



A Tennessee Flagship Carnegie R1 Research Institution

# RESEARCH + INNOVATION

## NEWSLETTER



Academic Journal, *Quaesitum*, Making Strides

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# ChatGPT



## Distinguishing Between ChatGPT & Human Writing

Research and research writing ethics are the focus with the emergence of AI chatbots.

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## 7.5-Minute Quadrangle in West Tennessee

Geology of the Enville quadrangle in Chester, Henderson and McNairy Counties in Tennessee.

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## Using Open Science to Personalize Treatment

Creating a Meta-Analytic research domain on psychological treatments for gambling treatment.

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## Arts & Health Research Team Grants Call

Submission guidelines for the fall 2023 cycle. Deadline to apply is Friday, Nov. 10.

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## Evaluation of the MS RIVER Collaborative

Research focus on health education and improving health outcomes in communities of color.

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## Study Measuring Asthma Incidence

NIAID with NIH funds DENS using data at birth to compare through young adulthood.

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## Innovation-Corps Grant Used for CVD Diagnosis

NSF funds research to understand unmet needs in maternal health and equity.

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## CfA Advancing Cybersecurity Research

Center receives \$1 million of the DHS grant to National Cybersecurity Preparedness Consortium.

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## Ethnographic Support for City Innovation

Department of Anthropology collaborates with Innovate Memphis; supports student researchers.

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## UofM World Renowned Classical Guitarist Afshar

Longtime Memphis-based Iranian guitarist and UofM instructor, Dr. Lily Afshar, passes away.

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## DRIVE Research Program Hosts Two-Day Workshop

Delta Revitalization Through Innovation, Vision and Equity helping communities pursue federal funding.

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## CDC, DOD, DOE, NEH, NIH and NSF Funding

Recently published federal agencies' funding opportunities outlining upcoming grants.

[See Full List](#)



## Calendar of Events November 2023

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

[See Full List](#)

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## Research Awards October 2023

**Dr. Xiaolei Huang** awarded \$1,115,997 from the National Science Foundation.

**Dr. Vasile Rus** awarded \$657,857 from the U.S. Department of Education.

**Dr. M. David Rudd** awarded \$566,943 from The Ohio State University with the U.S. Department of Defense.

**Dr. Susan Neely-Barnes** awarded \$530,000 from the Health Resources and Services Administration.

**Dr. Matthew Smeltzer** awarded \$476,610 from the Centers For Disease Control.

**Dr. Stephanie Ivey** awarded \$298,467 from the National Science Foundation, \$74,183 from Leidos Incorporated with the Federal Highway Administration and \$35,000 from Battelle.



**Dr. Nicholas Simon** awarded \$195,872 from the National Institutes of Health.

**Dr. James Murphy** awarded \$180,500 from the National Institutes of Health and \$11,522 from the University of Kansas Center for Research with the National Institutes of Health.

**Dr. Satish Kedia** awarded \$180,325 from Buffalo Valley Incorporated with the Substance Abuse & Mental Health Services Administration and \$105,325 from Mending Hearts, Inc. with the Substance Abuse & Mental Health Services Administration.

**Dr. Ali Fatemi** awarded \$136,265 from the Steel Founders' Society of America with the U.S. Department of Defense.

**Dr. James McCutcheon** awarded \$102,448 from the City of Memphis Police Department with the U.S. Department of Justice.

**Dr. James Adelman** awarded \$71,293 from Virginia Tech with the National Institutes of Health Dr. Shawn Brown awarded \$64,000 from USDA Forest Service.

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**Dr. Chrisann Schiro-Geist** awarded \$58,500 from the Tennessee Department of Human Service.

**Dr. Elena Delavega** awarded \$55,654 from the Church Health Center of Memphis.

**Dr. Brian Waldron** awarded \$48,805 from the City of Germantown.

**Dr. Stephen Zanskas** awarded \$40,777 from the U.S. Department of Education.

**Dr. Yuki Matsuda** awarded \$10,000 from The Japan Foundation Los Angeles.

**Dr. Richard Bloomer** awarded \$9,751 from Lumanity with Mirpam, LLC.

**Dr. Suzanne Lease** awarded \$6,000 from the National Collegiate Athletic Association.

*\* 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 Distinguished Speaker Series

Welcomes

## **Ben Carmichael**

Business Development Manager  
Southern Company Research & Development

Join the FIT as we welcome Ben Carmichael as part of our Distinguished Speaker Series. Carmichael is specializing in establishing national and international collaborations for advanced energy systems and primarily focuses on advanced nuclear and hydrogen programs.

Carmichael joined Southern Company in 2006 and has held various roles across its affiliates, including engineering positions in Fleet Operations and Generation Planning, managing nuclear fuel procurement for Southern Nuclear Operating Company, and overseeing new nuclear development opportunities for Southern Nuclear Development.

He holds a bachelor's in Electrical and Computer Engineering, a Master's in Civil Engineering from Auburn University, a Master's in Sustainability from the University of Alabama-Birmingham and is a licensed professional engineer in Alabama.

Carmichael will give the talk, "Clean Energy for Today and Tomorrow: Where the Nuclear Power Industry is Headed."

**Thursday, November 2 | 3-4 PM**  
**ZOOM**

RSVP



## TherSyn Bio Partnership

The bio-compounds and materials market is rapidly growing, driven by increasing consumer demand for sustainable and environmentally friendly products. According to a report by Grand View Research, the global bio-based market is expected to reach \$30.7 billion by 2026. The market for bio-based synthetics is expected.

