

SUMMER 2024

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UNIVERSITY
OF WYOMING

School of
Energy Resources

QUARTERLY NEWSLETTER

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ABOUT THE SCHOOL OF ENERGY RESOURCES

The University of Wyoming (UW) School of Energy Resources (SER) was created in 2006 to enhance the University's energy-related education, research, and engagement. SER directs and funds cutting-edge energy research and technology development, which integrates with the formulation and conduct of academic programs at UW and bridges academics and industry through targeted engagement efforts. The partnerships formed between academics and industry ensure programs are relevant, current, and deliver impact and high value to stakeholders and the State.

Since its inception, SER has maintained flexibility in its focus and structure to meet the changing needs of Wyoming's energy industries and the State's economy—which is now more critical than ever.

This quarterly newsletter highlights SER's significant achievements from May 2024 through July 2024, in academics, research, newly emerging areas of focus, and engagement to keep UW and Wyoming at the forefront of the energy sector.



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ACADEMICS

School of Energy Resources Celebrates Class of 2024 at Spring Commencement Ceremony

The School of Energy Resources (SER) celebrated the graduation of eleven students in the spring 2024 commencement ceremony at the University of Wyoming.

Festivities acknowledged the achievements of students completing a Bachelor of Science degree in Energy Resource Management and Development (ERMD), a minor in Energy Resource Management (ERM), as well as students that have earned a certificate in Land Administration.

Jacob Burns, of Wheatland, Wyo., **Micah Brandt** of Denver, Colo., earned their ERMD degrees in the Professional Land Management (PLM) concentration. **Read Sunn** of Wasilla, Alaska, **Hallie Jette** of Buffalo, Wyo., **Russell Ferrell**, of Green River, Wyo., and **Tyler Schlagel** of Cheyenne, Wyo. earned their ERMD degrees in the Energy and Environmental Systems (EES) concentration. Schlagel also earned a certificate in Land Administration.

Students expanding their education and complementing their degree with additional programs offered through SER include **Sean Hartigan** of Berthoud, Colo., majoring in Construction Management; **Sloan Monks** of Franktown, Colo., majoring in Petroleum Engineering; and **Hailey Allison** of Green River, Wyo., majoring in Geology. All three students picked up the minor in ERM. **Katie Odom** of Medford Ore., earned SER's Land Administration certificate.

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Pictured: SER Academic Director Kami Danaei, SER Professor of Law Tara Righetti, SER Executive Director Holly Krutka, Hallie Jette, Jacob Schneider, Tyler Schlagel, Read Sunn, Russell Ferrell, and Micah Brant

UW's Righetti Appointed Chair of Federal CCUS Permitting Task Force

The University of Wyoming's **Tara Righetti** will serve a two-year term as chair of the Carbon Capture, Utilization and Sequestration (CCUS) Permitting Task Force for Federal Lands and Outer Continental Shelf.

Righetti, a UW School of Energy Resources (SER) professor of law and the Occidental Chair in Energy and Environmental Policies, was appointed as a task force member in April and was among seven representatives from Wyoming selected to serve on the committee. She was named chair for her specialized knowledge in subsurface matters and pore space issues.

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ACADEMICS

SER's Academic Director Kami Danaei Selected for Leadership Wyoming Class of 2025

School of Energy Resources (SER) Academic Director **Kami Danaei** is one of 42 Wyoming citizens selected for the Leadership Wyoming Class of 2025.

Leadership Wyoming is the foremost organization for bringing together Wyoming leaders and highlighting important issues facing the state.

Launched in 2000, the program is designed to serve as an educational forum for community leaders around Wyoming to mature their leadership abilities, broaden their perspectives and perceptions, and to work collaboratively in order to cultivate a deeper understanding of the diverse sectors within the state.

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Academics Highlights

- Energy Resource Management and Development student **Ainsley Harris** was awarded the Bill Goodin Scholarship through the Denver Association of Professional Landmen (DAPL). In addition to the \$3,000 scholarship, she will also receive free membership to DAPL.



- Students in the ERMD Program participated in the Energy Field Course Tour led by Professional Land Management Program Director **Kristen Pritchett**. Students visited multiple industry sites throughout the state to learn first-hand about operations.



- The research group led by the John and Jane Wold Centennial Chair in Energy and SER Professor of Geology **John Kaszuba** traveled to Casper to visit the Wold Foundation. Student **Emily Clinkscapes** gave a talk about her experimental work on how CO₂-water-rock interactions effects the porosity and permeability of the Minnelusa Formation.



- Graduate student **N. Sloan Dworion** in the Department of Geology and Geophysics completed her thesis, "Petrogenesis of Gold and Copper at the CK Gold Project along the Southeastern Flank of the Laramie Range." Dworion's research was funded through the Center for Economic Geology Research.



