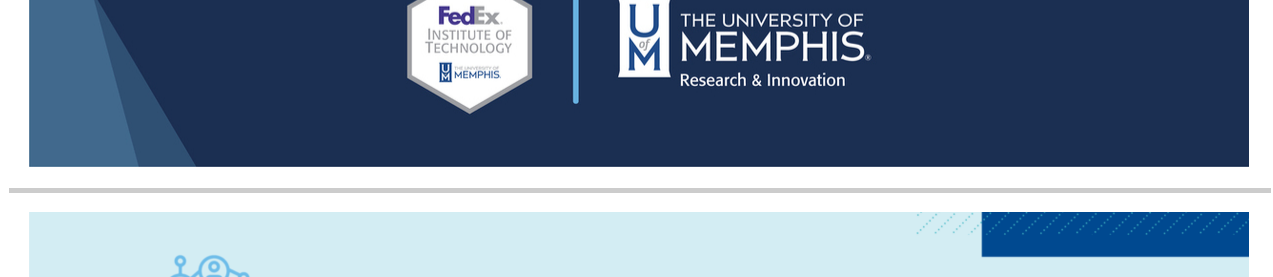




April 2020



## COVID-19: Research & Innovation Updates

# COVID-19 FAQs

## CONNECTING VIRTUALLY

The FedEx Institute of Technology wants to help you showcase your research and hold your events virtually! The move to online learning and interaction brings an opportunity to highlight how the University of Memphis is **DrivenByDoing** even though we're now apart from each other.

We stand ready to help you with virtual:

- Poster Sessions
- Lightning Talks
- Talks & Presentations
- Hackathons
- Q&A Sessions
- Tech Meetups

For more information or to schedule events, contact [fedex@memphis.edu](mailto:fedex@memphis.edu)

## RESEARCH + INNOVATION

### COVID-19 Pandemic and Opportunities for Advancing Research

#### Creating impact

The turmoil created by COVID-19 presents challenges and opportunities to all sectors of our society. We remain sensitive to the real danger that is facing our population from this disease, but now is also a defining moment for creating real impact through research. The unprecedented CARES Act, recently passed by Congress and signed into law, incorporates sweeping opportunities for impactful research across every part of the federal government. There has never been a better opportunity for research faculty to apply for funding, and the Office of Research Development is here to help.

**Collaboration and Networking Assistance**

In order to prepare for these opportunities, the Office of Research Development is assisting faculty with forming collaborative teams. If you need help identifying collaborators, please complete this [form](#). If you are already considering a solicitation and haven't spoken with our office, please send us a note so that we can track the forthcoming applications and identify larger trends. If you have an idea for a team you would like to discuss, please reach out to us.

**Narrative and Pandemic Connection Assistance**

If you are having trouble finding the connection with COVID-19 and CARES in your research, or need help pivoting your narrative to respond to the pandemic or have any other questions or concerns, please email [cbehles@memphis.edu](mailto:cbehles@memphis.edu).

**Large Project External Review**

If you plan to submit a new proposal for a large research effort (budget of \$1.5 million or more) related to COVID-19, please notify our office at [researchdev@memphis.edu](mailto:researchdev@memphis.edu). We have limited resources through our partners at M&Q for comprehensive review.

### University of Memphis Metal Additive Manufacturing Lab Produces Critical PPE for TEMA

#### Helping to fill the gap

Led by **Dr. Ebrahim Asadi**, assistant professor in Mechanical Engineering, the University of Memphis Metal Additive Manufacturing Lab ([MAMLab](#)) team answered the call to produce personal protective equipment (PPE) face shields using their fleet of 3D printers.

Spearheaded by the Tennessee Higher Education Commission along with the Tennessee Board of Regents, the University of Memphis joined the state-wide effort to produce critically needed protective equipment for delivery to the Tennessee Emergency Management Agency (TEMA).

For more information, read the news story [here](#)>>. For more information on Asadi's research, visit his [webpage](#)>>.

### CERI Receives Three Awards in March

#### Provides \$757,000 in funding

The Center for Earthquake Research and Information (CERI) received three awards during the month of March. These awards fund projects that will help to better understand the effects and consequences earthquakes have on society.

