

# UNIVERSITY OF MEMPHIS RESEARCH & INNOVATION




December 2018

## Global Impact. Local Resonance.

The research community at the University of Memphis is making consistent impact as we grow our University's national reputation for excellence in research across disciplines. Every month we see more and more evidence of our resonance. Whether it is Dr. Wang and Dr. Jacob's ground-breaking research using 3D surveying technology, Dr. Bowlin's use of 3D printing to create vascular grafts, the innovative approaches of our new dean of the Graduate School, Dr. Robin Poston, or the appointment of Dr. Jasbir Dhaliwal, executive vice president for Research and Innovation, to the Tennessee State Energy Policy Council by Governor Bill Haslam until 2021, we are working to create a dynamic research community. Look for the next big leap forward in our January newsletter.

## RESEARCH



### UofM Partners with City of Memphis to Win \$418k "Map901" Grant

A collaboration between the City of Memphis and UofM Computer Science and Electrical Engineering faculty has netted a \$417,953 grant from the National Institute of Standards and Technology. Over the next year, UofM's Map901 team, led by Drs. Lan Wang and Eddie Jacobs, will use novel 3D Lidar technology to survey nearly 2 million sq. ft. of city and university building space. They will use the data to develop a 3D visualization application that will help first responders navigate buildings in an emergency situation where access to such systems in real-time is critical.

For more information, read the NIST Press release: [nist.gov/news-events/news/2018/10/pscr-awards-over-750k-psiap-point-cloud-city](https://www.nist.gov/news-events/news/2018/10/pscr-awards-over-750k-psiap-point-cloud-city)

### Bowlin Lab Using 3D Technology to Develop Vascular Grafts

Dr. Gary Bowlin's Biomedical Engineering Lab is pioneering the use of 3D near-field electrospinning, a nanofiber additive manufacturing process, to construct tissue regeneration templates and medical devices. The first use of this technology is being applied to designing a biomimicking, biodegradable polymer vascular graft that will function as a blood vessel and promote regeneration, such that in six months the polymer tube is gone and we have a new blood vessel in its place.

Read more on Dr. Bowlin's research interests, collaborations, publications, honors and awards [here](#).

### Art Graesser Awarded Prestigious McGraw Prize

The Harold W. McGraw, Jr. Prize in Education is one of the most prestigious awards in the field, honoring individuals who have dedicated themselves to improving education through innovative and successful approaches. The prize is awarded annually through the alliance of The Harold W. McGraw, Jr. Family Foundation, McGraw-Hill Education and Arizona State University.

This year, Dr. Art Graesser, professor in the Department of Psychology and the Institute for Intelligent Systems, was chosen from hundreds of nominations to receive the Learning Science Research prize for his work in developing intelligent tutoring systems. With this honor, he received \$50,000 and the iconic McGraw Prize bronze sculpture.

Dr. Art Graesser has lead the development of intelligent tutoring systems such as AutoTutor, a virtual tutor that helps students comprehend difficult concepts and manage their emotions as they tackle them.

For more information on this achievement, read the full story [here](#). For more information on Dr. Graesser's research featuring Auto Tutor, read [here](#). For more information on the Institute for Intelligent Systems (IIS), read [here](#).

## Division of Research and Innovation Launches New Limited Submission Process

The Division of Research and Innovation is launching a new process to facilitate the submission of limited grant competitions. Limited submissions exist when a sponsor limits the number of applications the University can submit. In order to ensure a fair and efficient process, staff have created guidelines and a website identifying funding opportunities that require the new process. The process will ensure that when the University can only submit one application, the proposal that best meets the sponsor guidelines and the University's strategic priorities will be submitted.

For complete details, visit our Limited Submission [site](#).

### Sunderman Wins Outstanding Technical Essay Award

Dr. Mark Sunderman, holder of the Chair of Excellence in Real Estate, won the 2018 Bernard L. Barnard Outstanding Technical Essay Award presented by the International Association of Assessing Officers (IAAO) for his paper, "Reducing Vertical & Horizontal Inequality in Property Tax Assessments" published in the *Journal of Property Tax Assessment & Administration, Volume 14, Issue 2*.

The article was co-authored with Dr. Evgenii Radetskii and Dr. John Birch. The award was presented at the IAAO annual conference in September.

### New Awards for November:

- Dr. Sheri Jenkins Keenan, clinical assistant professor in the Department of Criminology and Criminal Justice and research coordinator for the Center for Community Criminology, was awarded \$28,000 from the State of Tennessee for her project "Protecting Children of Arrested Parents: Using a Trauma Informed Approach."
- Dr. Emily Puckett, assistant professor with the Department of Biological Sciences, was awarded \$48,000 for her project "A Population Genomics Assessment of Subspecies Status, Genomic Diversity, and Range Stability of the Penasco Least Chipmunk (*Tamias minimus australis*) within the Context of Range-wide Demographic History" with the New Mexico Department of Game and Fish.
- Dr. Angela Madden, associate professor in the Department of Criminology and Criminal Justice, was awarded \$17,000 from the State of Tennessee for her project, "Developing an Interactive Map for Memphis Shelby County Office of Reentry."

