



Upcoming Webinars

Cooling the AI Revolution: Intelligent Thermal Management for Sustainable Data Centers



Join EARTH on June 23 (2 pm ET, Zoom) for a webinar with **Dr. Xu Han** (University of Notre Dame) on **sustainable cooling for the AI era**. As data centers drive rising energy demand, this talk highlights key thermal management challenges and emerging solutions, including model-based optimization, fast fluid dynamics, and flexible operations that support grid stability, and strategies for more efficient and resilient AI infrastructure.

[Register Here](#)

Sustainable Thermal Management Strategies for High-Demand Cooling Environments



EARTH will host a webinar on **Tuesday, July 14 at 3 pm ET (Zoom)** featuring **John Libby of Air₂O**. With growing cooling demands in data centers and other mission-critical facilities, this session will focus on the evolving challenges of thermal management and practical, industry-tested solutions. John will discuss high-efficiency HVAC technologies, indirect evaporative cooling, heat recovery methods, and approaches that support reliable operations while reducing energy and water use.

[Register Here](#)

Don't have time to attend? Our [webinars](#) are recorded and available on demand.

Publications

Cross-ERC Innovation: Enabling Cryopreservation with Next-Gen Cooling Systems



John Bischof
Director,
ATP-Bio



Mark Shiflett
Director,
EARTH

A Guide to Cryogenic Refrigerant Properties and Selection for Tissue & Organ Cryopreservation

Cryobiology

Lakshya Gangwar, Dorothy Haggard, Michael L. Etheridge, Mark B. Shiflett, and John C. Bischof

This collaboration bridges advanced refrigerant development ([EARTH](#)) with cutting-edge organ preservation science ([ATP-Bio](#)), addressing one of medicine's biggest challenges: safely storing and transporting transplant organs.

[Read Article](#)



Sustainable Refrigerants, Policy Drivers, and Emerging Technologies

Annual Review of Chemical and Biomolecular Engineering

Emmanuel Ababio, David R. Corbin, and Mark B. Shiflett

[Read Article](#)

Member Achievements



Congratulations to **Dr. Montana Carlozo** on successfully defending her Ph.D. thesis, “Property Predictions Using Machine Learning and Optimization Enhanced Molecular Simulation.” Co-advised by Ed Maginn and Alexander Dowling at the **University of Notre Dame**, her work integrates process systems engineering, optimization, and molecular modeling to advance predictive capabilities. Montana also served as the ERC EARTH Student Leadership Council President for 2025–2026, demonstrating outstanding leadership. After Notre Dame, **she plans to pursue a patent agent career on the East Coast and has passed the United States Patent and Trademark Office (USPTO) registration exam.**



Congratulations to **Maggie Stephens**, a graduate student at the University of Notre Dame in Bill Phillip’s research group, on earning an **NSF Graduate Research Fellowship Program (GRFP) Honorable Mention!** This recognition highlights Maggie’s exceptional promise as a researcher and reflects her hard work, creativity, and dedication to advancing STEM. Being recognized by the NSF GRFP places Maggie among a highly competitive cohort of emerging scientists and engineers poised to make meaningful contributions to their fields. We’re incredibly proud of Maggie’s achievement and excited to see the impact she will continue to make through her research.



Congratulations to University of Kansas **Professor Christopher Depcik**, who has been selected by students in the KU Department of Mechanical Engineering as the **Outstanding Faculty Member for the 2025–2026 academic year.** This recognition reflects his commitment to excellence in teaching and student engagement.



University of Kansas **Professors Aaron Scurto** and **Mark Shiflett** represented EARTH at the **European Symposium on Applied Thermodynamics** in Lisbon, Portugal, where they were invited to present their latest research. Prof. Scurto’s talk explored deep eutectic solvents and their thermophysical interactions with hydrofluorocarbon gases. Prof. Shiflett presented innovative methods for separating azeotropic refrigerant mixtures with ionic liquids.

Scholar Leadership Council

We are pleased to announce the newly elected officers of the Scholar Leadership Council (SLC): Luc Mauro, President; Mariah Randriambololona, Vice President; Kevin Turner, Treasurer; and Hyunjik (Kevin) Kim, Secretary. Each core university is represented by a chair. **This year also marks the council's transition from the Student Leadership Council to the Scholar Leadership Council**, reflecting a more open approach that includes undergraduate, graduate, and postdoctoral researchers. We look forward to the leadership and perspectives they will bring in the year ahead.



Luc Mauro
President
Lehigh U.

Mariah Randriambololona
Vice President
U. Maryland

Kevin Turner
Treasurer
U. Kansas

Hyunjik (Kevin) Kim
Secretary
U. Delaware

University Chairs



Isabelle (Izzy) Herlinger
Lehigh U.

Bamaiyi (Benjamin) Kamji
U. Notre Dame

Kagan Sears
U. Maryland

Robyn Cook
U. South Dakota

Yuniva Mendoza-Apodaca
U. Kansas

Wasfia (Fia) Hoque
U. Hawai'i

Funding Opportunities Snapshot

New funding opportunities span both **fundamental research** and **large-scale applied R&D**, with programs targeting different stages of innovation.

