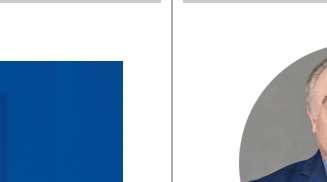




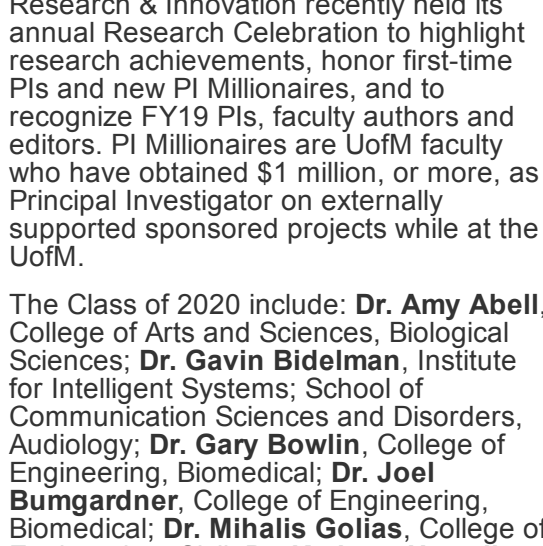
March 2020



RESEARCH



INNOVATION



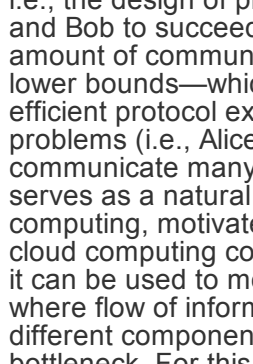
This Year's Event Showcased Record Number of Millionaire PIs
UofM also welcomed 36 First-Time PIs

The University of Memphis Division of Research & Innovation recently held its annual Research Celebration to highlight research achievements, honor first-time PIs and new PI Millionaires, and to recognize FY19 PIs, faculty authors and editors. PI Millionaires are UofM faculty who have obtained \$1 million, or more, as Principal Investigator on externally supported sponsored projects while at the UofM.

The Class of 2020 include: **Dr. Amy Abell**, College of Arts and Sciences, Biological Sciences; **Dr. Gavin Bidelman**, Institute for Intelligent Systems; School of Communication Sciences and Disorders, Audiology; **Dr. Gary Bowlin**, College of Engineering, Biomedical; **Dr. Joel Bumgardner**, College of Engineering, Biomedical; **Dr. Mihalios Gollas**, College of Engineering, Civil; **Dr. Kathryn Howell**, College of Arts and Sciences; **Dr. Jeffrey Marchetta**, College of Engineering, Mechanical; **Dr. Philip Pavlik**, Jr., Institute for Intelligent Systems; **Dr. Wesley James**, College of Arts and Sciences, Sociology; **Dr. Jeffrey Marchetta**, College of Engineering, Mechanical; **Dr. Philip Pavlik**, Jr., Institute for Intelligent Systems; **Dr. Wesley James**, College of Arts and Sciences, Psychology.

First-time PIs signify the attainment of a position of research leadership on an externally supported sponsored project.

Read more on all PIs and honored recipients [here](#).



Dr. Tom Watson
Receives
Prestigious NSF Early Career Award
Communication

complexity

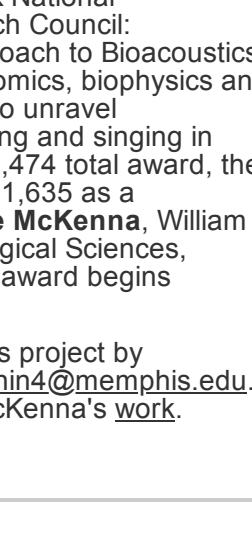
The NSF Early Career is among the most prestigious research awards available to junior faculty and provides a jump start to long and productive research careers. **Dr. Thomas Watson**, assistant professor of Computer Science, was awarded for his project "Structural Communication Complexity," a project that will develop deep technical tools to make progress on several longstanding problems and central issues in communication complexity and its various application areas. The unifying theme of this project is the importation of insights and techniques from structural complexity, which is the area of theoretical computer science devoted to classifying problems according to their inherent computational difficulty.

What is Communication Complexity?

The field of communication complexity is about situations where two parties, call them Alice and Bob, each hold a separate piece of data, and they wish to jointly collaboratively solve some computational problem that depends on both their inputs. How much will they need to communicate back-and-forth to achieve their goal? The field encompasses both upper bounds (i.e., the design of protocols that allow Alice and Bob to succeed using only a small amount of communication—as well as lower bounds—which show that no such efficient protocol exists for certain problems (i.e., Alice and Bob will need to communicate many bits to succeed). This serves as a natural model of distributed computing, motivated by big data and cloud computing concerns. More generally, it can be used to model any situation where flow of information between different components of a system forms a bottleneck. For this reason, communication complexity has applications to many other areas of computer science.