**Modeling the "Earthquake Gate"**

In this project, **Dr. Christodoulos Kyriakopoulos**, assistant professor, combines high-performance computing with advanced numeric models to explore the dynamic characteristics of the Cajon Pass "Earthquake Gate" in southern California. More specifically, he is interested to understand how the disposition of the high topographic slopes near the Cajon Pass could affect or not affect the propagation of a future large earthquake (the "big one") on the San Andreas Fault. His research efforts contribute towards a better assessment of the earthquake hazard in this region and earthquake rupture in general.

**CERI and USGS Enter a Five-Year Partnership**

Associate professor, **Dr. Mitchell Withers**' project provides funding for the first year of a new five-year cooperative agreement with the U.S. Geological Survey (USGS) to continue operating the CERI seismic network. CERI operates over 140 stations throughout the central and southeast U.S. and reports on earthquakes from the Oklahoma border to the Potomac River. We are one of seven Tier 1 Regional Seismic Networks in the USGS-led Advanced National Seismic System and operate 24 hours a day, 365 days per year providing rapid earthquake alerts within about three to five minutes of the event. Our data are publicly available and provide the basic input necessary for advanced seismicological research. Earthquakes continue despite the global threat of COVID-19 and much of our operations are now performed remotely.

**GPS Array for Mid-America Helps Predict Earthquakes**

Memphis sits in the New Madrid Seismic Zone, one of the most active seismic locations on Earth. Every year hundreds of earthquakes happen right under our feet. To help better predict these events, the CERI team are deploying GPS Array for Mid-America (GAMA) to add an important geodetic component to the study of ongoing earthquakes in the New Madrid Zone. **Dr. Robert Smalley**, research professor, will lead this project.

Funded by USGS's Earthquake Hazards Program, data provided by GAMA will improve understanding of enigmatic non-plate boundary earthquakes in general, and will contribute crustal deformation data to addressing the important question of whether the NMSZ could produce future earthquakes similar to those of 1811-1812. The GAMA network complements the sparse Earth-Scope CGPS backbone in the central U.S. By design, PBO specifically avoided regions of potential deformation such as the New Madrid, Wabash, and Charleston Seismic Zones as they were excluded by the plate boundary focus.

For more information on CERI's research, visit [here](#)>>.

### UofM Research to Fly on International Space Launch Will be a part of the Next Launch

**Dr. Firouzeh Sabri**, associate professor and chair of the Department of Physics and Materials Science, has been awarded a notification and grant to fly her polymer composites on the International Space Station National Laboratory for a period of six months in order to study the effects of extreme conditions on the polymer composites synthesized in her laboratory. Sabri and her students will travel to Houston to deliver the samples as they get ready for launch date.

Additionally, Sabri is the first U.S. speaker to be invited as a plenary speaker at the [International Conference on Aerogels for Biomedical and Environmental Applications](#) sponsored by the European Cooperation in Science and Technology, an organization focused on research and innovation networks.

### UofM Theatre Professor Receives Prestigious Fulbright Scholarship Second for Brown

**Sarah Brown**, associate professor in Theater & Dance at the University of Memphis, has been awarded a prestigious Fulbright Scholarship to Romania where she will teach performance and direct acting students in a series of solo shows for NATO.

The award runs from October through June 2021. Brown will be teaching solo performance and mask performance at Lucian Blaga University of Sibiu, Romania, as well as directing shows for an international audience.

"The most remarkable aspect of my activities in Romania will be directing the acting students in a series of solo shows for 400 NATO officers and their families from all 29 NATO countries who will be establishing a three-star command post in Sibiu this year," said Brown. "This is a huge directorial and public relations project that I will be leading with the students – a project that will help draw this new international population closer to the city of Sibiu and to the university. Since English is one of the official languages of NATO, the theatre department wants me to help the students develop shows that they will perform for NATO in English."

This is the second Fulbright Award Brown has received since joining the UofM. Her first Fulbright was a 10-month program in Israel in 2010-11 to teach solo performance and Commedia del Arte at the University of Haifa.

The U.S. Department of State's Bureau of Educational and Cultural Affairs oversees Fulbright Program operations throughout the world.

Read the full press release [here](#).

### Research Awards March 2020

**Dr. Mitchell Withers**, associate research professor in the Center for Earthquake Research and Information, was awarded \$675,000 from the U.S. Geological Survey for his project "Operation of the Mid-America Integrated Seismic Network."

