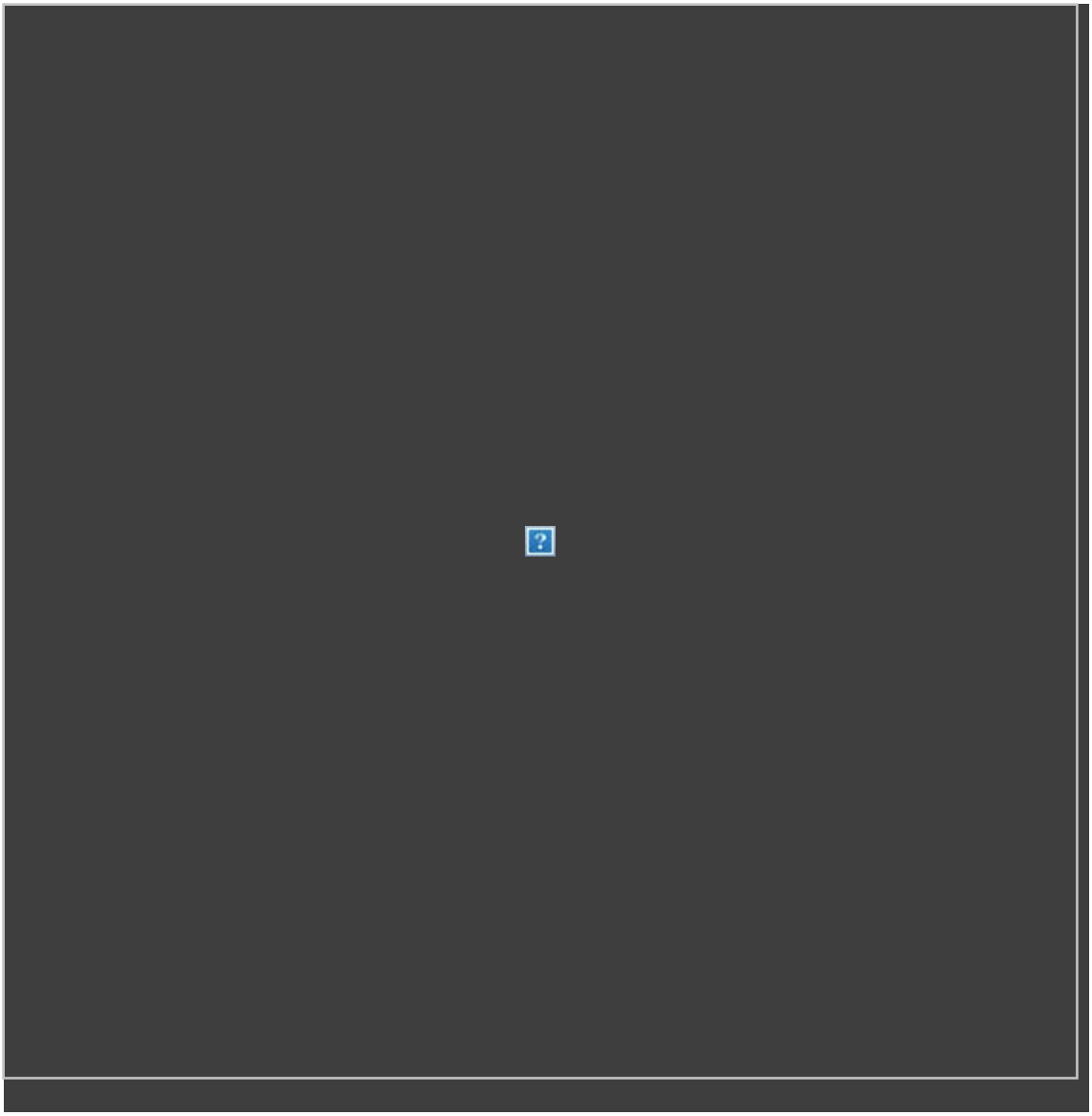
OTC Opportunities

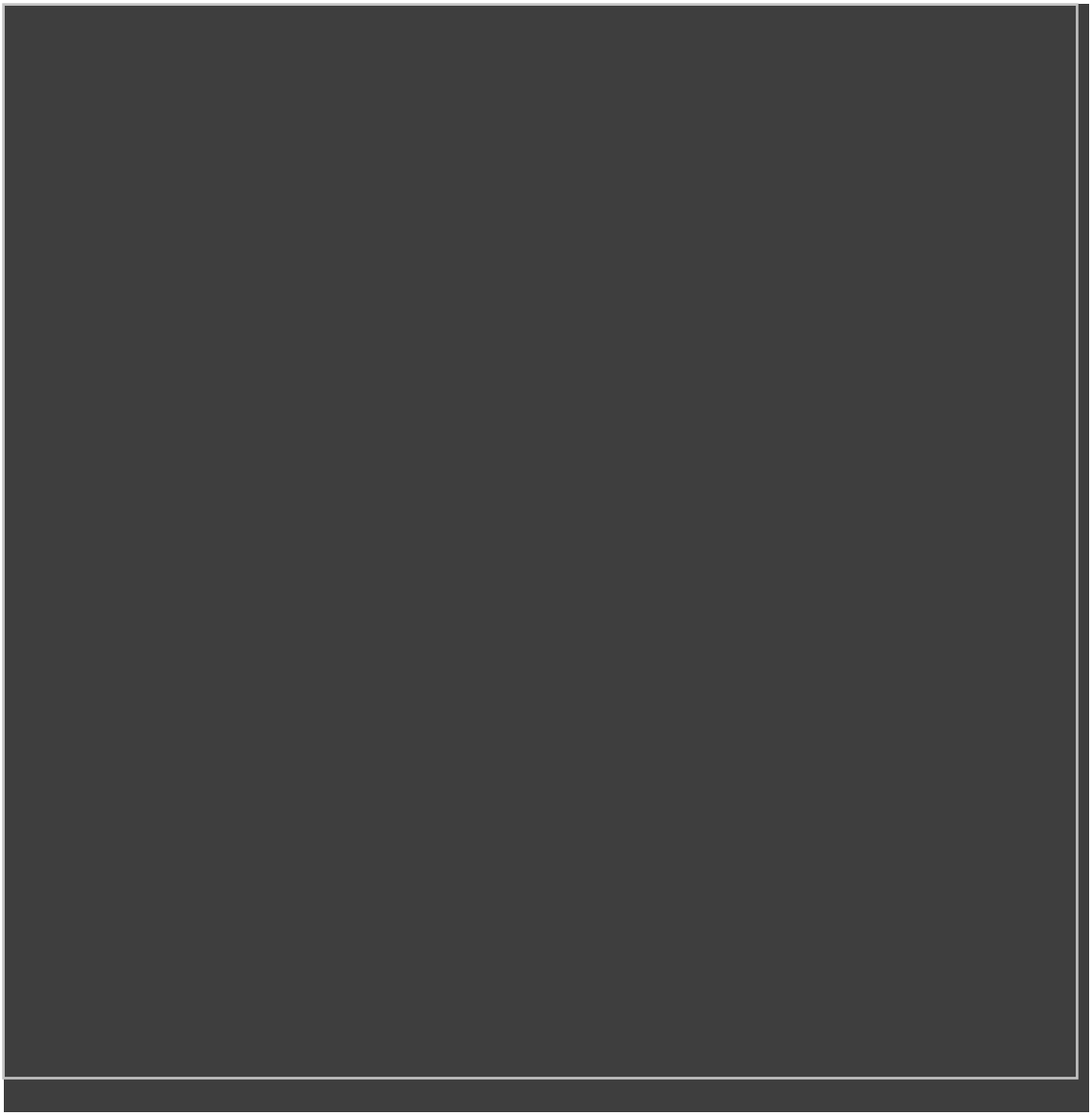
Trask Innovation Fund:

The Fall Trask deadline will be September 23. If you are new to Trask: “The Fund objective is to support short-term projects that will enhance commercial value of Purdue University intellectual property assets. Financial support is designed to provide an individual technology portfolio up to $50,000 for a period of six months.” Please let me know if you have any questions.