For more information on his research, contact Watson at thomas.watson@memphis.edu.

Studying the emotional toll of hearing loss and restoration Industry consortium collaboration



Dr. Jani Johnson, assistant professor in the School of Communication Sciences and Disorders, has been funded by the Hearing Industry Research Consortium to pioneer work in the emotional toll of hearing loss and restoration. About 30% of older adults have a hearing loss. As hearing loss worsens, psychological, social and emotional functioning are affected. Even mild to moderate hearing problems, typical of age-related hearing loss, can limit listeners' abilities to recognize emotional content in speech and respond to sounds that other listeners find emotionally stimulating. Hearing aids are often the first treatment of choice, but little research has been done that examines the emotional processing of patients with hearing aids. Through her work, we will better understand how hearing aids can impact the lives of patients and will help guide the development of hearing instrument technologies and treatment interventions to target emotion-based outcomes, and ultimately increase consumers' hearing-related quality of life.

For more information on Johnson's research, visit her [webpage](#).

Post Doc in Biological Sciences Secures External Funding Awarded NSF funding for research project

Dr. Seungwan Shin, post-doctoral fellow in Biology, has been awarded a National Science Foundation grant for the research project, NSF-DEB-UK National Environment Research Council: Multidisciplinary Approach to Bioacoustics: Integrating phylogenomics, biophysics and functional genomics to unravel the evolution of hearing and singing in katydids. Of the \$884,474 total award, the UofM will receive \$271,635 as a subaward. **Dr. Duane McKenna**, William Hill Professor in Biological Sciences, serves as co-PI. The award begins January 2021.

Learn more about this project by contacting Shin at sshin4@memphis.edu. Learn more about McKenna's [work](#).

Clinical Psychology Doctoral Student awarded NIH grant Supports research for two years

Alton "Jay" Withers, a first-year doctoral student in clinical psychology, has been awarded a NIH Diversity Fellowship award to support his research on behavioral economics and the influence risk for alcohol misuse among African American emerging adults in the Memphis community. The grant will provide Withers with \$70,000 over two years to support the project and his advanced training in addiction research. His mentors will include three faculty members from the UofM (Drs. James Murphy, Kris Berlin, and Rosie Bingham Davis), and Dr. James Mackillop, who is the Peter Boris Chair in Addictions Research from McMaster University in Canada.

For more information on this research, contact Withers at alton.withers@memphis.edu.

Wanted: Faculty Leader to Pilot FedEx Institute of Technology VR, AR and Immersive Data Visualization Effort

Emerging technologies are creating new opportunities for immersive engagement of audiences of all types. The FedEx Institute of Technology is looking for faculty members to help organize and lead research and development efforts in this space, in line with the goal of achieving and sustaining Carnegie R1 status.

Interested faculty should submit a one page outline of ideas for creating virtual reality, augmented reality and immersive data visualization on campus, with a special emphasis on growing awards from federal agencies and foundations.

Submit your proposal, including lab requirements, to fedex@memphis.edu by March 20, 5 P.M.

Research Awards February 2020

Dr. Thomas Watson, assistant professor in the Department of Computer Science, was awarded \$427,398 from the National Science Foundation for his project "CAREER: Structural Communication Complexity."

Dr. Jani Johnson, assistant professor in the School of Communication Sciences and Disorders, was awarded \$125,000 from the Hearing Industry Research Consortium for her project "Does wearing hearing aids impact the affective state of older adults with hearing loss in daily listening?"

Dr. Ali Fatemi, professor, department chair and director of the Fatigue and Fracture Research Laboratory in the Department of Mechanical Engineering, was awarded \$70,000 from Materials Resources LLC for his project "Fatigue Prediction for Additive Manufactured (AM) Metallic Components."

Dr. Ebrahim Asadi, assistant professor in the Department of Mechanical Engineering, was awarded \$70,000 from Materials Resources LLC for his project "Modeling of Surface Roughness in LPBF Ti6AlV4."

Dr. Latrice Pichon, associate professor in the Department of Social and Behavioral Sciences, was awarded \$29,309 from Vanderbilt University for her project "Tennessee Center for AIDS Research: A Step Towards Ending the HIV Epidemic in Memphis/Shelby County, Tennessee: Improving Linkage to Care with a Test and Treat Program."

