

July | 2024

SER RECEIVES SLOAN FOUNDATION AWARD FOR CIRCULAR ECONOMIES AND CRITICAL MINERALS STUDY

The University of Wyoming's School of Energy Resources (SER) is set to be 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.



Madeleine Lewis

Leading the project as the principal investigator is **Madeleine Lewis**, an associate research scientist for law and policy in the newly formed Jurisprudence of Underground Law and Energy (JOULE) research group. The group focuses on substantive legal research related to subsurface utilization and energy projects under the direction of **Tara Righetti**, an SER professor of law and Occidental Chair in Energy and Environmental Policies.



Tara Righetti

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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).



Soheil Saraji, an associate professor of energy and petroleum engineering, will direct the new center. SEDI will be a groundbreaking hub for advancing energy solutions by integrating cutting-edge digital technologies.

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HIGHLIGHTS

Research Centers of Excellence

- Researchers **Autumn Eakin, Bob Gregory** and **Tim Fischer** in the *Center for Economic Geology Research (CEGR)* went on a field tour of Wyoming Bentonite deposits.
- Research Experience in Carbon Sequestration (RECS) completed its 20th year in partnership with *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.**



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.



To submit news and updates email: Christine.reed@uwyo.edu



UNIVERSITY OF WYOMING

School of Energy Resources

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.

Erin Phillips, who will take on a new role as director of cross-cutting programs, and Senior Research Professional **Selena Gerace**, who will oversee the Energy ELC Program, will lead the new program.

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UW RESEARCHERS EXAMINE ECONOMIC EFFECTS ON TECHNOLOGICAL ADVANCEMENTS OF BLUE HYDROGEN

A new analysis by University of Wyoming researchers examines the impacts of current federal economic incentives on large-scale blue hydrogen production technologies and estimates the expected outcomes in long-term expenses as those hydrogen production pathways evolve.

The research, titled "Technological Evolution of Large-Scale Blue Hydrogen Production Toward the U.S. Hydrogen Energy Earthshot," was led by **Haibo Zhai**, the Roy and Caryl Cline Distinguished Chair in Engineering and a professor in the UW College of Engineering and Physical Sciences. The study appears in the prestigious and highly cited journal *Nature Communications*. Zhai's UW Ph.D. student, **Wanying Wu**, was lead author.

The new UW study estimates the economic benefits from learning experience by deploying large-scale blue hydrogen projects; evaluates both the 45Q and 45V tax credits; and compares the credits' economic role in promoting blue hydrogen production toward the Hydrogen Energy Earthshots Initiative.

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ERIN PHILLIPS



SELENA GERACE

HIGHLIGHTS

Research Cont.

- The research team in **H₂ERC** procured a Steam Methane Reformer (SMR) for hydrogen production, which Engineering Procurement & Construction for H₂ (EPC LLC) purchased for the project 'Integration of Produced Water Thermal Desalination and Steam Methane Reforming for Efficient Hydrogen Production.'



- **H₂ERC** officially started the ARPA-E project focused on producing hydrogen from iron-bearing rocks. Led by **Charles Nye**, the project partners



with the Bureau of Economic Geology to combine experimental and rock characterization strengths.

- **The Jurisprudence of Underground Law and Energy (JOULE)**

research group hosted visiting researchers **Louis de Fontenelle** and **Anais de Fontenelle** from the University De Pau Et Des Pays De L'adour



(UPPA) to collaborate on projects with SER Professor **Tara Righetti**, including a quarterly seminar comparing carbon capture development in the United States and the EU, and a joint conference.

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.

With an emphasis on applied research to benefit Wyoming, the fund is designed to recruit, support and retain talented students, staff and faculty members at UW; to provide opportunities for professional development; and to bolster researchers who are conducting work relevant to Wyoming and who demonstrate a dedication to positive student engagement.

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SCHOOL OF ENERGY RESOURCES HOSTS WORKSHOP ON PORE SPACE VALUATION

The School of Energy Resources (SER) 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.”

Funded by the Department of Energy (DOE) and led by SER Professor of Law and UW's Occidental Chair in Energy and Environmental Policies **Tara Righetti**, the project aims to develop guidance for determining contract structures, relative compensation, and valuation methodologies for pore space on federal and private on-shore lands in the U.S.

The workshop brought together an impressive array of leaders in carbon sequestration from industry, academia and government where the research team presented their findings to date.

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HIGHLIGHTS

Outreach

- **Selena Gerace** in the *Energy Education, Leadership, and Careers (ELC) Program* attended a workshop hosted by the Inter-agency Working Group on Coal and Power Plant Communities in Washington, D.C.
- SER Research Professional **James Amato** in the *3D Visualization (3D Viz) Center* presented an overview of the GIS and UAS programs and server structure to SER staff. The presentation was recorded and is available for review by all SER staff.
- The *3D Viz Center* purchased a Harris Aerial HX8 heavy-lifting enterprise drone and will install a hyperspectral sensor which will be used for critical mineral exploration, coal quality characterization, and indirect methane monitoring.