By signing up you will better understand:

- What to look for when teaming/partnering with industry for potential U.S. Federal Government Grant and Contracting awards
- The Synthetic Biology industry and its projected impact on the current and future global market from a sustainable health and economic perspective
- Use Case of Scenario Explorations
  - Pharmaceutical/Biotechnology applications
    - Drug Production/Precision Medicine
    - Gene Therapies
    - Tissue Engineering
  - Biosecurity/Bio surveillance
    - DNA storage
    - Biological Circuits
  - Bio intelligence (also incorporating blockchain and decentralized uses)
  - Rapid Smart Tools
    - Biosensors
  - Synthetic genomes
- About platforms designing & developing precision bioscience tools that help overcome significant innovation areas.
  - Patient therapies
  - Environmental Science
  - AgriScience
- How Artificial Intelligence adds to the Synthetic Biology market
- Collaborative research opportunities for faculty, including a current team-building chance around a DARPA Biological Technologies call being pursued in partnership with UofM.

**Tuesday, Nov. 7 | 3-5 PM | ZOOM**

REGISTER





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

Welcomes

**Dr. Christian Wagner**

Chair and Professor  
School of Creative Media  
City University Hong Kong

Collective intelligence is a term to describe the ability of a group of non-experts to perform at expert-like levels, typically on cognitive tasks. Also referred to as the wisdom of crowds, thus indicating that these intelligent groups do not have to have cohesiveness, collective intelligence has is an intriguing phenomenon that defies common beliefs about the essence of expertise. Whereas statisticians have long argued that collective intelligence is a form of random error reduction based on the law of large numbers, it appears that the underlying mechanisms do not rely on random error cancellation, but on aggregating partial knowledge. Collective intelligence has had impact on business decision making and knowledge work through mechanisms such as decision markets or wikis, thereby creating significant impact.

This presentation will briefly describe collective intelligence and explain underlying principles that allow collective intelligence to emerge. The presentation will then address a follow-up question, namely whether collective intelligence is still needed, or whether it can compete with new forms of generative artificial intelligence that also demonstrate high levels of performance.

Dr. Christian Wagner is a chair and professor at the City University Hong Kong's School of Creative Media. He has researched the role of technology to improve human decision making and problem solving, including the role of artificial intelligence, for over 30 years. Wagner has (co-) authored over 150 articles related to the impact of technology and his work has appeared in many of the leading Information Systems journals.

**Talk Title:** "Collective Intelligence in the Age of AI"

**Thursday, Nov. 9 | 3 PM | Methodist Presentation Theatre (FIT 103)**



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

Welcomes

**Dr. Rakesh Verma**

Computer Science Professor  
University of Houston

Safeguarding people and organizations against opportunism and deception in computer-mediated communications presents a major challenge to chief information security officers and information technology managers. In one deceptive attack called phishing, an attacker tries to implant malware or to steal sensitive information, e.g., bank/credit card account numbers, login information for accounts, etc., from internet users. Every year unsuspecting Internet users and businesses lose significant time, productivity and money to this scourge. Estimates of the damage caused by phishing alone run from several hundred million dollars to billions of dollars per year. Indirect costs of phishing also include the additional equipment, software and manpower needed to combat the problem.

Besides phishing, deceptive attacks also include fake opinions, job scams and fake news. In this talk, he will present a new computational definition and a new taxonomy for the broad class of deceptive attacks and will examine the linguistic cues debate and the evidence on linguistic cues from a new general dataset for deception. Classification results for different kinds of deceptive attacks will also be included. The talk will wrap up with models that led to Top 10 finishes in six languages at SEMEVAL 2023 Persuasion Task (co-located with ACL 2023), and 1st place on the Arabic Twitter Disinformation Detection Tasks at the WANLP conference, co-located with EMNLP 2023.

**Talk Title:** "Persuasion & Deception in Text Data"

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## FedEx Institute of Technology Tech Training

### AI at Work

**Artificial Intelligence**, or AI, is finally here and is already generating the turbulence observers have long anticipated. It's not a cliché to say that virtually everything we do at work — or in our personal lives — will be transformed by AI. Like every technology that came before it, AI will require significant changes to the way we do things. Its benefits will accrue fully only when we have transformed our business processes to take advantage of AI's strengths and limitations.

This **two-day executive program** is aimed at meeting the following learning objectives:

- To introduce managers to the fundamental ideas of AI in its many dimensions
  - Artificial Narrow Intelligence (ANI) vs Artificial General Intelligence (AGI)
  - Machine Learning: concepts and examples
  - Supervised, Unsupervised, and Reinforcement Learning
  - Natural-language processing: concepts and applications
  - Computer Vision: concepts and applications
  - Big Data and AI: pattern recognition and prediction at scale; feature engineering
  - Generative AI: Large-language models (LLMs) and implications for Business
- To draw implications of AI for business, management, business models and employees:



- To visualize AI@Work: Case studies, examples of AI in industries, business processes, use-cases
  - AI in Services
    - Asset-heavy industries (package delivery, paper)
    - People-heavy industries (retail, finance, business services)
  - AI in Manufacturing and Construction
    - Discrete manufacturing (automotive, consumer goods)
    - Continuous-process manufacturing (oil-&-gas, chemicals)
    - Construction
  - AI-enabled Business Process Automation — and Process Redesign
    - CORE: how you deliver value
    - SUPPORT: making your delivery possible
    - MANAGEMENT: planning, coordination, monitoring, and control

**Questions?** Email Rami Lotay at [rslotay@memphis.edu](mailto:rslotay@memphis.edu).

**Wednesday & Thursday, Nov. 14 & 15**  
**8:30 AM-4:30 PM**  
**FedEx Institute of Technology, 225**

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## **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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## Quick Links

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