Central Collaboratory 2016 (https://ctsi.mcw.edu/event/central-collaboratory-2016/**)**

This is an “elevator pitch” event to “promote licensing, collaboration, or start-up team formation” in the fields of: therapeutics, diagnostics, devices, imaging, and manufacturing/engineering. If you are interested, I would be glad to participate as a co-presenter or a sounding board for preparing your pitch. The deadline for submissions is September 5, and the competition is October 6 in Milwaukee. Industry business development representatives will be in attendance. Please coordinate with me if you are considering applying.





Funding Opportunities:

Burroughs-Wellcome Career Awards at the Scientific Interface **BWF's Career Awards at the Scientific Interface (CASI) provide $500,000 over five years to bridge advanced postdoctoral training and the first three years of faculty service. These awards are open to U.S. and Canadian citizens or permanent residents as well as to U.S. temporary residents. Candidates must hold a Ph.D. degree in one of the fields of mathematics, physics, chemistry, computer science, statistics, or engineering and must have completed at least 12 months but not more than 48 months of postdoctoral research by the date of the full invited application deadline.** ***Sponsor Deadlines:*** **Sept 6 – Pre-proposal; January 9 – Invited full proposals.**

NIH Biophysical and Biomechanical Aspects of Embryonic Development **This FOA encourages applications that propose to advance our knowledge in the area of the physics and mechanics of embryonic development.**

- *RO1* **Deadline: September 19**
- *R21* **Deadline: September 19**

NIH Impact of Aging in Human Cell Models of Alzheimer's Disease (R01) **The goal of this FOA is to establish the impact of aging on the expression and/or modulation of AD pathological processes and to assess age-related AD genotype-phenotype relationships in human cell models. Research incorporating different brain cell types to promote neural circuit maturation and complexity in such cell models is expected to better recapitulate and give greater insight into AD pathological processes. Deadline: September 28.**

NIH Development and Application of PET and SPECT Imaging Ligands as Biomarkers for Drug Discovery and for Pathophysiological Studies of CNS Disorders (R01) **This FOA invites research grant applications from organizations/institutions that propose the development of novel radioligands for positron emission tomography (PET) or single photon emission computed tomography (SPECT) imaging in human brain, and that incorporate pilot or clinical feasibility evaluation in pre-clinical studies, model development, or clinical studies. Deadline: October 5.**

NIH Novel Approaches to Diagnosing Alzheimer's Disease and Predicting Progression (R01) The goal of this FOA is to identify new approaches to diagnosing AD and predicting outcome. These novel biomarkers should provide new biological information about patients with dementia and/or address the shortcomings of currently-validated biomarkers. Deadline: October 5

NSF Dear Colleague Letter: Change Makers EHR invites innovative research and development proposals to advance STEM learning, while exploring solutions to multidisciplinary or transdisciplinary global challenges in either formal or informal settings for learners of all ages and prior educational experience, including learners traditionally under-represented in STEM. Research and development efforts should contribute to both the STEM and STEM education knowledge bases. Deadline: Varies by directorate

NIH Social Epigenomics Research Focused on Minority Health and Health Disparities This FOA supports and accelerates human epigenomic investigations focused on identifying and characterizing the mechanisms by which social experiences at various stages in life, both positive and negative, affect gene function and thereby influence health trajectories or modify disease risk in racial/ethnic minority and health disparity populations.

- *RO1* Deadline: November 15
- *R21* Deadline: November 15

NIH Autism Centers of Excellence (ACE) This program is intended to build on the research progress and momentum of the past decade by funding research on innovative interventions and services for individuals with ASD across the lifespan, as well as cutting-edge research on the neurobiological basis and phenotypic characteristics of ASD that might lead to the identification of novel intervention strategies. A PD/PI may submit only one application, either an ACE Center or an ACE Network. This does not exclude multiple applications from a single institution, provided each application is submitted by a different PD/PI.

