

NEWS

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Samuel Ginn
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Announcements

Samsung Research America (SRA) Launches START Collaboration Program

The **Strategic Alliance for Research and Technology (START) program** aims to promote collaborative research with leading universities from the North American region. START is an annual open call for proposal (CFP) style engagement to identify new technologies and conduct research for future Samsung's devices and experiences.

Eligible projects may receive **up to \$150,000 in funding**, and renewal decisions will be based on year 1 results.

For questions or feedback about the program, email start@samsung.com. For more information about themes, research areas of interest, and the program's timeline, [view the SRA brochure on ERAD's Guides & Resources page here](#).

SGCOE Faculty Colloquium Spring 2025 Schedule

Please join us next **Wednesday, February 5 in Brown-Kopel's 2nd floor Grand Hall from 12:00 pm–1:00 pm** to hear from two speakers. First, Silvia Quintero, Director of Electronic Research Administration (ERA) & Research Analytics, will provide a brief overview and training on the Grants module of Endeavor.

Next, Patrick Reed, executive director of Auburn University's Intellectual Property Exchange (IPX), will discuss the relaunch of IPX and its support of technology transfer, external partnering, and agreements processing. The speakers will begin at approximately 12:15 pm, and lunch will be provided for all attendees.

Please also mark your calendars for the remaining Spring colloquium dates:

- Tuesday, February 25
- Tuesday, March 25
- Wednesday, April 9
- Tuesday, April 22

Funding Opportunities

Auburn University Rural Partnership Institute's (AURPI) Call for Collaborative Research

Internal Proposal Deadline: March 17, 2025

Award Amount: \$50,000

Areas of Interest: industrial and systems engineering, cybersecurity, waste management, forestry production, poultry science,

The Auburn University Rural Partnership Institute (AURPI) is seeking proposals from faculty members who are working with industry or community organizations to enhance the sustainability and economic viability of Alabama's poultry and forestry industries. Topics include but are not limited to:

- Developing technological solutions and market intelligence
- Advancing poultry and forestry industries
- Water management and waste stream upcycling
- Exploratory social and health science research on challenges facing rural Alabama

Projects are expected to be a 1–2 year effort and should begin in the Summer or Fall of 2025. AURPI will award **2–4 projects with an estimated total funding of up to \$50,000 each**. Investigators are also encouraged to include graduate and undergraduate students in the proposal and research.

For information on proposal formatting, guidelines, and contact personnel, [visit AURPI's page here](#).

Boosting Research Ideas for Transformative and Equitable Advances in Engineering (BRITE)

Division of Civil, Mechanical and Manufacturing Innovation, National Science Foundation (NSF)

Proposals due: March 3, 2025

Total award amount: \$100,000 – \$200,000 per year for a maximum of 3 years

Areas of Interest: civil, design, mechanical, industrial, systems, manufacturing, and materials engineering

In support of experienced engineering researchers (tenured or equivalent), this solicitation seeks to (1) enable researchers to **pivot** into a field of research where they have no proven track record, or (2) enable researchers with a hiatus to **relaunch** back into active research by reestablishing a foundation for sustained research productivity.

All BRITE proposals should address research that contributes to one or more program areas of the [Division of Civil, Mechanical and Manufacturing Innovation \(CMMI\)](#). Although collaborative proposals are *not* permitted, PIs can include a collaborator as senior personnel.

Read more about this funding opportunity [here](#).

Faculty Research Spotlight

Dr. Shiwen Mao





Dr. Shiwen Mao of Electrical and Computer Engineering (ECE) serves as Professor, Earle C. Williams Eminent Scholar Chair, and Director of the Wireless Engineering Research and Education Center (WEREC). His broader research interests include wireless networks and their applications in multimedia communications; machine and deep learning; RF sensing; and smart grid—which uses digital technologies to manage the distribution of electricity from power sources to end users.

Dr. Mao's interest in applying deep learning to wireless communication problems led to his 2016 publication in *IEEE Transactions on Vehicular Technology* titled, "**CSI-based fingerprinting for indoor localization: A deep learning approach.**" In the paper, Dr. Mao and his graduate students, Xuyu Wang and Lingjun Gao, present a deep-learning-based indoor fingerprinting system called DeepFi, which utilizes channel state information (CSI) to capture how signals travel between devices and find the location of such devices.

The system architecture is comprised of two phases. In the offline training phase, deep learning is used to train the weights of a deep neural network layer by layer as fingerprints. Then, in an online localization phase, the system uses a probabilistic method based on a radial basis function to predict the device's approximate location. "Experimental results are presented to confirm that DeepFi can effectively reduce location error, compared with three existing methods in two indoor environments," Dr. Mao explains.

The publication received contributions from Auburn WREC alumnus, Dr. Santosh Pandey, and was sponsored by a seed grant from Cisco. It has gained widespread recognition among engineers, researchers, and educators, with **22,626 downloads** on IEEE Xplore and approximately **1,300 citations** according to Google Scholar. Additionally, it was featured as a Web of Science ESI Highly Cited Paper and won the 2018 Best Journal Paper Award from the IEEE Communications Society Multimedia Communications Technical Committee (MCCT) and the 2020 Jack Neubauer Memorial Award from the IEEE Vehicular Technology Society.

As wireless communications continue to evolve into a crucial part of modern infrastructure, Dr. Mao says maintaining interdisciplinary collaborations is key. One such partnership is with Auburn's Radio Frequency Identification (RFID) Lab, which is offering deeper insights into "the role of wireless sensing and the Internet of Things (IoT) in inventory management, retail operations, and supply chain optimization."

Looking forward, Dr. Mao aims to continue making "meaningful technical contributions to the field [and] providing leadership and service within the [IEEE] community," all while enhancing the visibility and reputation of Auburn University and its sponsors.

Xuyu Wang, Lingjun Gao, Shiwen Mao, and Santosh Pandey, "[CSI-based fingerprinting for indoor localization: A deep learning approach](#)," *IEEE Transactions on Vehicular Technology*, vol.66, no.1, pp.763-776, Jan. 2017. DOI: 10.1109/TVT.2016.2545523.

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