



A Tennessee Flagship Carnegie R1 Research Institution

# RESEARCH + INNOVATION

## NEWSLETTER



Renewable Energy Systems Educational Experience

For implementation across solar energy PV installation, EV charging stations and smart building tech.

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## Identifying Risks and Developing Treatments

Defining biological mechanisms underlying cancer risk; developing effective personalized treatments.

[Read Full Story](#)



## Call for Proposals: Next Generation Supply Chains

Call for faculty to submit proposals for the upcoming Technologies and Innovation Challenge.

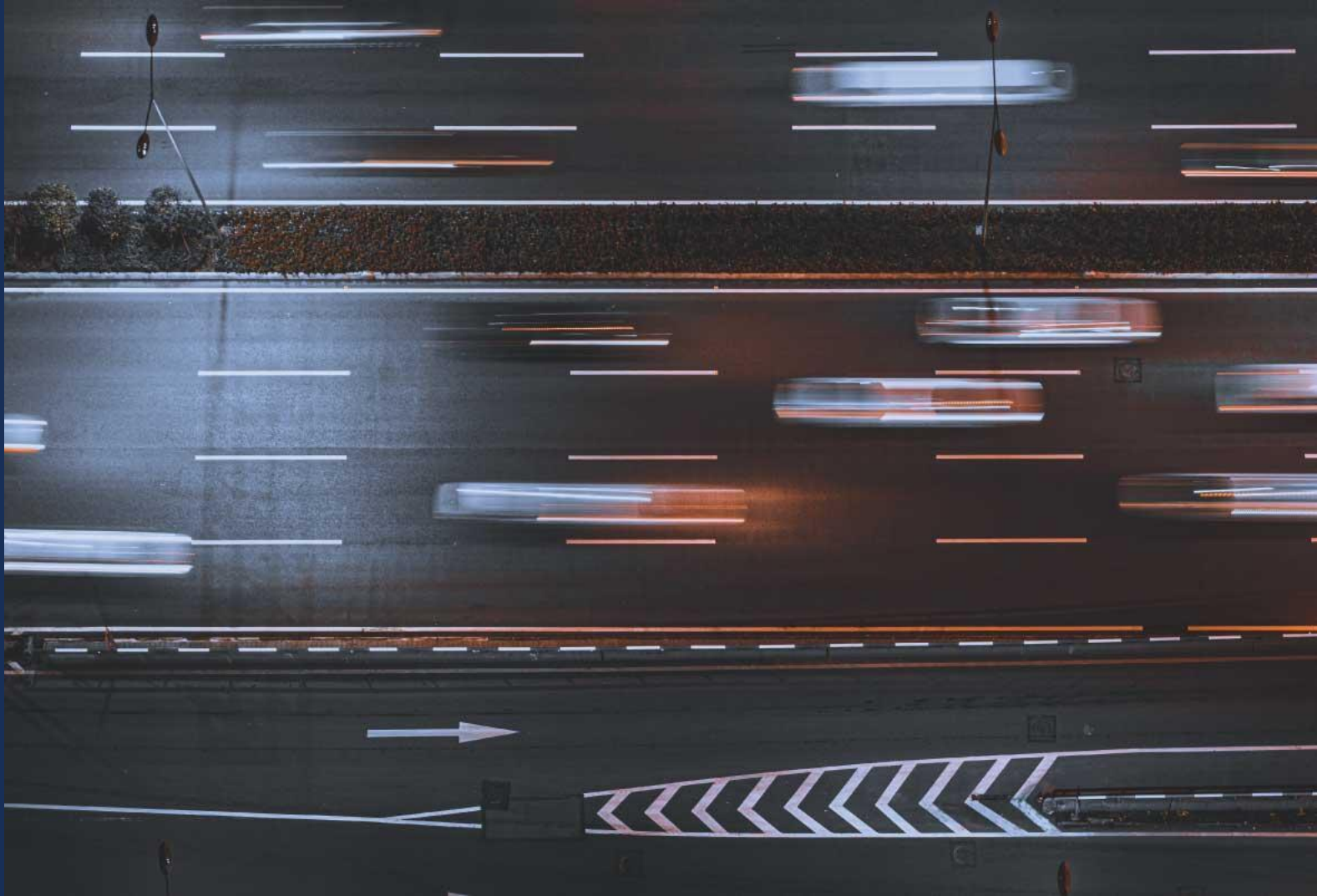
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## Finding Innovative Rehab Services Training

Project FIRST leads groundbreaking research; driving outcome-based approaches in rehabilitation.