Networks (R01) Each ACE Network will consist of a multi-site project focusing on a specific topic of research for R01 support through this FOA. Each ACE Network will submit one R01 application that includes sub-awards to the collaborating sites. Deadline: November 17

Centers (P50) The P50 mechanism allows for integrative, multi-disciplinary, coordinated programs of research that demonstrate cohesion and synergy across research projects and cores. Deadline: November 17

DOD-ARMY Funding Opportunities

Parkinson's Focused Idea Award Deadlines: November 9 – Pre-application; November 30 – Application

Parkinson's Impact Award Deadlines: November 9 – Pre-application; November 30 – Application

Epilepsy Idea Development Award Deadlines: August 17 – Pre-application; November 9 - Application

Peer Reviewed Alzheimer's Convergence Science Research Award Deadlines: August 17 – Pre-application; November 9 – Application

NIH-NIBIB Trailblazer Award for New and Early Stage Investigators (R21) This award is an opportunity for New and Early Stage Investigators to pursue research programs of high interest to the NIBIB that integrate engineering and the physical sciences with the life and behavioral sciences. This FOA invites applications from researchers who are at the early stage of their independent careers or those who have not had substantial prior NIH funding. A Trailblazer project may be exploratory, developmental, proof of concept, or high risk-high impact, and may be technology design-directed, discovery-driven, or hypothesis-driven. Deadline: October 16

Limited Submissions:

Preproposals and rankings to the EVPRP should be e-mailed to EVPRPlimited@purdue.edu. Purdue's open limited submission competitions, limited submission policy, and templates for preproposals may be found at http://www.purdue.edu/research/funding-and-grant-writing/limited-submissions.php. For any case in which the number of preproposals received is no more than the number of proposals allowed by the sponsor, the EVPRP will notify the PI(s) that an internal competition will be unnecessary.

NIH BRAIN Initiative: Foundations of Non-Invasive Functional Human Brain Imaging and Recording – Bridging Scales and Modalities (R01) This FOA aims to support transformative discoveries that will lead to breakthroughs in understanding human brain function. This FOA specifically seeks to support efforts that will revolutionize our understanding of the biological activity underlying, and bioinformatic content of, data collected using contemporary non-invasive functional brain imaging techniques. Deadline: November 23

NIH Big Data to Knowledge (BD2K) Community-Based Data and Metadata Standards Efforts (R24) This FOA will provide time-limited, catalytic support for activities necessary to develop or extend/refine data and metadata standards and/or related tools in areas relevant to the NIH basic, translational, and clinical research mission. Projects can support activities at any point in the data standards lifecycle and should build on existing partnerships, infrastructure, and resources whenever possible. Projects must demonstrate a compelling science community interest and need for standards efforts in the specific domain(s) of interest, as well as a plan for meaningful engagement of the end-user communities and relevant stakeholders in the process. Deadline: October 19

NIH Engineering Next-Generation Human Nervous System Microphysiological Systems These FOAs encourage research grant applications directed toward developing next-generation human cell-derived microphysiological systems with improved fidelity to complex human brain, spinal, peripheral nervous system and/or sensory end organ circuit physiology in vivo, which will ultimately facilitate analysis of higher order functional deficits relevant to complex nervous system disorders.

- *R01* Deadline: 2/5/17
- *R21* Deadline: 2/16/17

NIH-NICHD Laboratory of Developmental Biology (R24) This FOA encourages grant applications aimed at the collection, identification, staging, and distribution of conceptal tissues for use in studies to understand the underlying developmental biology of normal and abnormal human development as well as human pathologies. The objective of this FOA is to provide support for established resources that serve the research community. Deadline: October 27

NIH-NLM Express Research Grants in Biomedical Informatics (R01) The National Library of Medicine (NLM) offers support for innovative research in biomedical informatics and data science. The scope of NLM's interest in the research domain of informatics is broad and interdisciplinary, developing methods and approaches in biomedical computing, data science and related information fields for application domains of health and biomedicine, including health care delivery, basic biomedical research, clinical and translational research, precision medicine, public health, biosurveillance, health information management in disasters, and similar areas. NLM defines biomedical informatics as the science of optimal representation, organization, management, integration and presentation of information relevant to human health and biology, for purposes of learning, sharing and use. Deadline: October 5

NIH Secondary Analyses of Alcohol and Chronic Disease (R03) This FOA encourages applications that

propose to conduct secondary analyses of alcohol as it relates to chronic disease etiology and epidemiology. The goal of this program is to facilitate innovative yet cost-effective research utilizing previously collected data. Deadline: October 16

Limited Submissions:

Limited Submission: *NIH BD2K Research Education Curriculum Development: Data Science Overview for Biomedical Scientists (R25)* This FOA will support creative educational activities with a primary focus on Curriculum or Methods Development in Big Data Science to augment current institutional curricula for the training of predoctoral level biomedical scientists and provide concentrated instruction in the tools, approaches and quantitative analysis concepts in data science. To facilitate the integration of data science into biomedical curricula nationally, this FOA seeks to support a cohort of institutions that will work collaboratively and collectively to produce curricular materials that are findable, accessible, interoperable, and reusable. For this opportunity, Purdue can submit only ***one*** application.