Dr. Justin Lawhead, Dean of Students in the Department of Student Accountability Outreach, was awarded \$9,649 from the Tennessee Department of Human Services for his project "SNAP Outreach."

Dr. Jessica Jennings, assistant professor in the Department of Biomedical Engineering, was awarded \$8,939 from Monogram Orthopedics for her project "Cytocompatibility and Anti-biofilm properties of Additive manufactured Silver/chitosan coatings."

Dr. Courtnee Melton-Fant, assistant professor in the Division of Health Systems Management and Policy, was awarded \$6,000 from the National League of Cities for her project "Does state-level preemption of inclusionary zoning policies contribute to racial and socioeconomic health inequalities among adults?"

* Data is reported on the 18th of each month. Any awards finalized after the 18th of each month will be reported in the following month's report.

RESEARCH CLUSTERS



ADDITIVE MANUFACTURING

AGRICULTURE & FOOD TECHNOLOGIES

BIOLOGISTICS

CAST

DATA SCIENCE

DRONES

SMART CITIES

QUICK GUIDE TO RESEARCH AND SPONSORED PROGRAMS

Reviewing, Submitting and Accepting Funded Research A resource for faculty and staff

Research Development and Sponsored Programs are the central research support teams responsible for the review and submission of proposals (grants, contracts, cooperative agreements, non-monetary) to external sponsors and for the review and acceptance of any sponsored project funds. The team includes Pre-Award Services, Contract and Award Services, Electronic Research Administration and Research Development. They are located in 315 Administration Building.

Quick Guide available [here](#).

NEWS TO FEATURE IN THE RESEARCH + INNOVATION NEWSLETTER?

We welcome the opportunity to highlight the research infrastructure and innovation capabilities at the University of Memphis. Email major award notifications, conferences to be held at the UofM, honors, publications, research impact stories, initiatives, etc., for inclusion in an upcoming issue of the newsletter. We look forward to sharing the world-class accomplishments taking place at the University of Memphis.

CONTACT US

Visit the website for the latest news and happenings at the research park
Redefining the University District and strengthening Memphis' economic impact

View website [here](#).

GiveCamp Memphis Code for Charity, Design for Good

The FedEx Institute of Technology was honored to serve as the venue for GiveCamp Memphis this past weekend. Over 100 mid-south designers, developers, coders, and marketing experts donated their time, knowledge, and skills to bring digital solutions to the local nonprofits that need it the most. The national GiveCamp program has provided millions of dollars worth of developer and designer services to hundreds of nonprofits since its inception in 2007.

Don't miss out on future events, like and follow the FedEx Institute of Technology today:

[Twitter](#) | [Facebook](#) | [LinkedIn](#) | [Events](#)

UofM Faculty Achieve STTR Funding through Office of Naval Research Advancing the University's DOD collaboration

Dr. Ali Fatemi, Ring Companies Endowed Professor and department chair of Mechanical Engineering, and **Dr. Ebrahim Asadi**, assistant professor of Mechanical Engineering and director of the Metal Additive Manufacturing Lab, were each selected for STTR (Small Business Tech Transfer Research) Phase 1 projects.

Fatemi was awarded the project "ICME (Integrated computation materials engineering)-based fatigue life prediction of additive manufactured metallic components." Asadi was awarded "Rapid ICME-based multiphysics modeling of surface roughness in LPBF Ti6AlV4." Both projects are sponsored by the Office of Naval Research (ONR).

The goals of the ONR-funded projects are to assess the fatigue damage process and accumulation in additively manufactured metals as well as to develop fatigue life predictive models for safe and reliable operation of components used in aerospace structures. The additive manufacturing fabrication process has many advantages over the traditional subtractive manufacturing processes. These include the ability to fabricate parts with highly complex shapes, integration of multiple parts that do not require joining processes such as welding, and on-site fabrication of replacement parts (parts on demand). Because of these capabilities, additive manufacturing has significant global implications for the defense, and automotive, SBIR (Small Business Innovation Research) and STTR grants are a critical instrument for public-private partnership research.

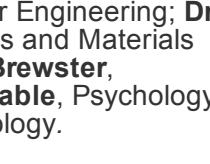
For more information on this research, contact Fatemi at afatemi@memphis.edu, or Asadi at esasadi@memphis.edu.

NSF Program Director, UofM Faculty Help Next Generation of Scholars Navigating SBIR and STTR

Dr. Peter Atherton, program director for Information and Communication Technologies at NSF, joined associate professor Dr. Paul Simone and **Dr. Gary Emmert**, associate dean, both of Chemistry, for a special session on SBIR and STTR from the perspective of faculty.