RESEARCH

Wyoming Integrated Test Center

UW SER Hosts Technology Showcase at Wyoming Integrated Test Center

The University of Wyoming's School of Energy Resources (SER) hosted carbon capture, utilization and storage (CCUS) technology and project developers – with potential carbon capture customers – at a Technology Showcase at the Wyoming Integrated Test Center (ITC).

With oversight from SER, the ITC is a public-private partnership dedicated to fostering next-generation energy technology. The facility provides individual test bays for researchers to conduct real-world assessments of CCUS technologies using actual coal-based flue gas from Basin Electric Power Cooperative's Dry Fork Station near Gillette.

The event provided Powder River Basin coal users, other private entities and representatives of the U.S. Department of Energy the opportunity to learn about different CCUS technologies being tested at the facility and meet with the companies developing them.

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Jurisprudence of Underground Law and Energy Research Group

UW SER Receives Sloan Foundation Award for Circular Economies and Critical Minerals Study

The University of Wyoming's School of Energy Resources (SER) is the recipient of a \$745,632 award from the **Alfred P. Sloan Foundation** to conduct interdisciplinary research exploring the legal, social and environmental justice considerations associated with the buildout of a domestic U.S. supply chain for critical minerals and rare earth elements.

Focusing on opportunities and challenges arising from the development of a circular economy in which critical minerals and rare earth elements are recovered from existing waste streams within the power generation and hard-rock mining sectors, the research aims to enhance the knowledge and understanding of policymakers, scholars and the public on the possibility of developing a more sustainable critical minerals and rare earth elements economy through existing waste streams.

Leading the project as the principal investigator is **Madeleine Lewis**, an associate research scientist for law and policy.



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School of Energy Resources Hosts Workshop on Pore Space Valuation

The Jurisprudence of Underground Law and Energy (JOULE) research group hosted an informative workshop in June to investigate valuation methodologies for pore space in carbon capture, utilization and storage (CCUS) projects as part of a study entitled, "Understanding Pore Space Values: A Technical, Legal and Economic Analysis of Valuation Methodologies and Contractual Structures."

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3D Visualization Center

UW Hosts Second Immersive Reality Training Conference for Wyoming Innovation Partnership

The University of Wyoming hosted an immersive reality training conference as part of the Wyoming Innovation Partnership (WIP). The three-day event brought together educators from Wyoming community colleges and secondary education institutions, as well as workforce service professionals from across the state to learn about integrating virtual reality (VR) and augmented reality (AR) resources.

Led by **Kyle Summerfield**, program manager for the 3D Visualization Center in UW's School of Energy Resources (SER), the VR subcomponent of the WIP consortial infrastructure program works to expand the capacity of Wyoming's higher education institutions to integrate VR technology into courses and programs; develop and create VR applications; and coordinate the deployment of these resources to maximize return on investment.

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New Research Centers of Excellence

UW SER Launches New Energy Engagement, Leadership and Careers Program

A new program dedicated to community engagement, leadership and workforce development for energy-producing and energy-adjacent districts in Wyoming has been launched by the University of Wyoming's School of Energy Resources (SER).

The Energy Engagement, Leadership and Careers (ELC) Program will work toward the development of a skilled energy workforce; engage industry stakeholders; empower communities by incorporating local knowledge into program development and research; advance social science capacity building; and inspire the next generation of leaders through innovative education.

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New Center of Excellence in Subsurface Energy and Digital Innovation Opens at UW

A new center dedicated to innovative research and finding solutions to energy development challenges in Wyoming is opening at the University of Wyoming.

UW's School of Energy Resources (SER) – in partnership with the College of Engineering and Physical Sciences – is establishing the Center of Excellence in Subsurface Energy and Digital Innovation (SEDI).

SER supports research through its Centers of Excellence model, which facilitates the investigation of energy issues across disciplines. SER will provide seed funding to the new SEDI over five years while it works to establish itself as a leading research center at the intersection of energy solutions and digital technology.

Soheil Saraji, an associate professor of energy and petroleum engineering, will direct the new center.

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Center for Carbon Capture and Conversion

CCCC Upgrade Bricks on Demonstration House with Higher Coal Char Content

The Center for Carbon Capture and Conversion (CCCC) updated the bricks on the char-brick demonstration house to test the second generation bricks.

The coal-derived brick house project has been developed under the direction of **Dr. Kam Ng**, the Hoy Engineering Fellow and Provost's Term Professor of Civil and Architectural Engineering and Construction Management.

The research team removed the first generation coal-derived bricks that have been on the house for the past two years and replaced them with the second iteration of the bricks, which have a higher content of coal char.