**Dr. John Sabatini**, distinguished research professor in the Department of Psychology and the Institute for Intelligent Systems, was awarded \$408,896 from the U.S. Department of Education for his project "Developing and Validating Understanding Assessments for Adult Education."

**Dr. James Murphy**, professor in the Department of Psychology, was awarded \$71,422 from the National Institutes of Health through collaboration with the University of Tennessee Health Science Center for his project "Testing the Effects of Contingency Management and Behavioral Economics on Buprenorphine-Naloxone Treatment Adherence Using a Sequential Multiple Assignment Randomized Trial (SMART) Design."

**Dr. Robert Smalley**, research professor in the Center for Earthquake Research and Information, was awarded \$52,369 from the U.S. Geological Survey for his project "GPS Array for Mid-America- monitoring deformation in the New Madrid seismic zone."

**Dr. Robert Koza**, professor in the Department of Mathematics, was awarded \$50,747 from the Air Force Research Laboratory through collaboration with Intelligent Fusion Technology, Inc. for his project "Machine Learning based Domain Adaptation for Multiple Source Classification and Fusion."

**Dr. Maria Botelho**, professor and director of Graduate Studies and Graduate Coordinator in the Department of Mathematics, was awarded \$35,000 from the National Science Foundation for her project "Trends in Operator Theory."

**Dr. Christodoulos Kyriakopoulos**, assistant professor in the Center for Earthquake Research and Information, was awarded \$30,000 from the National Science Foundation through collaboration with the University of Southern California for his project "Is topography part of the key in the Cajon Pass earthquake gate?"

**Dr. Andrew Guthrie**, assistant professor in the Department of City and Regional Planning, was awarded \$29,712 from Innovate Memphis for his project "Transit Academy."

**Dr. Russell Deaton**, Kanpur professor of the Department of Engineering and Associate Dean of Academic Affairs and Administration, was awarded \$27,652 from the Tennessee Department of Commerce and Insurance for her project "State Equipment Grant."

**Dr. Michael Hagge**, professor and chair of the Department of Architecture, was awarded \$19,896 from the Tennessee Department of Commerce and Insurance for his project "A+E Grant 2019."

**Dr. Brennan Berg**, associate professor of Sport Commerce in the Kemmons Wilson School of Hospitality & Resort Management, was awarded \$15,000 from the American Athletics Conference for his project "Effective Social Support to Retain AAC Student-Athletes."

**Dr. Douglas Powell**, assistant professor in the School of Health Studies, was awarded \$14,960 from the American Athletics Conference for his project "Sports bra support alters anterior cruciate ligament stress and knee joint biomechanics during cutting and landing movements."

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

### 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](#).

### MD2K Creates COVID-19 App

#### mContain ready for public release

Researchers at the MD2K Center of Excellence, headquartered at the UofM, in collaboration with a local infectious disease expert, announce the launch of a free mobile app called mContain to reduce the community transmission of COVID-19.

mContain uses location and Bluetooth technologies in smartphones to detect proximity encounters (within six feet for several minutes) with other app users. Similar to a step counter, the app counts and displays the number of daily proximity encounters with other app users. To reduce the chances of entering crowded places, the app displays the level of crowding at busy places on a map. The mContain App also has an option of a confidential COVID-19 patient proximity alert, if a user and their COVID-19 test provider both agree to share the results of their test.

After installing the app, no action is needed from users. mContain does not collect or keep any identifying information such as their names, phone numbers, logins or emails. The app minimizes battery consumption by using Bluetooth and location data sporadically.

The free mContain app is currently available at the mContain website ([mcontain.org](http://mcontain.org)) and via the Google Play Store for Android devices; an iOS version for the Apple App Store will be released shortly.

For more information on MD2K research, visit their [website](#)>>.

### Virtual Training for Researchers

#### Office of Research Development

### Grantsmanship Virtual Training: Proposal Architecture

April 8 | 2-3 PM (CDT)

In this session, we will discuss/review the key parts of the proposal: project summary, intellectual merit, broader impacts, biosketch, budget, citations, data management plan, facilities and equipment. Join us on [Zoom](#).