Often SBIR and STTR training is focused on the editors of the faculty should work with, but less consideration is given to the faculty's concerns. Atherton began the talk with an overview of SBIR and STTR from the NSF perspective, followed by Simone and Emmert's session on their experiences with the SBIR and STTR process. Listen to the talk at this [link](#).

UofM Announces Gap/Bridge Funding Awards Supports eight research projects



In an effort to accelerate research innovation at the University of Memphis, and in line with the University's goal of achieving and sustaining R1 status, the Division of Research and Innovation has awarded eight University of Memphis faculty members gap or bridge funding to continue research and increase research expenditures on campus. Sometimes applications to federal funding agencies or foundations that are denied funding are of high quality and can be strengthened further through additional work to meet funding agency requirements.

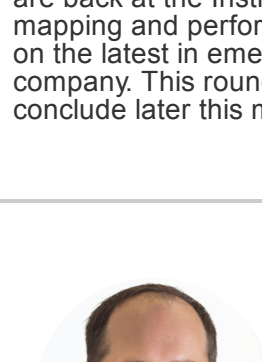
The faculty awarded through this program are: **Dr. Aaryani Sajja**, Biomedical Engineering; **Dr. Dan Baker**, Chemistry; **Dr. Thang Hoang**, Physics and Materials Science; **Dr. Eddie Jacobs**, Electrical and Computer Engineering; **Dr. Frouzesh Sabri**, Physics and Materials Science; **Dr. Timothy Brewster**, Chemistry; **Dr. Helen Sable**, Psychology; **Dr. Yu Jiang**, Epidemiology.

For questions regarding this initiative, email Cody Behles at cbehles@memphis.edu.

Training in Biosketch Development Using SciENcv Creating opportunities for successful research submissions

Science Experts Network Curriculum Vitae (SciENcv) is a new electronic system that helps researchers assemble the professional information needed for participation in federally funded research. While not required yet, within the next few months NSF and NIH will require the use of this platform for the creation of Biosketch. In order to help faculty with this transition, the Division of Research and Innovation is providing training on the platform.

If you are interested in providing this training for your department, please have your chair contact Cody Behles at cbehles@memphis.edu to schedule a training session.



Political Science Faculty Member Award Notification
To be honored with the Quincy Wright Award

Wright Award

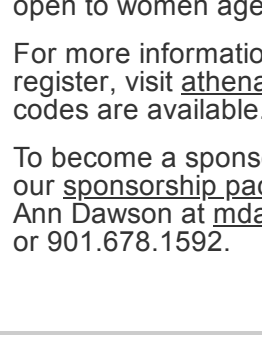
Dr. Dursun Peksen, professor in the Department of Political Science, is the 2020 recipient of the Quincy Wright Distinguished Scholar Award. Recipients of this award have an exceptional record of scholarship in international studies and a distinguished record of service to the International Studies Association. Among the many service activities Peksen has provided to the ISA is his current role as one of the editors of the journal *Studies Review*, a leading journal of the International Studies Association.

Dursun will receive the award and be honored with a roundtable at the International Studies Association Midwest Meeting in the fall.

FedEx SameDay Bot back on the streets of the UofM UofM campus serving as base for continued testing



As FedEx continues its push into new and innovative ways to deliver packages across the country, the UofM FedEx Institute of Technology is playing a key role by serving as home base for the SameDay Delivery Bot second round of testing. Roxo, an autonomous delivery robot, along with development teams from FedEx and DEKA Research and Development Corp., are back at the Institute for several weeks mapping and performing additional testing on the latest in emerging technology at the company. This round of testing should conclude later this month.



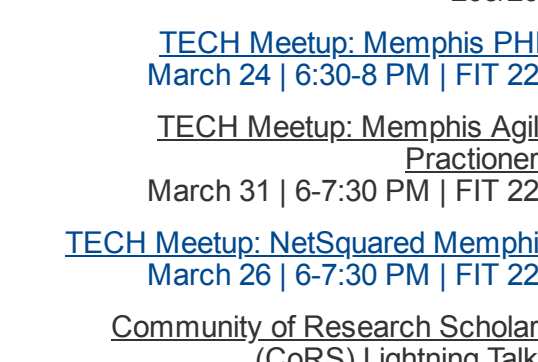
Toxic Slugs Chart a Path Back to Integrated Pest Management
Penn State Professor

highlighted ongoing research

The Ag & Food Tech Research Cluster at the UofM welcomed researcher and noted subject matter expert, **Dr. John Tooker**, professor of Entomology at Penn State University, to speak to industry leaders and UofM faculty about his expertise and research into Integrated Pest Management and the toxicity of insects, primarily slugs.