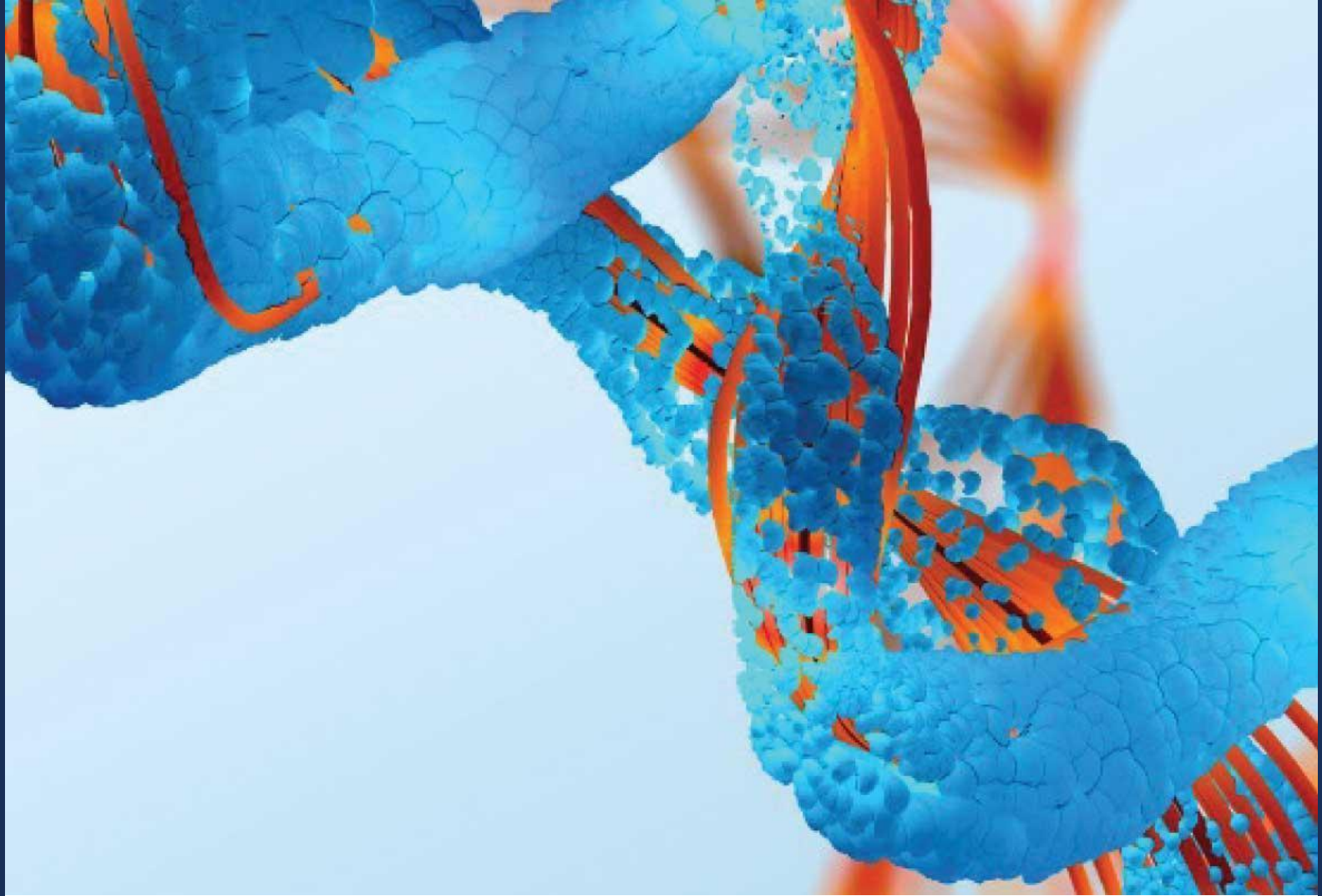
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## Induced Travel Study in Urban Areas in Tennessee

Striving to better understand travel patterns and local transportation impacts of road capacity expansion.