Outreach

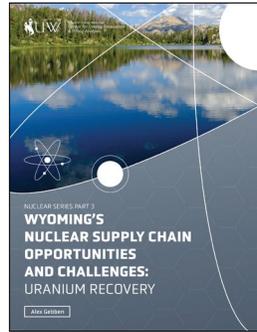
- SER Senior Director of Research **Scott Quillinan** and Senior Director of Corporate Engagement **Angela Ver Ploeg, CEGR** Director **Fred McLaughlin** and O&G Program Manager **Tim Fischer**, as well as Executive Director **Holly Krutka** represented SER at Cheyenne Frontier Days.



CERPA RELEASES WHITE PAPER EVALUATING URANIUM RECOVERY IN WYOMING

The Center for Energy Regulation and Policy Analysis (CERPA) in the School of Energy Resources (SER) released a new white paper exploring the uranium extraction process and the contributing factors of Wyoming uranium production.

Authored by **Alex Gebben**, an energy economist in the UW Center for Business and Economic Analysis, the paper is the third in a series of six white papers exploring and evaluating different aspects of developing an integrated nuclear industry in Wyoming.



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CERPA RELEASES NEW WHITE PAPER HIGHLIGHTING THE HISTORY OF GREATER SAGE-GROUSE MANAGEMENT IN WYOMING

The Center for Energy Regulation and Policy Analysis (CERPA) in the School of Energy Resources (SER) released a new white paper highlighting the history of Greater Sage-Grouse management in Wyoming.

Authored by **Esther Wagner**, a senior research professional in CERPA, the paper explores the history of Wyoming's innovative efforts to manage and protect the Greater Sage-Grouse population while simultaneously supporting economic development and land use activities, as well the collective efforts of Wyoming stakeholders to preclude the bird from being listed as an endangered species.



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SER WELCOMES DAWSON KLEUSNER TO CERPA

The School of Energy Resources is pleased to announce the addition of **Dawson Kluesner** to the Center for Energy Regulation and Policy Analysis (CERPA). As a research professional, he will apply his energy economic training to provide policy support to lawmakers and analyze economic impacts on other topics under investigation in the center. [Continue Reading >>>](#)



HIGHLIGHTS

Outreach Cont.

- SER Executive Director **Holly Krutka** represented the School of Energy Resources at the Governor's Townhall meeting in Sheridan.

- SER Executive Director **Holly Krutka** toured the field research projects of the agricultural extension office in Sheridan.



- 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.



- The SER outreach team of **Christine Reed** and **Sabrina Kaufman** hosted a booth



at the Petersen Asphalt Conference in Laramie to showcase the coal-derived asphalt under development in the *Center for Carbon Capture and Conversion (CCCC)*.

General

- Congratulations to Project Specialist **David Lucke** on the birth of his son!



SCHOOL OF ENERGY RESOURCES WELCOMES TIM FISCHER AS OIL AND GAS PROGRAM MANAGER

The School of Energy Resources (SER) is pleased to welcome **Tim Fischer** as the Oil and Gas Program Manager in the Center for Economic Geology Research (CEGR).



In his new role, Fischer will oversee the oil and gas-related research projects in CEGR — including the Mowry Shale Project — and supervise the team of research professionals assigned to those projects. He will also support important communication channels with SER’s partner organization, the Enhanced Oil Recovery Institute, to enrich collaborative studies in the state.

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SCHOOL OF ENERGY RESOURCES EXPANDS ENERGY ENGAGEMENT, LEADERSHIP AND CAREERS PROGRAM WITH TWO NEW HIRES

The School of Energy Resources (SER) is pleased to welcome **Pallavi Pokharel** and **Madison Mankin** to the research team in the new Energy Engagement, Leadership and Careers (ELC) Program.



PALLAVI POKHAREL

The newly launched research program is dedicated to community engagement, leadership, and workforce development for energy-producing and energy-adjacent districts in Wyoming.



MADISON MANKIN

Pokharel and Mankin, who will hold a joint appointment with the Center for Economic Geology Research (CEGR) as research professionals, will work to support social science research and workforce development efforts in the Energy ELC Program under the leadership of **Selena Gerace**.

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ENERGY JOKE



IMPORTANT DATES

- **NETL/FECM Carbon Management Project Update meeting - Pittsburgh**
August 5-9, 2024
- **ERC Director's Reports Due**
August 9, 2024
- **ERC Reporting Director's Slides Due**
August 16, 2024
- **Rockies Petroleum Conference**
August 21-23, 2024
- **Energy Resources Council Meeting**
August 23, 2024
- **First Day of Classes**
August 26, 2024
- **Labor Day - Office Closed**
September 2, 2024
- **Welcome BBQ Potluck**
September 6, 2024
- **Wyoming's Energy Future Symposium**
September 12, 2024
- **Distinguished Speaker Series Presentation- Christi Barry**
September 13, 2024
- **Subsurface BBQ**
September 20, 2024
- **Distinguished Speaker Series Presentation- Reza Barati**
September 27, 2024

SER BIRTHDAYS!

JULY

Carrie Ver Burg, July 24

Reminder: If you want your birthday recognized, please update your information with Kristi Russow at krussow@uwyo.edu.