Internal Deadline: Contact EVPRPlimited@purdue.edu by August 29th.

Sponsor Deadline: December 7

Limited Submission: *HHS-HRSA Family Leadership in Language and Learning (FL3)* The purpose of this program is to support the development of statewide newborn and infant hearing screening, evaluation, diagnosis, and intervention programs and systems by promoting the inclusion of families, parents, and caregivers of deaf or hard of hearing infants/children identified through the Universal Newborn Hearing Screening Program as leaders in the statewide Early Hearing Detection and Intervention system and thereby to support such children's language, literacy, and social-emotional development. For this opportunity, Purdue can submit only ***one*** application.

Internal Deadline: Contact EVPRPlimited@purdue.edu by August 29th.

Sponsor Deadline: October 14

Selected Funding Opportunities:

NIH-NHLBI Program Project Applications (PO1) The proposed programs may address scientific areas relevant to the NHLBI mission including the biology and diseases of the heart, blood vessels, lung, and blood; blood resources; and sleep disorders. Each application submitted in response to this FOA must include at least three related research projects that share a common central theme, focus, and/or overall objective. Deadline: September 25

NIH BRAIN Initiative: Development and Validation of Novel Tools to Analyze Cell-Specific and Circuit-Specific Processes in the Brain (R01) The purpose of this BRAIN Initiative FOA is to encourage applications that will develop and validate novel tools to facilitate the detailed analysis of complex circuits and provide insights into cellular interactions that underlie brain function. The new tools and technologies should inform and/or exploit cell-type and/or circuit-level specificity. Plans for validating the utility of the tool/technology will be an essential feature of a successful application. The development of new genetic and non-genetic tools for delivering genes, proteins and chemicals to cells of interest or approaches that are expected to target specific cell types and/or circuits in the nervous system with greater precision and sensitivity than currently established methods are encouraged. Deadline: November 2

NIH BRAIN Initiative: Development and Validation of Novel Tools to Analyze Cell-Specific and Circuit-Specific Processes in the Brain (R01) The purpose of this initiative is to encourage applications that will develop and validate novel tools to facilitate the detailed analysis of complex circuits and provide insights into cellular interactions that underlie brain function. The new tools and technologies should inform and/or exploit cell-type and/or circuit-level specificity. Plans for validating the utility of the tool/technology will be an essential feature of a successful application. Deadline: November 2.

NIH BRAIN Initiative: Non-Invasive Neuromodulation – New Tools and Techniques for Spatiotemporal Precision (RO1) This FOA solicits grant applications in two related but distinct areas. The first area is in the development and testing of novel tools and methods of neuromodulation that go beyond the existing variations on magnetic or electrical stimulation. These novel approaches/tools must be clearly beyond incremental advances over existing approaches. The second area is the significant improvement of existing electrical and magnetic stimulation methods. This second area of this FOA is aimed at improving existing devices rather than elucidating their mechanism of action. Deadline: November 23

NIH BRAIN Initiative: Non-Invasive Neuromodulation – Mechanisms and Dose/Response Relationships for Targeted CNS Effects (RO1) The focus of this FOA is to better understand how existing non-invasive neuromodulation devices affect brain circuity. This information should shed light on dose/response relationships that could be used for neuroscience applications and clinical interventions. Deadline: November 23

NIH NLM Express Research Grants in Biomedical Informatics (RO1) The scope of NLM's interest in the research domain of informatics is broad and interdisciplinary, developing methods and approaches in biomedical computing, data science and related information fields for application domains of health and biomedicine, including health care delivery, basic biomedical research, clinical and translational research, precision medicine, public health, biosurveillance, health information management in disasters, and similar areas. NLM defines biomedical informatics as the science of optimal representation, organization,

management, integration and presentation of information relevant to human health and biology, for purposes of learning, sharing and use. Deadline: October 5

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