



EARTH Environmentally Applied
Refrigerant Technology Hub

Edition #8

Welcome to EARTH*

September 2025

**We are taking suggestions for newsletter names!
Do you have a good idea? [Email us!](#)*

In This Issue

Member Achievements • New Publications • Upcoming Webinars • Outreach •
Postdoc Appreciation • Funding Opportunities

• Announcements and Reminders •

Register for the Upcoming Site Visit



We are excited to welcome you to the NSF EARTH Site Visit, taking place on **October 20-22, 2025**, at the University of Kansas in Lawrence, KS. This is an important milestone for our Center, and your participation will be a vital part of demonstrating the strength of our team.

[Register for the event](#) | [Reserve your hotel](#)

New to EARTH?

If you haven't yet received a calendar invitation to attend a research meeting, please notify [Tiffany Oquendo](#) and [Jessica Tami](#) so you can be added to the appropriate Google Groups. We'll need to know your Thrust, Project, and Crosscut you're working on.

In addition to research meetings, joining the right Google Group ensures you receive updates about onboarding steps, like completing CORE, participating in the Student Leadership Council (SLC), and engaging in other EARTH-wide activities. Once added, you'll automatically receive calendar invitations and important communications to help you get fully integrated into the community.

Save the Date

The University of Notre Dame is pleased to host the next EARTH Annual Team Meeting on **March 12-13, 2026**. Mark your calendars and look out for more details in the coming months!



Member Achievements

Several EARTH faculty flew to Lisbon, Portugal in early August to attend the [21st European Symposium on Fluorine Chemistry](#).



Prof. Mark Shiflett gave a plenary lecture titled *NSF Engineering Research Center EARTH (Environmentally Applied Refrigerant Technology Hub)*.



Prof. David Vicic presented on the *Dehydrofluorination of Legacy Refrigerants at Group 9 Metal Pincer Complexes*.

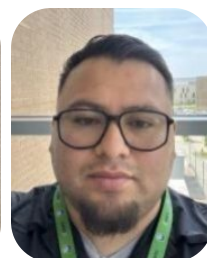
Dr. Casey Williams (former Education Director, current Industry Liaison Officer) and the 2025 KU Research Experience for Teachers (RET) participants, **Mike Steinmetz** and **Jhonatan Vallejo** from Johnson County Community College, aligned the math and science standards to what HVACR professionals need to know. The group will present their findings [Paving the HVACR Education Pathway: An Interactive Exercise in Standards-Mapping](#) at the [2026 National HVACR Education Conference](#) in Las Vegas.



Dr. Casey Williams

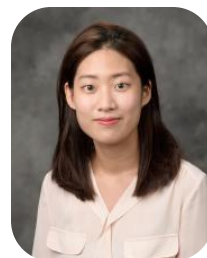


Mike Steinmetz



Jhonatan Vallejo

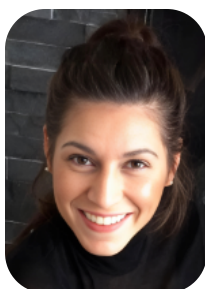
Prof. Huijeong Kim and collaborators earned the [ASHRAE Best Paper Award](#) for the conference paper titled “*Social Energy Games for Smart and Energy-Efficient Multi-Unit Residential Buildings: Mechanism Design*.” Prof. Kim received this award at the 2025 ASHRAE Annual Conference in Phoenix, AZ.





Prof. Mark Shiflett was selected for the inaugural [Rock Chalk Ready](#) commercialization program. His proposal, *Novel Acids for Use in the Fuel and Detergent Industries*, was one of six chosen from 25 university-wide proposals. The Rock Chalk Ready program is supported by the Kansas Department of Commerce and aims to de-risk early-stage innovations by providing funding, mentorship, and commercialization support.

University of South Dakota graduate student, **Kriti Chitrakar**, gave an oral presentation titled *Nanoporous Metal-Organic Supercontainers for Dehumidification* at the [ACS Fall 2025](#) meeting in Washington, D. C.