### Grantsmanship Virtual Training: Navigating CARES and COVID 19 Funding

April 9 | 11 AM-NOON (CDT)

We review/discuss the CARES funding information, discuss solicitations and answer questions regarding the legislation and impact on research. [Registration link](#). Webinar ID: 315-858-035

### Grantsmanship Virtual Training: Understanding the Review Process

April 16 | 9-10:30 AM (CDT)

In this session, we will dig deep into the review process to help better understand what reviewers are thinking and evaluating. Join us on [Zoom](#).

### FIT: FIGHTING IT TOGETHER Hackathon

April 20-24 | Online

This is your opportunity to come together (virtually) to identify support, and bring innovative solutions to some of the most pressing challenges currently affecting us all.

Using quick, online collaboration sessions, participants will work together in teams to identify needs and opportunities with the goal of developing and implementing solutions related to virtual learning, medical shortages, and navigating business operations in an ever-changing environment.

The FedEx Institute of Technology will offer remote sessions from April 20-24 as part of a virtual hackathon designed to honor social distancing, while also addressing these critical ongoing issues many of us are experiencing.

For more information on this event, [visit](#) >>. Follow the list now to secure your virtual [seat](#)>>.

### IIS Faculty Working to Educate Illiterate

One in six adults in the United States has literacy skills at a low level of proficiency and faces difficulties with daily literacy tasks. Some of these adult readers come from poverty, some have dropped out of middle or high school, and others arrive from other countries with a different language and culture. Adult education programs, consisting of adult basic education, and English language acquisition, offer instruction to help struggling adults (ages 16 and older) improve literacy skills with the culminating goal of obtaining a high school equivalency degree. Federally-funded adult education programs serve an estimate of 2.6 million adults, which represents only a small percentage of the nation's struggling adult readers. The empirical data reveals consistent weaknesses not only in adults reading comprehension, but also in basic component reading skills including decoding, word recognition, reading efficiency/fluency, and vocabulary.

Despite this empirical base, there remains a need for enhanced assessments designed for adult learners to inform instruction, institutional accountability and program improvement, as well as measuring learning outcomes and student progress. **Dr. John Sabatini**, professor in Psychology and the Institute for Intelligent Systems (IIS), along with Dr. Daphne Greenberg, Georgia State University and Dr. Tenaha O'Reilly, Educational Testing Service (ETS), are addressing the need for better assessment in adult education programs by developing two suites of valid and reliable, web-administered assessments: 1) scenario-based, higher-level reading comprehension and 2) reading component assessments. The work leverages the research and development from a previously awarded IES grant aimed at developing innovative assessments across pre-K to 12th grade to adapt these assessments for use with adult populations. The resulting assessment system is expected to be useful to practitioners in understanding better the reading profiles of the diverse learners they serve, to policy makers in evaluating the effectiveness of programs, and to the research community in conducting future intervention development and evaluation.

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

### Biological Sciences Faculty Works with PhD to Secure External Funding

#### Awarded NSF funding for postdoc fellowship

**Dr. Duane McKenna**, William Hill Professor in Biological Sciences, recently worked with a PhD student at the University of Illinois, **Lynette Strickland**, to prepare a grant application for a three-year NSF-DBI postdoc position in his lab at the University of Memphis. The National Science Foundation (NSF) recently recommended the application for funding. Strickland's research is in the area of tropical forest insect biodiversity and genomics. Strickland will start work as a postdoc in McKenna's lab in 2021 and will be collaborating with researchers at the Smithsonian Tropical Research Institute in Panama. A brief summary of her research is available [here](#)>>.

For information regarding this funding, contact McKenna at [dmckenna@memphis.edu](mailto:dmckenna@memphis.edu). Learn more about his research [here](#).

### ATHENA{techn}e Hackathon

All-Women Hackathon | Memphis, TN

### All Women Hackathon

Date TBD | Fall 2020

With the ongoing COVID-19 pandemic, the ATHENA TechnHackathon has been postponed until Fall. We will announce the new date once we are better able to assess. This year's event, "Tech Like a Girl," will be back and we look forward to seeing everyone again soon. Stay well!!

For more information, visit [athenatechnhackathon.com](http://athenatechnhackathon.com), or contact Mary Ann Dawson at [mdawson@memphis.edu](mailto:mdawson@memphis.edu).