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## Advancing Synthetic Biology Research

UofM partners with TheraSyn Bio to advance research in biomedical, bioscience and cybersecurity fields.

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## Social Determinants of Health

Implications for mental health, moral injury, & burnout among Tennessee Nurse Educators in Higher Ed.

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## New Therapies for Fetal Growth Restriction

NIH-funded research supports work to prevent and treat fetal growth restriction.

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## Fine Arts, Humanities and Social Sciences Support

Research & Innovation announced the 2023-24 call. Taking applications through Feb. 15.

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## UofM Receives Two Engineering Patents

Inventors expanding the innovation footprint of Memphis and the Mid-South.

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## University Libraries and the Digital Commons

Building a vibrant and diverse digital repository for the University of Memphis community.

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## Text-based Messaging Strategies for Intervention

Preventing subsequent problematic alcohol use among technical trainees in the U.S. Air Force.

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## NEH, NIH, NSF and USDA Funding Opportunities

Recently published federal agencies' funding opportunities outlining upcoming grants.

[See Full List](#)



## Calendar of Events February 2024

Research Development, Research Enterprises, UMRF Research Park & FedEx Institute of Technology.

[See Full List](#)

## Research Awards January 2024 / December 2023

**Dr. Dipankar Dasgupta** awarded \$991,209.80 from the National Security Agency.

**Dr. Bonny Banerjee** awarded \$252,000 from Modus Operandi Inc. with the U.S. Department of Defense.

**Dr. Shawn Pollard** awarded \$181,745 from the National Science Foundation.

**Dr. Richard Bloomer** awarded \$168,123 from Liquid IV.

**Dr. Daniel Schaffzin** awarded \$167,223.60 from the City of Memphis.

**Dr. Wesley James** awarded \$159,877 from the Delta Health Alliance with the National Institutes of Health.

**Dr. Todd Zoblotsky** awarded \$149,997 from the Smithsonian Institution with the U.S. Department of Education.

**Dr. Cynthia Muzzi** awarded \$99,658 from the Virginia Department of Education with the U.S. Department of Education.

**Dr. Latrice Pichon** awarded \$91,466 from the Vanderbilt University Medical Center with the Center for Disease Control.

**Dr. Amir Hadadzadeh** awarded \$80,000 from AP&C Advanced Powders & Coatings, Incorporated.

**Dr. Matthew Smeltzer** awarded \$78,639 from the International Association and \$22,422 from the University of Tennessee Health Science Center with the National Institutes of Health.

**Dr. Francisco Muller Sanchez** awarded \$78,564 from the National Aeronautics and Space Administration.

**Derek Myers** awarded \$77,034 from the State of Tennessee, Office of Criminal Justice Programs.

**Dr. Myounggyu Won** awarded \$69,996 from Towson University with the National Security Agency.

**Dr. Carolyn Kaldon** awarded \$63,027 from the University of Tennessee Health Science Center with the Health Resources and Services Administration.

**Dr. Huigang Liang** awarded \$60,192 from the University of Texas at Austin with the National Institutes of Health.

**Courtnee Melton-Fant** awarded \$60,000 from the University of Wisconsin-Madison.

**Dr. Stephen Horton** awarded \$54,000 from the Arkansas Geological Survey.

**Dr. Minhae Cho** awarded \$50,000 from the City of Memphis Police Department with the State of Tennessee.

**Dr. Jeffrey Marchetta** awarded \$50,000 from the Tennessee Technological University with the U.S. Department of Energy.

**Dr. Deepak Venugopal** awarded \$50,000 from The Learning Academy LLC for his project "ASTRA: An AI-based tool to analyze math-learning strategies in big-data.

**Dr. Rory Pfund** awarded \$45,881 from the International Center for Responsible Gaming.

**Dr. Stephen Diko** awarded \$45,373 from the Memphis and Shelby County Planning and Development with the U.S. Environmental Protection Agency.

**Sandra Guntharp** awarded \$36,000 from the University of Tennessee Health Science Center with The Urban Child Institute.

**Dr. Alexander Headley** awarded \$32,476 from the Tennessee Technological University with the U.S. Department of Energy.

