

# THE Core SAMPLE

Internal Newsletter of the School of Energy Resources

May | 2023

## UW LANDS \$40.5M FROM DEPARTMENT OF ENERGY FOR NEW CARBONSAFE PROJECT

The U.S. Department of Energy (DOE) has selected UW's School of Energy Resources (SER) to receive a \$40.5 million award over three years to support the development of a new and expanded large-scale, commercial carbon storage project in the Greater Green River Basin.



The project will develop the Sweetwater Carbon Storage Hub in collaboration with Frontier Carbon Solutions LLC. This is the largest single competitive award in UW history.

In addition to the federal funding from DOE, the project will receive \$10.1 million in cost sharing, bringing the total project to \$50.6 million.

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## UW SCHOOL OF ENERGY RESOURCES REQUESTS PROPOSAL FOR MOWRY PROJECT PHASE II

The UW School of Energy Resources is seeking proposals from current UW faculty members to further investigate the Mowry Shale in the Powder River Basin as part of the research project's phase II.

The invitation comes nearly a year after an initial Request for Proposals (RFP) was released to study the potential of the tight, hydrocarbon bearing formation. During the Summer of 2022, SER selected seven Phase I projects to increase the understanding of the Mowry Shale, with the aim of improving production and increasing reserves.

To build upon this initial work, SER is again seeking new proposals in two areas of interest. The first is to recruit additional projects in disciplines not covered in the first round of funding. The second, seeks to continue and expand the existing projects.

The deadline for proposal submissions is June 15. The selected projects will be notified by July 1.

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## HIGHLIGHTS

### Research Centers of Excellence

- Project Manager John Jiao in the *Center for Economic Geology Research (CEGR)* led a group of representatives from the Wyoming Department of Environmental Quality on a field trip to look at outcrops of Wyoming carbon storage formations. The field trip started at the outcrop of the Casper Formation east of Laramie, stopped at the north of Medicine Bow Town to overview the Frontier, Mowry, Chugwater, and Tensleep sequence.

The field trip was completed at the outcrop of the Chugwater, Sundance and Cloverly formations in the Alcova Reservoir.



- Research Scientist Lily Jackson in *CEGR* gave a presentation on May 16 at the Geology of Ecuador Workshop at Escuela Politecnica Nacional (EPN) in Quito, Ecuador. The presentation was titled "Critical Mineral and REE Needs and Opportunities."



- Research Scientist Phil Black in the 3D Visualization Center earned his certification as a Unity 3D Professional Artist.



To submit news and updates email: [Christine.reed@uwyo.edu](mailto:Christine.reed@uwyo.edu)



UNIVERSITY OF WYOMING

School of Energy Resources

## ENERGY RESOURCE MANAGEMENT AND DEVELOPMENT STUDENTS CONTINUE ANNUAL VISIT TO WOGCC

Students in the School of Energy Resources (SER) Energy Resource Management and Development (ERMD) degree



program, once again, traveled to Casper, Wyo. in order to visit the Wyoming Oil and Gas Conservation Commission (WOGCC) for the April session.

An annual event, the WOGCC has opened its doors to students at the University of Wyoming for nearly a decade so that they may learn first-hand the duties and operations of the organization, sit in on examiner hearings, tour the facility, as well as observe the full Commission hearings.

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## SCHOOL OF ENERGY RESOURCES CELEBRATES SPRING CLASS OF 2023 GRADUATES

The School of Energy Resources is pleased to celebrate the spring graduates in the Class of 2023. With an increasingly growing program, this semester nine students in the Energy Resource



Management and Development (ERMD) degree program are walking at the spring commencement ceremony on Saturday, May 13.

The ERMD program prepares students for essential roles in industries such as oil and natural gas, renewable energy, and mining. Students take a core curriculum focusing in business, natural resources, law and policy, project management, and rangeland ecology and watershed management. The program offers two concentrations for specialization, Professional Land Management (PLM) or Energy and Environmental Systems (EES).

2023 PLM graduates include **Montgomery Hughes**, **Dayton Reese**, **Lily Simon**, **Michael Fenton**, and **Elijah Vigil**. EES graduates include **Molly Murnane**, **Shane Heavin**, **Kieran McMullen**, and **Christopher Welch**. Students graduating with a minor include **Lander Stone** and **Benjamin Wood**.

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## HIGHLIGHTS

### Research Cont.

- Program Manager **Erin Phillips** in *CEGR* gave a presentation to miners in the Powder River Basin on critical minerals along with Research Scientist **Bob Gregory** and UW geology students.

- Arranged by the *Nuclear Energy Research Center (NERC)* UW students **Dillon**



**McLean** (chemistry) and **Milana Wolff** (computing) attended Idaho National Laboratory as part of the Nuclear Education Skills and Technology (NEST) Small Modular Reactor program.

### Academics

- College Relations Rep. **Karolina Klatka** traveled with *CEGR* research scientists **Charles Nye** to provide a tour and educational discussion to students from Newcastle High School. The group toured Dry Fork Mine and the Integrated Test Center (ITC).



- **Karolina Klatka** got into grad school!! Her last official day at SER is June 5, but she will remain during the summer to help cross-train a replacement.



- Student in the ERMD degree completed their capstone projects, presenting on hydrogen and nuclear related issues in Wyoming.

## UW'S SARAJI PUBLISHES BOOK EXAMINING BLOCKCHAIN TECHNOLOGY IN OIL AND GAS INDUSTRY

**Soheil Saraji**, a University of Wyoming associate professor of energy and petroleum engineering, recently co-wrote a book examining blockchain technology and its applications in the energy industry.