Many farmers are inadvertently handicapping their production systems by overusing pesticides, particularly insecticides. The work in Pennsylvania by Tooker's team (with some of the most challenging pests of no-till fields) revealed that Integrated Pest Management (IPM) is a key component to maximizing the production of these conservation-based systems.

Visit Tooker's [webpage](#) to learn more about his research.



All Women Hackathon April 17-18 | FIT Lobby, The Zone, Fishbowl

The FedEx Institute of Technology is again uniting tech organizations across Memphis and the Mid-South to bring the second all-women's hackathon to Memphis. ATHENA+techné Hackathon is a two-day event designed to cultivate a positive environment for women in technology from across the region and encourages women interested in the possibilities of technology to come together, collaborate on projects and compound the opportunities for women in the technology field. This year's event theme is "Tech Like a Girl" and is open to women ages 13 and up.

For more information on this event or to register, visit athenatechnetech.com. Discount codes are available.

To become a sponsor for this event, view our [sponsorship packet](#) and contact Mary Ann Dawson at mdawson@memphis.edu or 901.678.1592.

CALENDAR



TECH Meetup: Memphis Web Writers
March 10 | 6-8 PM | FIT 225

TECH Meetup: Memphis Game Developers
March 11 | 6-8 PM | FIT 225

TECH Meetup: MemPASS / Power Business Intelligence (BI)
March 12 | 5:30-7:30 PM | FIT 225

Memphis SciPreneur Challenge 2020: Final Pitch
March 12 | 5:30-7:30 PM | FIT MPT 103

Post Doc Acceleration and Career Escalation (PACE)/Post Award Management
March 16 | 3-5 PM | FIT 225

TECH Meetup: Memphis Python
March 16 | 6:30-8:30 PM | FIT 225

TECH Meetup: Mem DevOps
March 18 | 2-4 PM | FIT 225

Post Doc Lightning Talks & Networking
March 19 | NOON-2 PM | FIT Fishbowl 203/205

TECH Meetup: Memphis Agile Practitioners
March 24 | 6:30-8 PM | FIT 225

TECH Meetup: Memphis Agile Practitioners
March 24 | 6:30-8 PM | FIT 225

TECH Meetup: NetSquard Memphis
March 26 | 6-7:30 PM | FIT 226

Community of Research Scholars (CoRS) Lightning Talks
March 27 | 3:30-4:30 PM | FIT 226

TECH Talk IT & Healthcare: Dr. Mohan Chellappa
March 31 | NOON-2 PM | FIT MPT 103

TRAINING



IT & Healthcare Talk: Dr. Mohan Chellappa

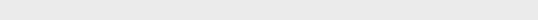
March 31 | NOON-2 PM | FIT MPT 103

Dr. Mohan Chellappa is the president of global ventures and executive vice president of Johns Hopkins Medicine International (JHI). A founding member of JHI since 1997, he is involved in developing international clinical consultancy activities, especially in the areas of clinical care program development, quality systems implementation and use of information technology in health care. Chellappa has been instrumental in securing and establishing various clinical, management and enterprise developmental initiatives and engagements of Johns Hopkins Medicine globally.

RSVP [here](#) to hear Dr. Chellappa talk about the future of IT and health care.

AGILE COACHING

Upcoming Dates:
March 25 | 8 AM - 5 PM
April 9 | 8 AM - 5 PM

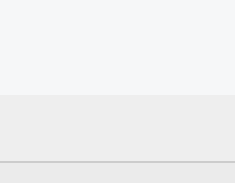


Agile Coaching 3-Day Training April 7-9 | 8:30 AM-5 PM | FIT 225

Join us as the Institute brings together the best minds in Agile research and development to provide world-class instruction in Agile techniques. The opportunity to work with faculty to facilitate Agile integration extends beyond the classroom. Research collaborations between the University of Memphis and your organization help more rapidly integrate Agile by examining the most strategic implementation course and highlighting unique opportunities to leverage Agile techniques to an organization's benefit.

Learn more on this training, or register [here](#). For inquiries on this or any other training, contact Rami Lotay rlotay@memphis.edu or 901.678.1041.

Share this email:



Manage your preferences | Opt out using TrueRemove™

Got this as a forward? Sign up to receive our future emails.

View this email [online](#).

365 Memphis Drive, Suite 303
Memphis, TN | 38152 US

This email was sent to:

To continue receiving our emails, add us to your address book.

Subscribe to our email list.