NEWS
ENGINEERING RESEARCH ADMINISTRATION
AUBURN UNIVERSITY
Samuel Ginn College of Engineering

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Announcements

New IACUC Module Launches on July 14th

A sixth endeavor module—the **Institutional Animal Care and Use Committee (IACUC)** module is launching on July 14, 2025, at 10:00 a.m. CT. The upcoming module will transition the submission and review process for **animal care and use protocols** into a digitized system.

What This Means for Faculty:

Moving forward, faculty will use **Endeavor** to manage their IACUC submissions. To help ease the transition, the **Animal Care and Use Program** and the **Electronic Research Administration (ERA)** team will be offering **training sessions** and sharing helpful resources to ensure a smooth onboarding experience.

Transition Timeline

- **July 14 – August 14:**
  Transition period – paper protocols already in progress (e.g., for the July 24 meeting) will continue through the current process. However, **all new protocols should be submitted in Endeavor**
- **August 14:**
  Last day to submit any new paper protocols.
- **August 15:**
  All new IACUC protocol submissions must be submitted through **Endeavor**.

Lastly, modifications to existing **paper protocols** will still be accepted in paper form until the protocol expires. Modifications for protocols submitted via **Endeavor** should be made directly in the platform.

Call for Pilot Research Proposals

The Mike Slive Foundation for Prostate Cancer Research is pleased to offer a **pilot grant funding opportunity** aimed at supporting the early-stage development of innovative research projects that have the potential

to lead to significant scientific advancements. Projects should focus on subject areas relevant to prostate cancer, including but not limited to **prevention, diagnosis, treatment, and the underlying causes (etiology)** of the disease. This funding is intended to help investigators generate preliminary data or proof-of-concept findings that can strengthen future applications for larger, highly competitive federal or foundation grants.

The Medical Advisory Board will evaluate grant proposals based on their potential to address a critical problem or significant barrier within the current landscape of prostate cancer research. Proposals must clearly articulate how the project will advance **scientific knowledge, technical capabilities, and/or clinical practice.** Reviewers will consider whether the project has the potential to transform foundational **concepts, methods, technologies, treatments, services, or preventive interventions** that drive the field forward.

Full proposals must be submitted by **September 1, 2025.**

View the full funding announcement here.

Funding Opportunities

Electrochemical Systems

National Science Foundation
Proposals Due: You can apply for this opportunity at any time
Areas of interest: electrochemistry, photochemistry, energy storage, energy efficiency, catalysis, environmental sustainability, kinetics, thermodynamics

NSF invites research proposals focused on electrochemical and photochemical processes for the **development of sustainable energies such as electricity, fuels, chemicals,** and other specialty and commodity projects. Projects are required to support scalability, promote environmental sustainability, reduce greenhouse gas output, and incorporate renewable resources.

Energy Storage Research Focus:

Projects related to energy storage are encouraged and should aim to overcome fundamental scientific barriers relevant to applications in **renewable electricity storage, transportation propulsion**, or other areas with the potential to significantly mitigate climate change.

Innovative and **radically new battery technologies** are especially encouraged, as they can accelerate the transition to a more sustainable transportation system and support broader integration of renewable electricity source.

Read more about this funding opportunity here.

Thermal Transport Processes (TTP)

National Science Foundation
Proposals Due: You can apply for this opportunity at any time

Areas of interest: thermochemical energy storage, biomimicry, novel cryogenic cooling concepts, thermotherapy, quantum information storage

NSF is requesting proposals that contribute to thermal transport fundamentals. Research outlined in proposals should elaborate on how thermal transport dynamics influence the behavior and functions of systems. A preference is given to proposals which expand on solving problems that create notable economic, environmental, or societal benefits.

Research Topics

- convection/diffusion/radiation and thermodynamics
- biological heat and mass transport
- nanothermics/microthermics/mesothermics
- thermal science and quantum technology interface
- new metrology and artificial/machine learning methodologies in thermal sciences

View the full announcement here.