- [ACS Petroleum Research Fund \(PRF\)](#)
Agency: American Chemical Society (ACS)
Focus: Fundamental research in petroleum-related chemistry, fossil fuels, sustainability
Deadline: **September 14 to October 9, 2026**
- [NIST CHIPS R&D BAA](#)
Agency: National Institute of Standards and Technology (NIST), U.S. Department of Commerce

Focus: Semiconductors, AI, quantum technologies, advanced manufacturing

Deadline: **Rolling through September 30, 2029**

Notes: Starts with white paper

- [ARPA-E SCALEUP Ready](#)
Agency: ARPA-E, U.S. Department of Energy
Focus: Energy technology scale-up, commercialization, pilot systems
Deadline: **Rolling through September 29, 2029**
Notes: Starts with concept paper
- [AFRL Knowledge Discovery BAA](#)
Agency: U.S. Air Force Research Laboratory (AFRL), Department of Defense
Focus: AI, data science, information retrieval, decision-support systems
Deadline: **Rolling through September 9, 2029**
Notes: White paper, invite-only proposal
- [AFRL CANVAS BAA](#)
Agency: U.S. Air Force Research Laboratory (AFRL), Department of Defense
Focus: Distributed systems, workflow orchestration, resilient operations
Deadline: **Rolling through May 21, 2029**
Notes: White paper, invite-only proposal

Education and Workforce Development

Meet Our Newest Team Member



Welcome, Ceren Kabakci! Ceren joins EARTH this summer at the University of Kansas, where she will work with Education and Workforce Development Director Jennifer Sprague as a graduate student worker. A graduate research assistant in KU's Bioengineering Program, she will support a range of EWD initiatives, including coordination of the REU and RET programs, development of workforce ecosystem resources, early-career mentoring, and program documentation. We're eager to have her on board as we continue building pathways that connect research, education, and workforce development.

FROST REU Is Underway

Our summer Research Experiences for Undergraduates (REU) program, **FROST: Fostering Research Opportunities in Sustainable Technologies**, officially kicked off on May 26 at the University of Kansas and we're thrilled to welcome this year's cohort.

Over the next 10 weeks, students from across the country will dive into hands-on research focused on sustainable HVACR systems and next-generation refrigerants. Working alongside

EARTH faculty, participants will engage in technical training, collaborative projects, and field experiences aimed at tackling real-world challenges, from improving system efficiency to enabling environmentally responsible refrigerant transitions.

We're thrilled to support these early career researchers as they build skills, explore career pathways, and contribute to shaping a more sustainable future.

2026 FROST Cohort and Faculty Mentors:

- Cooper Rehm – Shiguang Deng, Mechanical Engineering
- Michael Conklin – Mark Shiflett, Chemical & Petroleum Engineering
- Muskan Taori – Ana Morais, Chemical & Petroleum Engineering
- Kelsi Che – Anthony DeFilippo, Mechanical Engineering
- Jayla Morgado-Derilus – Yoonjung Ahn, Geography & Atmospheric Science
- John McCarthy – Aaron Scurto, Chemical & Petroleum Engineering

Stay tuned for highlights from their summer journey!

The Adventures of EARTH Man



Follow EARTH Man as he navigates real-world safety and refrigeration challenges in a monthly comic series.

Read the latest issue and catch up on past [comics!](#)

Innovation Ecosystem

Patent Curious?



Never looked closely at a patent before? Patents can seem a little intimidating at first glance, with their numbered paragraphs, dense diagrams, and carefully worded claims. But they are much easier to navigate once someone shows you how to decode the jargon and where to look.

Faculty and students are invited to schedule a one-on-one patent walkthrough with **Tony von Sadovszky**, EARTH's Innovation Officer, at tvsv@ku.edu. We'll take a real patent apart, look at the various pieces and parts, discuss what matters most when reading one, and answer any specific questions you may have along the way.

No prior patent experience required. Curiosity is sufficient!

Announcements and Reminders

Please use the following statement in your publication acknowledgements:

“This research is based upon work supported by the National Science Foundation under award number **EEC-2330175** for the Engineering Research Center EARTH.”

Did you know that an EARTH Convergent Research (CR) Meeting Calendar is maintained in the shared Google folder? View the [2026 calendar](#).

Upcoming Meetings

June 18: Thrust 3 (3 pm ET)

June 25: Convergent Research Leadership (3 pm ET)

June 29: Crosscut 3 (3 pm ET)

July 1: Annual Report Deadline 1

July 9: Thrust 1 (3 pm ET) and Crosscut 2 (4:30 pm ET)

July 15: Annual Report Deadline 2 (CR)

July 16: Thrust 2 (3 pm ET)

Follow EARTH on Social Media!



[About Us](#) | [Contact Us](#)



The Environmentally Applied Refrigerant Technology Hub (EARTH) is working to create sustainable, accessible refrigeration and air conditioning innovations that will improve the quality of life for all Americans and secure U.S. leadership in workforce development and manufacturing.

[Manage](#) your preferences | [Opt Out](#) using TrueRemove™
Got this as a forward? [Sign up](#) to receive our future emails.
View this email [online](#).

1536 W. 15th Street University of Kansas | Lawrence, KS 66045 US

This email was sent to l257r093@ku.edu.
To continue receiving our emails, add us to your address book.

emma®