### CALENDAR

### TECH Virtual Meetup: DevMemphis

April 7 | 6-7:30 PM | Teleconference

### TECH Virtual Meetup: Memphis Game Developers

April 8 | 6-8 PM | Teleconference

### TECH Virtual Meetup: MemPASS/Power BI

April 9 | 5:30-7:30 PM | Teleconference

### TECH Virtual Meetup: ReactJS Beginners to Advanced

April 9 | 6:30-8:30 PM | Teleconference

### TECH Virtual Meetup: Code Together

April 12 | 1-3 PM | Teleconference

### TECH Virtual Meetup: Memphis Web Workers

April 14 | 6-8 PM | Teleconference

### TECH Virtual Meetup: Machine Learning/Data Sciences/R

April 14 | 7-8 PM | Teleconference

### TECH Virtual Meetup: Tech Transfer Lifecycle

April 16 | 12:30-1:30 PM | Teleconference

### TECH Virtual Meetup: Memphis M365

April 16 | 3-5 PM | Teleconference

### TECH Virtual Meetup: Memphis Python

April 20 | 6:30-8:30 PM | Teleconference

### FIGHTING IT TOGETHER: Virtual Hackathon April 20-24

April 23 | 6-7:30 PM | Teleconference

### TECH Virtual Meetup: Memphis Agile Practitioners

April 23 | 6-7:30 PM | Teleconference

### TECH Virtual Meetup: Memphis .Net

April 23 | 6-8 PM | Teleconference

### TECH Virtual Meetup: Tech Transfer Overview

April 24 | 12:30-1:30 PM | Teleconference

### TECH Virtual Meetup: Memphis Xamarin

April 28 | 6-8 PM | Teleconference

### TECH Virtual Meetup: Memphis PHP

April 28 | 6:30-8 PM | Teleconference

### TECH Virtual Meetup: Code Co-op

April 28 | 6:30-8 PM | Teleconference

### TECH Virtual Meetup: API Management with MemDevOps

April 29 | 2-4 PM | Teleconference

### TECH Virtual Meetup: Visual Testing with GDG Memphis

April 30 | 6:30-8 PM | Teleconference

### TRAINING

### Lean Portfolio Management

May 11-18 | 8 AM - NOON (CDT)

### Lean Portfolio Management

8:00 AM-NOON (CDT)

In this course, attendees will gain the practical tools and techniques necessary to implement the Lean Portfolio Management functions of Strategy and Investment Funding, Agile Portfolio Operations and Lean Governance.

For more information, contact Rami Lotay at [rlotay@memphis.edu](mailto:rlotay@memphis.edu). To register, visit [here](#) >>.

### Training From the Back of the Room

June 2-5 | 8 AM - NOON (CDT)

### Training From the Back of the Room

June 2-5 | 8 AM - NOON (CDT) | Online

If you train, coach, lead meetings or facilitate groups, this course takes your training skills to an advanced level, regardless of the complexity of topics or level of learners. Training From the Back of the Room is an accelerated learning model that goes hand-in-hand with agile values and principles. During this dynamic two-day train-the-trainer program, you will learn and apply and practice the 4Cs of instruction design. Learn how the human brains learns in this virtual training programs.

For more information, contact Rami Lotay at [rlotay@memphis.edu](mailto:rlotay@memphis.edu). To register, click [here](#) >>.

### Agile Coaching

June 8-11 | 8 AM - NOON (CDT)

### Agile Coaching

June 8-11 | 8 AM - NOON (CDT) | Online

A coach's primary goal is to enhance their client's awareness of practice and behavior — enabling and empowering the client to realize objectives which may be just outside of their reach. Through thoughtful and deliberate engagement, the coach strives to enhance, in a measurable and sustainable fashion, team practices in order to provide focus on the business goals and objectives of the team and organization. This course is designed to teach, practice and reinforce the core coaching competencies of the agile coach, enabling the coach to succeed at reaching agreed-upon team and organizational outcomes. Join us as the Institute brings together the best minds in agile research and development to provide superior instruction in agile techniques.

To learn more, contact Rami Lotay at [rlotay@memphis.edu](mailto:rlotay@memphis.edu). To join this training, register [here](#) >>.

### University of Memphis Research + Innovation Magazine

Leading Through Innovation

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