**Dr. Thomas Goebel** awarded \$19,540 from the National Science Foundation.

**Dr. Meredith Ray** awarded \$12,000 from the Research Foundation of CUNY with the National Institutes of Health.

**Dr. Firouzeh Sabri** awarded \$12,000 from the National Science Foundation.

**Dr. Michael Schmidt** awarded \$7,973 from Florida International University with the National Institutes of Health.

**Dr. Joel Bumgardner** awarded \$3,716 from Hera Health Solutions Inc.

**Dr. Emerson Bower** awarded \$3,250 from Graduate Women in Science.

**Dr. Elizabeth Gillespie** awarded \$1,695 from Advocates for Immigrant Rights.

*\* Data reported the 18th of each month. Awards finalized after the 18th will be reported the following month.*

[Full project and award details available here.](#)

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## Upcoming Events & Announcements



## FedEx Institute of Technology Technology Serving Humanity Speaker Series

Welcomes

### **Dr. Srijan Kumar**

Assistant Professor, College of Computing  
Georgia Institute of Technology

LLMs and multimodal models (e.g., GPT-4) make unexpected errors, which harms their reliability. I will discuss my group's latest research that investigates the scenarios in which these errors occur in multilingual, multimodal, and few-shot learning setups. I will describe several techniques to make these models more robust.

**Dr. Srijan Kumar** is an assistant professor at the College of Computing at the Georgia Institute of Technology. He completed his postdoctoral training at Stanford University, received a Ph.D. and M.S. in Computer Science from the University of Maryland, College Park, and B.Tech from the Indian Institute of Technology, Kharagpur. His research pioneers AI for internet Security and Security for AI models. He has developed AI methods to detect and mitigate the pressing threats posed by malicious actors (e.g., evaders, sockpuppets, etc.) and harmful content (e.g., misinformation, hate speech etc.) to web users and platforms. His methods have been used in production at Flipkart (India's largest e-commerce platform) and influenced Twitter's Birdwatch system. He has been selected as an NSF CAREER awardee, a Kavli Fellow by the National Academy of Sciences, named as Forbes 30 under 30 honoree in Science, ACM SIGKDD Doctoral Dissertation Award runner-up 2018, and best paper honorable mention award from the ACM Web Conference. Kumar has also won the Adobe Faculty Award and the Facebook Faculty Award. His research has been covered in the popular press, including CNN, The Wall Street Journal, Wired, and New York Magazine.

**Talk Title:** "AI x Security: Robustness and Reliability of Large Language and Multimodal Models"

**Thursday, Feb. 15 | 3 PM | Zoom**

[REGISTER](#)





## MID-SOUTH BIOMECHANICS CONFERENCE 6th Annual Conference to be Held at UofM

The Musculoskeletal Analysis Laboratory within the College of Health Sciences is excited to host the sixth Mid-South Biomechanics Conference (MSBC) to be held at the University of Memphis in the Maxine A. Smith University Center on Thursday, Feb. 15 and Friday, Feb. 16.

This conference will have large student research focus with podiums, digital posters, invited speakers, and group discussions. This even will provide great networking opportunities for undergraduate and graduate students who hope to continue their studies/careers in biomechanics and movement or health sciences.

They will provide coffee breaks throughout the conference, a social hour on Thursday during the poster session, and breakfast and lunch on Friday.

The conference is completely **FREE** for everyone.

[REGISTER](#)



## **Post Award Services: Effort Certification, Job Labor Changes & Labor Redistribution**

Please join us for a virtual workshop on Post Award Services detailing effort certification, job labor changes and labor redistribution.

For questions regarding the training, email [researchdev@memphis.edu](mailto:researchdev@memphis.edu).

**Friday, Feb. 16 | 9-10 AM | [Zoom](#)**



**University of Memphis 2024 Research Celebration**

The Division of Research & Innovation will host the Annual Research Celebration on Thursday, Feb. 22, to highlight research achievements, honor first-time principal investigators (PIs) and new PI millionaires from the 2023 fiscal year.

The celebration will be held from 3:30-5 p.m. at the FedEx Institute of Technology. Honorees should confirm their attendance by Friday, Feb. 9 via email to [researchdev@memphis.edu](mailto:researchdev@memphis.edu).

For questions regarding the Research Celebration, email [researchdev@memphis.edu](mailto:researchdev@memphis.edu).