\* 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



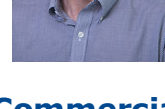

BIOLOGISTICS

CAST

DRONES

SMART Cities

## INNOVATION



### MIT Deshpande Center Director Speaking at FedEx Institute of Technology

**Talk Title:**  
**Commercializing University Research**

**Jan 31 | 5 PM | MPT (103)**

Since 2002, the MIT Deshpande Center for Technological Innovation has funded more than 140 projects at MIT, leading to 39 startups that have raised over \$700 million in investment. Leon Sandler will share his experience on how the center helps commercialize MIT technologies; understand the problems that need to be solved and the ingredients for success; and gain insights from the Deshpande Center's experience over the past 16 years. Discover the activities that allow technology to spin out into fundable startups, and the levers that can accelerate the process.

### Resources and Labs Lightning Talks & Networking Session

**Dec 6 | 3-5 PM | FIT 225, 226, 227**

The Division of Research and Innovation is ending the semester with a resource lightning talk and networking session. Faculty from across campus will be presenting on their resources and labs and discussing how to collaborate. Following the lightning talks we will host a networking session to encourage you to engage with new faculty and new disciplines.

We encourage community members to attend as well to meet researchers and learn about the world class research institution right here in Memphis.

Register for this event [here](#). If you wish to present, please email a single slide on the resource you will be discussing to [research@memphis.edu](mailto:research@memphis.edu).

### University of Memphis Doubles Total Number of Patents in Four Years

The University of Memphis has added two new U.S. issued patents, bringing the total number to nine received this year. The increased patent filings over the last four years has more than doubled the total number of patents held by the UofM.

**The two most recent U.S. patents are:**

Efficient Forwarding Information Base Caching System and Method.

Drs. Yaoqing Liu and Lan Wang

System of Method for Automatic Extraction of Conceptual Graphs.

Dr. Andrew Olney

### Communities of Research Scholars (CoRS) Funded

The Division of Research and Innovation has awarded seed funding to 13 newly-formed Communities of Research Scholars (CoRS) on campus. The CoRS program is designed to foster interdisciplinary discourse and nurture the growth of research affinity groups on campus.

The funded communities feature faculty from 10 schools and colleges: Fogelman College of Business and Economics; College of Arts and Sciences; College of Communication and Fine Arts; College of Education; School of Communication Sciences and Disorders; Herff College of Engineering; Cecil C. Humphreys School of Law; Loewenberg College of Nursing; School of Public Health; and, University Libraries.

Over the coming months, CoRS will be sharing its progress in Lightning Talks for the campus and greater Memphis community. Click [here](#) for a complete listing of funded teams and project descriptions.

### UofM's Edgar and Johnson Release New Book

Drs. Amanda Nell Edgar and Andre E. Johnson, both Assistant Professors in the Department of Communication and Film, co-authored a newly released book, *The Struggle over Black Lives Matter and All Lives Matter*, published by Lexington Books. The book details how the Black Lives Matter movement unfolded and the All Lives Matter counter-movement responded on social media and in personal relationships.

Dr. [Edgar](#) and Dr. [Johnson](#) address issues including family history, fear, religion, post-racialism and workplace pressure in the timely text. Read more about their book [here](#).

### Data Science & Analytics in Python Workshops

Grow your career by learning how to code, analyze data and make predictions with Python. These two-day, hands-on workshops are designed for scientists and working professionals who would like to learn new skills and strengthen existing skills in coding, data science and analytics. Register below.

**Python Programming and Data Analytics (Introductory Session).** \*Python Programming; Data Analytics with Pandas

Dec 6 – 7 | 9 AM – 4 PM

**Data Science and Machine Learning (Advanced Session).** \*Pandas; Data visualization; Machine learning with Scikit-Learn

Dec 13 – 14 | 9 AM – 4 PM

\*Registration Fee: \$500.00. Participants bring their own laptops, should be fluent in using a computer and have basic familiarity with programming. Register [here](#).

## CALENDAR



[DevSecOps](#)  
Dec 3– 4 | 8 AM – 5 PM | Fishbowl 203/205

[Machine Learning/Data Science/R](#)  
Dec 4 | 7 – 8 PM | FIT 227

[Faculty Workshop Series-Research Resources Lightning Talks](#)  
Dec 6 | 3 – 5 PM | FIT 225, 226, 227

[Unified Communications Meetup](#)  
Dec 11 | 6 – 9 PM | FIT 226

[MemDevOps December 2018 Meeting](#)  
Dec 12 | 2 – 4 PM | Fishbowl 203/205

[Memphis Game Design Workshop](#)  
Dec 12 | 6 – 8 PM | FIT 225

[Predictive Modeling Using Logistic Regression](#)  
Dec 13 – 14 | 8 AM – 5 PM | FIT 313

[MemTech Meetup: Python](#)  
Dec 17 | 6:30 – 8:30 PM | FIT 225

## TRAINING



[DevSecOps](#)

Dec 3 – 4

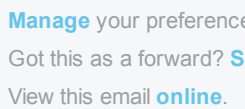
[Predictive Modeling Using Logistic Regression](#)

Dec 13 – 14



## Division of Research and Innovation Leading Through Innovation

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