The book, "Sustainable Oil and Gas Using Blockchain," was written in collaboration with **Si Chen**, president of Open Source Strategies Inc., and is part of the "Lecture Notes in Energy Series" published by Springer Nature.

Focusing on the development of a sustainable oil and gas industry, the book delves into the role of blockchain in sustainable energy development and the technical and regulatory challenges of applying this technology.

In addition to his faculty appointment in the College of Engineering and Physical Sciences at UW, Saraji is the co-director of the Hydrocarbons Research Laboratory and an adjunct professor at SER.

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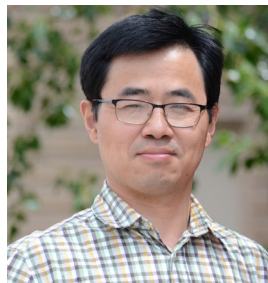
## UW RESEARCHERS EXAMINE COOLING POWER PLANTS WITH BRACKISH GROUNDWATER

A new analysis led by a University of Wyoming researcher shows that brackish or salty groundwater has the potential to replace fresh water to cool coal- and natural gas-fired power plants and strengthen resilience in the energy infrastructure, although there's a cost associated with doing so.

With freshwater supplies threatened due to drought, climate change and rapid socioeconomic growth, water competition is increasing between the electric power sector and other sectors. While transitioning to a low-carbon energy future, decarbonization of fossil fuel-fired power plants by carbon capture and storage would significantly increase water consumption and exacerbate water competition. Water challenges drive power plant operators to explore alternative water sources.

The research appears in the journal *Nature Water* and was led by **Haibo Zhai**, UW's Roy and Caryl Cline Distinguished Chair in the College of Engineering and Physical Sciences and SER adjunct professor.

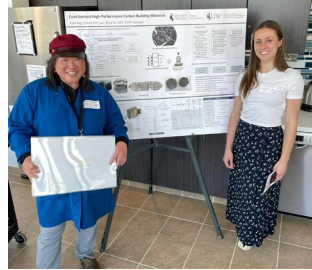
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## HIGHLIGHTS

### Academics Cont.

- Academics, in partnership with the *Center for Carbon Capture and Conversion (CCCC)* provided a char brick making demonstration to students as part of the Women in STEM conference.



### Outreach

- SER Senior Director of Research **Scott Quillinan** presented at the Wyoming Energy Authority's 2023 Next Frontier Energy Summit on the work being conducted on the Mowry Shale in Wyoming.



- SER Executive Director **Holly Krutka**, **Scott Quillinan**, and SER Director of Outreach **Christine Reed** attended the groundbreaking ceremony at the ITC for projects led by Membrane Technology and Research (MTR) and Kawasaki Heavy Industries (KHI) and its partner, Japan Carbon Frontier Organization (JCOAL).



- **Holly Krutka** and **Randall Luthi**, Chief Energy Advisor to Gov. Mark Gordon, spoke at a CCS 101 Webinar hosted by the Wyoming Business Council.

## FORMER DOE DIRECTOR OF CARBON TRANSPORT AND STORAGE JOINS UW SCHOOL OF ENERGY RESOURCES

**John Litynski**, the U.S. Department of Energy's (DOE) former director of carbon transport and storage in the Office of Fossil Energy and Carbon Management, will join the University of Wyoming's School of Energy Resources (SER) as a senior adviser.



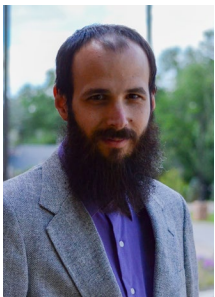
Litynski, who has over 25 years of experience working on environmental compliance, carbon sequestration and technology development for the energy sector, will help guide SER-led carbon-management strategies, including developing objectives and implementation plans for research and demonstration programs.

Drawing on his prolific career and experience, Litynski will support SER leadership and help strengthen SER research programs — especially the Center for Energy Regulation and Policy Analysis (CERPA) and the Center for Economic Geology Research (CEGR) — as they advance toward commercial-scale carbon storage deployment and other energy technologies.

He will further assist in statewide support and external engagement for SER research projects and identify new opportunities for Wyoming.

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## SER'S KYLE SUMMERFIELD LEADS VIRTUAL REALITY INTEGRATION IN EDUCATION THROUGH WYOMING INNOVATION PARTNERSHIP



**Kyle Summerfield**, the program manager of the 3D Visualization Center in the School of Energy Resources (SER), has been leading virtual reality (VR) and augmented reality (AR) integration into the state's community colleges as part of the Wyoming Innovation Partnership (WIP).

In May, Summerfield hosted an extensive three-day introduction to object-oriented program development by using VR hardware, software, and data capture technologies. The workshop at UW provided instruction on tracking paradigms with which educators would need to be familiar, 360-degree photography, photogrammetry (creating 3D models from just photos) and structured light scanning. These tools enable the user to create highly accurate reproductions of real-world objects or environments.

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## HIGHLIGHTS

### Outreach Cont.

- Holly Krutka and Scott Quillinan competed in the Two Fly Foundation 2023 fly fishing tournament in near Casper.



## IMPORTANT DATES

- **Understanding Ukraine's Energy Crisis and a Path Forward Webinar**  
June 20, 2023
- **Cardiff University/H<sub>2</sub>ERC Webinar 3**  
June 22, 2023
- **Fourth of July - Office Closed**  
July 4, 2023
- **August ERC Meeting**  
August 17-18, 2023



## SER BIRTHDAYS!

**MAY**

Kami Danaei, May 8