EARTH Administrative Director, **Tiffany Oquendo**, received the *2025 Staff Excellence Award* from the University of Kansas School of Engineering. This award recognizes her outstanding contributions to our Center and the broader KU Engineering community. She was honored at an all-school celebration on September 10. Thank you for all you do, Tiffany!

University of Maryland graduate students, **Boyang Liu** and **Andoniaina Mariah Randriambololona**, were featured in [Maryland Today](#) for "doing good" this summer.



Boyang
Liu



Andoniaina
Mariah
Randriambololona



Prof. Dongxia Liu has been named Director for the [Center for Catalytic Science & Technology \(CCST\)](#) at the University of Delaware, continuing a 50-year legacy of excellence in catalysis research and education. Under her leadership, CCST will continue advancing sustainable technologies through collaborative research, education, and industry partnerships.

• Convergent Research •

Did you know that an EARTH Convergent Research (CR) Meeting Calendar is maintained in the shared Google folder? You can view the entire 2025 calendar [here!](#)

Upcoming Meetings

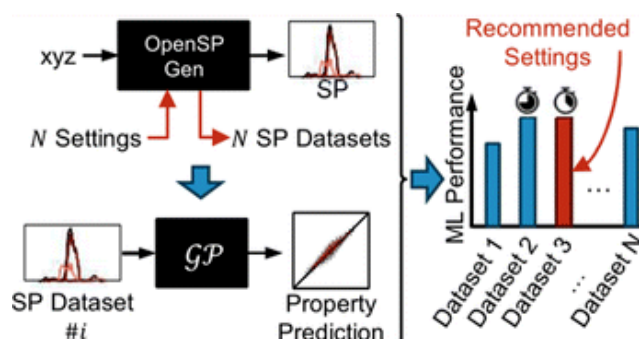
September 18: Thrust 2 (3 pm ET)
 September 24: Crosscut 1 (3 pm ET), Center-Wide Team (4 pm ET)
 September 25: Testbeds/Thrust 3 Practice for NSF Site Review (3 pm ET)
 September 29: Crosscut 1 (4 pm ET)
 September 30: Project 2.1 (3:30 pm ET)
 October 1: Thrust 1/2 Practice for NSF Site Review (3 pm ET), Crosscut 2 (4:30 pm ET)
 October 6: Project 3.1 (3 pm ET)
 October 9: Thrust 3 (3 pm ET)
 October 15: Crosscut 3 (3 pm ET)
 October 16: Convergent Research Leadership (3 pm ET)

New Publications

Open-Source Generation of Sigma Profiles: Impact of Quantum Chemistry and Solvation Treatment on Machine Learning Performance

Fathya Y. M. Salih, Dinis O. Abranches, Edward J. Maginn, and Yamil J. Colón*

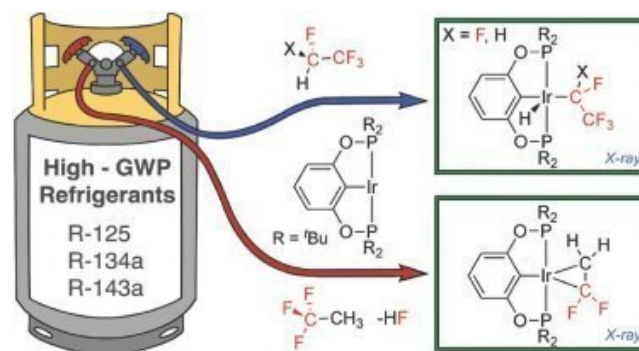
[Read the article](#)



Identifying Reactivity Differences of Two-Carbon-Atom-Based Legacy Refrigerants at Group 9 Metal Pincer Complexes

Luc A. Mauro, Isabelle A. Herlinger, Shane J. Hall, Russell P. Hughes,* Roger E. Cramer, Lisa A. Fredin,* and David A. Vici*

[Read the article](#)



Click [here](#) to see a list of all EARTH peer-viewed publications.

Please use the following statement in your publication acknowledgements.
 “This research is based upon work supported by the National Science Foundation under award number **ERC-2330175** for the Engineering Research Center EARTH.”