The demonstration houses allow for performance tests and monitoring of the bricks in comparison to their conventional clay brick counterparts.



Research Highlights

- Research Professional **Sarah Buckhold** in the *Hydrogen Energy Research Center (H₂ERC)* was selected through a competitive application process to be a member of the 2024 RECS cohort.
- The *Center for Energy Regulation and Policy Analysis (CERPA)* release two more papers in its nuclear white paper series. Paper #2 explores the economic prospects for nuclear component manufacturing in Wyoming, while paper #3 explores the uranium extraction process and the contributing factors of Wyoming uranium production.



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RESEARCH
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- Research Experience in Carbon Sequestration (RECS) completed its 20th year in partnership with The *Center for Economic Geology Research (CEGR)*. SER led field courses near Laramie and Newcastle, and visits to the Integrated Test Center and Dry Fork Station. Courses were led by SER faculty, administration, and research professionals, including **Tara Righetti, Scott Quillinan, Fred McLaughlin, Erin Phillips, Selena Gerace, and Charles Nye**.



OUTREACH

UW's School of Energy Resources Launches 'Energy Frontier' Podcast

The University of Wyoming School of Energy Resources (SER) has launched a new podcast series, titled "Energy Frontier: The Wyoming Landscape," which brings together academic researchers, industry professionals, students, policymakers and more to explore energy topics, including SER's research efforts and developing Wyoming projects.



The inaugural episode – hosted by **Kara Fornstrom**, director of SER's Center for Energy Regulation and Policy Analysis – introduces listeners to the permanent podcast host, SER Executive Director **Holly Krutka**. In the pilot episode, listeners can learn more about Krutka, SER and the goals of launching the podcast.

LISTEN TO EPISODES >

UW's SER Launches 'Energy Roadshow'

The University of Wyoming School of Energy Resources (SER) is launching an "Energy Roadshow" public outreach series.

The series is intended to provide a platform for community members across the state to learn about different research and energy projects led by SER; specific projects going on in the area; and general information about the energy industry in Wyoming.

The Energy Roadshow is planned to become a permanent feature in the annual SER events calendar.

To learn more about upcoming meetings or to request a meeting in your area, email SER Director of Outreach **Christine Reed** at christine.reed@uwyo.edu.



Outreach Highlights

- Please stay up to date on our upcoming events by checking the **EVENTS CALENDAR >**



Looking for ways to stay connect to SER? Connect SER Director of Outreach Christine Reed at christine.reed@uwyo.edu | (307) 766-6708

- Representatives from SER attended a public outreach meeting spearheaded by Tallgrass to provide information on carbon storage to the general public. Energy Resource Management and Development (ERMD) students **Gwen Andela** and **David Meraz Ordonez** attended the meeting as part of their summer internships with Pacer Energy and Tallgrass, respectively.



PHILANTHROPIC SUPPORT

Tallgrass Donates \$250,000 to Advance Research at UW School of Energy Resources

A \$250,000 charitable gift from Tallgrass will be doubled by state of Wyoming matching funds and used to create a CO₂ Storage Excellence Fund at the University of Wyoming School of Energy Resources (SER).

The excellence fund will provide the essential support to advance existing efforts in carbon capture, utilization and storage from research and demonstration to commercialization, thus benefiting the future Wyoming economy.

Acknowledgment of Tallgrass' gift is recognized in UW's Energy Innovation Center student study lounge, located on the first floor. Formal recognition of the gift was celebrated in a ribbon-cutting ceremony to dedicate the space.

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Major Gift to UW School of Energy Resources Supports Nuclear and Renewable Energy

A major gift to the University of Wyoming's School of Energy Resources (SER) will support Wyoming-focused instruction, outreach and applied research on new means of energy production and technologies specifically in the areas of nuclear, wind, solar and other renewable-related energy.

The \$1 million gift from **Paul and Judy Lerwick** – which will be matched by the state of Wyoming – will be endowed to create the Wyoming NOW (nuclear, onshore wind and more) Fund.

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School of Energy Resources Receives Major Gifts Supporting Nuclear Energy

Two major gifts to the School of Energy Resources (SER) will kickstart private support for nuclear energy education and student engagement.

The **Christine A. Barry** Nuclear Energy Student Enrichment Fund was recently established as an endowment to support students in the long-term with opportunities such as covering travel costs, conference attendance, special camps, summer programs, field tours, and other experiential learning opportunities.

Similarly, the **Rita Meyer** Nuclear Energy Excellence Fund was established as an expendable fund to provide students with immediate resources in support of educational opportunities both inside and outside the classroom.

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MAKE A GIFT

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