Research in Action

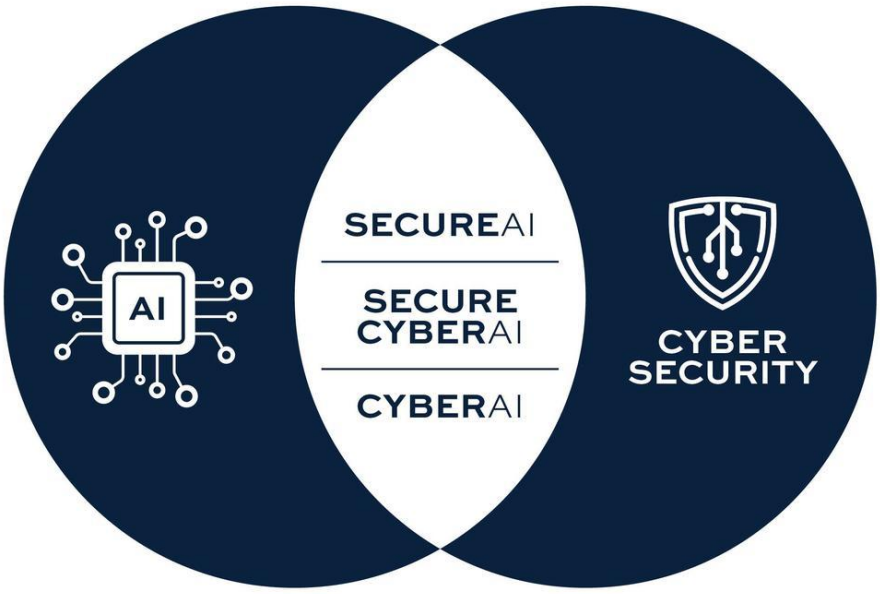
Center for Artificial Intelligence and Cybersecurity Engineering

Auburn University is Leading the Way in AI-Driven Cybersecurity Innovation

In an era where cyber threats evolve at machine speed, Auburn University's Center for Artificial Intelligence and Cybersecurity Engineering (AU-CAICE) is positioning itself at the forefront of defense—by making the machines smarter, systems stronger, and each solution more resilient. The Center's research is structured around three dynamic thrusts, each blending AI and cybersecurity to create intelligent, self-sustaining systems:

- **SecureAI:** Focused on building AI models that are not only effective but also resistant to adversarial attacks and data manipulation. The goal is to ensure trust and reliability in AI decision-making.
- **CyberAI:** Harnessing the power of AI to enable real-time threat detection, classification, and autonomous response. This area aims to accelerate and strengthen cybersecurity defenses.
- **SecureCyberAI:** Merging explainable and adaptive AI with cybersecurity to develop self-healing systems that can understand, adapt to, and recover from evolving threats.

Together, these research areas position AU-CAICE at the cutting edge of secure, AI-enhanced cyber systems.



Intelligence that Defends Itself

At the pinnacle of AU-CAICE's research are breakthroughs in mitigating **model extraction attacks**—where adversaries attempt to steal an AI model by systematically querying it and using the responses to reconstruct a duplicate model. This form of cyber manipulation is referred to as **"black box querying"**.

To counteract these threats and advance our understanding of how these attacks occur, Auburn researchers have studied precisely how the attackers' approaches are able to be carried out. Their work has uncovered **weak points in existing AI systems** and guided the design of new, more secure architectures that can withstand these attacks.

At the **2025 DARPA Resilient Software Systems Colloquium**, Auburn scientists demonstrated an advanced technique for reverse-engineering AI models using only black-box access. By combining **gradient-based querying**—a method for detecting how outputs change with slight input shifts—with sophisticated **algebraic geometry tools**, they achieved high-accuracy reconstructions of **GELU-based neural networks**. This research not only shows the power of current attack strategies but also paves the way for AI that can intelligently defend itself.

Student Engagement

The Center intentionally designs its curriculum to emphasize mentorship within Auburn’s cybersecurity and AI programs. It provides graduate and undergraduate students with research opportunities, hosts seminars and hackathons, and integrates research projects into hands-on learning environments. Students gain practical experience by working on secure AI implementation and testing in adversarial settings.

Supporting these efforts, Auburn is home to student organizations such as the **Auburn University Ethical Hacking Club** and the **Society for**

Responsible Artificial Intelligence (SRAI). The **Ethical Hacking Club** promotes cybersecurity awareness through workshops, hands-on activities, and participation in national competitions, while also fostering connections with industry professionals. **SRAI** focuses on the ethical and inclusive development of AI, offering students opportunities to engage in responsible AI research and development, and collaborate on accessible, real-world solutions. Both organizations are open to all Auburn students, faculty, and staff, and are accessible through **AUinvolve**, Auburn's student engagement portal.

Future Directions

AU-CAICE aims to become a national leader in advancing AI and Security systems that shape the future of cybersecurity. The center is dedicated to building long-term, extramurally funded research and educational partnerships.

Serving as a hub for interdisciplinary collaboration, the Center connects academia, industry, national laboratories, and government stakeholders together—positioning Auburn to help build a more secure digital world. Through these efforts, AU-CAICE not only aims to drive technical innovation, but to shape national priorities in AI and cybersecurity research.

Content adapted from the Auburn University Center for Artificial Intelligence and Cybersecurity Engineering. Visit their website by clicking here.