Congratulations to our Inaugural 2025 Seed Grant Awardees

These seed grants will provide up to 12 months of support beginning in Year 2. They are intended to help the selected teams generate preliminary data for future federally funded proposals. The awarded projects align with EARTH’s Convergent Research Thrusts and

reflect the collaborative, interdisciplinary spirit of our Center. *Please join us in congratulating our 2025 Seed Grant recipients!*

Prof. Dietrich Earnhart, KU, and **Prof. Joseph Kantenbacher**, USD, for the proposal *Creative Technical Solutions in the Face of Currently Unmonitored Compliance by Field Technicians*

Prof. Yamil Colón, ND, for the proposal *Discovering New Fluid Refrigerants for Use in Data Centers*

Prof. Alexander Dowling, ND, and **Prof. Xu Han**, ND, for the proposal *System Design and Optimization of Cascaded Refrigeration Systems*



Prof. Dietrich
Earnhart



Prof. Joseph
Kantenbacher



Prof. Yamil Colón



Prof. Alexander
Dowling



Prof. Xu Han

Upcoming Webinar: October 7 at 2 pm ET

Join us for the next session in the 2025 EARTH Webinar Series featuring **Professor Eckhard A. Groll**, Reilly Distinguished Professor of Mechanical Engineering, William E. and Florence E. Perry Head of Mechanical Engineering, and Co-Director of the Center for High Performance Buildings at Purdue University. His presentation, *Improving Vapor Compression System Efficiency through Advanced Vapor Compression Technologies*, will explore cutting-edge approaches to enhancing HVAC&R system performance. **Registration is required to attend via Zoom.** This is a valuable opportunity to learn from one of the foremost leaders in mechanical engineering and sustainable building technologies.



[Register here](#)

Click [here](#) for the full list of our 2025 EARTH Webinar Series recordings.

We Appreciate Our Postdocs!

In celebration of [Postdoc Appreciation Week](#), we proudly recognize the invaluable contributions of our postdoctoral researchers. We are grateful for their dedication, innovation, and leadership in advancing EARTH's mission.



Dr. Souvick
Biswas, **UH**



Dr. Jake
Casselman, **UH**



Dr. Shankar
Gairhe, **USD**



Dr. Daniel González
Pérez de Madrid, **UH**



Dr. Yuheng
Luo, **UH**



Dr. Koushik
Mondal, **UH**



Dr. Nicole
Murray, **UH**



Dr. Thomas
Poskin, **KU**



Dr. Komal
Yadav, **UH**



Dr. Andrew
Yancey, **KU**

ASHRAE Society Scholarships

Due December 1

Presidents Scholarship • Engineering Technology Scholarships •
Undergraduate Engineering Scholarships • University-Specific Scholarships •
ASHRAE Society Chapter Scholarships • Regional Scholarships

• Engineering Workforce Development • Outreach



University of Kansas graduate students **Julia Espinoza** (left) and **Emmanuel Ababio** (right) represented the EARTH Council of Students at the KU School of Engineering, Engineering Fair on August 17.

Research Experience for Teachers (RET)

We're proud to celebrate the successful completion of the first year of our RET program. Click the links (right) to learn how educators participated in immersive summer research

UMD Provides "Cool"
Research Experience for Two
School Teachers

experiences at the University of Maryland, the University of Notre Dame, and the University of Kansas to help shape the future of HVACR education.

Ivy Tech professors amp up their AC game at Notre Dame

“There’s a lot of math in HVAC”

Empowering K–12 Students Through Engineering Comics

[EARTH Man is back for another adventure!](#) This month’s comic bookmark continues his mission to explore sustainability and HVACR, helping students connect engineering concepts to the world around them. As the first issue to be printed and shared in KC-metro libraries, it marks an exciting step in bringing these stories into classrooms and communities.

Do you have news or an accomplishment you’d like to share?
Email [Jessica Tami](#) to be featured in the next newsletter!

Connect with 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 as well as secure U.S. leadership in workforce development and manufacturing.

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