**Thursday, Feb. 22 | 3:30 PM**  
**FedEx Institute of Technology | The Zone & Lobby**



**FedEx Institute of Technology**  
**Technology Serving Humanity Speaker Series**

Welcomes

**Dr. Sandeep Puro**  
Professor of Computer Information Systems  
Bentley University

**Dr. Sandeep Puro** is a professor of Computer Information Systems at Bentley University. His research deals with the design and evolution of complex technologies at larger scales such as organizations, governments and cities; blending methods from organizational science and software engineering, informed by domain-specific theories in business.

In this talk, Puroo will talk about using technology for social good, including helping students with disabilities transition to college and predicting long-term homelessness.

**Talk Title:** "Technology for Social Good."

**Friday, Feb. 23 | 10 AM | Zoom**

[REGISTER](#)



## **NIH R15 Cohort Kickoff**

Thursday, Feb. 29

This year the Division of Research & Innovation is excited to announce the start of the inaugural **National Institutes of Health Research Enhancement Award (R15) Cohort Program**. Similar to the highly successful NSF CAREER cohort program that is offered every year, the NIH R15 Cohort is designed to help faculty improve their chances of funding from NIH and includes training, workshops and professional editing and review services. These awards support the participation of undergraduate students as well as health professional students in faculty research in areas funded by the NIH.

The NIH Research Enhancement Award (R15) supports small-scale research projects at educational institutions that provide baccalaureate or advanced degrees for a significant number of the Nation's research scientists but that have not been major recipients of NIH support. The goals of the R15 are to support meritorious research, expose students to research and strengthen the research environment of the institution. Awards provide limited Direct Costs, plus applicable F&A costs, for periods not to exceed 36 months. This activity code uses multi-year funding authority. The R15 activity code continues to include two programs:

- Academic Research Enhancement Award (AREA) for Undergraduate-Focused Institutions
- Research Enhancement Award Program (REAP) for Health Professional Schools and Graduate Schools

The 2024 R15 Cohort Kick-off meeting will be held at the end of February and led by Dr. Brian Evans, manager of strategic research initiatives. Workshops, Q&A sessions and one-on-one meetings will be scheduled thereafter leading up to the submission deadline in September. A detailed schedule will be provided to all participants after the sign-up closes on Feb. 23.

Friday, Feb. 29 | 1-2 PM

[Zoom link »](#)

For questions, contact Evans at [bevans8@memphis.edu](mailto:bevans8@memphis.edu).

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## **FedEx Institute of Technology Distinguished Speaker Series**

Welcomes

### **Aaron Prather**

Director of Robotics and Autonomous Systems Programs  
ASTM International

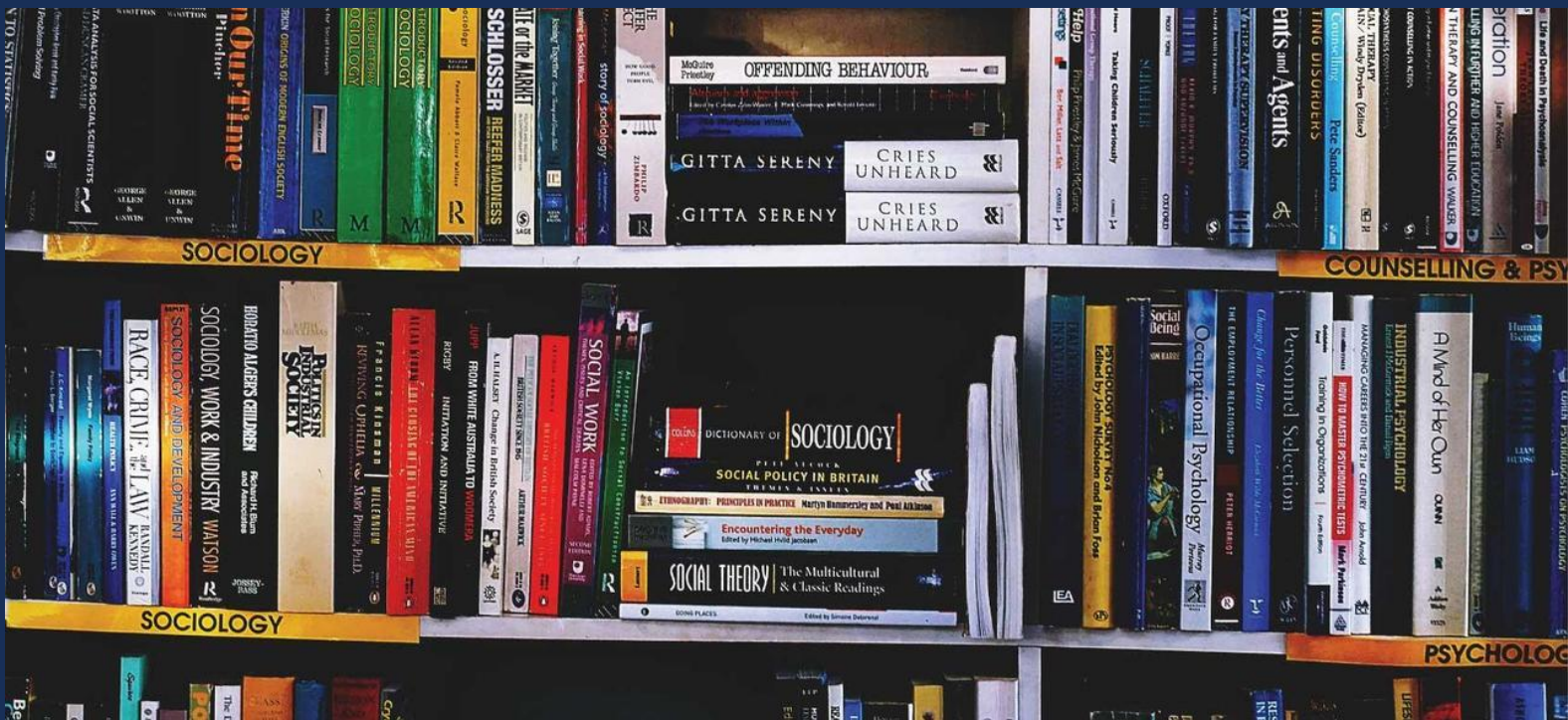
Most people have at least heard of Isaac Asimov's Three Laws for Robotics. For Aaron Prather and his team at ASTM International, they live those three laws everyday as they develop robot standards that are used by robot manufacturers, users and government regulators. As more robots enter our daily lives at both are places of work, our sidewalks and homes, Standards Organizations across the globe are trying to keep up and stay within the parameters of Asimov's original laws. In this presentation, Prather will give a highlight of some of the key standards that govern our robots and what is happening as the technology quickly improves and evolves.

In his current role, he oversees the creation of new standards for robotics and autonomous systems, development of worker training and various types of research and development. Prior to joining ASTM International, he was the Senior Robotics Advisor for FedEx. Prather regularly advises companies, academia, and government agencies on what robotics and autonomous systems can and can not achieve under current technology conditions. He manages ASTM's F45 Committee on Robotics, Automation, and Autonomous Systems which consists of hundreds of experts from across the globe on where new research and standards development should take place on these cutting edge technologies and he regularly speaks at tech conferences across the globe.

**Talk Title:** "Global Robotics Standards: More Than Just Asimov's Three Laws"

**Thursday, Feb. 29 | 3 PM | Zoom**

**REGISTER**



## Requests for Book Publications *Research + Innovation*

The Division of Research & Innovation is compiling a list of UofM faculty book publications that occurred during the last year. This list is self-reported by faculty. Faculty members who have ( *will have*) published a book— monograph, edited volume, etc.—between May 2023 and June 2024 — should email the book citation to [researchdev@memphis.edu](mailto:researchdev@memphis.edu).

Please do not send information on book chapters, journal articles, or other scholarly publications. The FY24 book publications will be housed [on the Division of Research & Innovation webpage »](#)



## Research Studies

### *Participation Opportunities*

Currently available:

- [Center for Information Assurance »](#)
- [Cognition, Language and Speech Lab \(CLaSLab\) »](#)
- [College of Health Sciences »](#)
- [Department of Psychology »](#)
- [Hearing Aid Research Laboratory »](#)
- [Loewenberg College of Nursing \(Heart Failure Study\) »](#)

If your department or college would like to have its research study participation opportunities listed, email [thisweek@memphis.edu](mailto:thisweek@memphis.edu).

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