

Board of Trustees Update: March 2023

SER's Mission: Energy-driven economic development for Wyoming

SER Academics: The SER Academics program continues to focus on recruiting, evaluating its offerings and supporting student success.

- SER's two new certificates (on CCUS and Land Administration – both are interdisciplinary and are the result of collaboration across campus) – continue to be advanced so students can enroll for the fall semester
- Academic Director Dr. Kami Danaei received 'Tip of the Cap' recognition from the Mortar Board Society.

SER Outreach: Leading major events to connect Wyoming stakeholders, members of the community and UW faculty, staff, and students including the following:

- Spring 2023 Distinguished Speaker Series – at least six presentations bringing different energy experts to campus through the fall semester.
- RENEW (Research Explorations for Nuclear Energy in Wyoming) Colloquia – April 14, 2023
- Rocky Mountain Professional Landman Conference – May 5, 2023
- Webinar Series to support topics of interest to Wyoming as well as grant outreach milestones

SER Research: Leading and supporting a wide array of Wyoming-focused research programs to ultimately drive increased state revenue:

- The SER exception funding request to the Wyoming Legislature was approved. It included appropriations for two SER research programs 1.) Carbon Engineering Research and Demonstration: To operate the pyrolysis unit field demonstration (construction was previously appropriated) near Gillette and demonstrate the major pyrolysis products at an increased scale in real-world condition, and 2.) Phase II of the Mowry Shale Research Program. The Mowry Shale Research Program currently in Phase I aims to bring together a multidisciplinary UW team to focus on unlocking Wyoming's largest untapped unconventional oil and gas resource.
- SER, through the Hydrogen Energy Research Center and with faculty from College of Engineering and Physical Science is supporting the Western Interstate Hydrogen Hub (WISHH) Proposal. WISHH was formed by an MOU between the Governors of Wyoming, Colorado, Utah and New Mexico to align efforts to establish a regional hydrogen hub in Update to Board of Trustees the Intermountain West. SER's role is to provide support for modeling of technoeconomics and life cycle analysis to the proposal.
- SER was awarded \$10.5M through the Department of Energy CarbonSAFE program to evaluate carbon storage in the Pacific Northwest, focused on CO₂ generated using Wyoming natural gas. The SER-led project is in collaboration with Pacific Northwest National Laboratory, Oxy Low Carbon Ventures, and Calpine. Calpine is power generating

facility utilizing Wyoming-sourced natural gas as a fuel source. SER is a national leader in carbon capture, and storage research, with this project we hope to export our expertise to point source emitters outside of Wyoming that are using Wyoming sources fuels. The project is being led by Dr. Fred McLaughlin in the SER Center for Economic Geology Research.

- Under SER's flagship CO₂ storage project, Wyoming CarbonSAFE, a commercial-scale storage hub is being developed that could provide carbon management solutions for the northern Powder River Basin in Wyoming. The project was given permission by the Department of Energy to complete an Environmental Assessment for a full commercial operation and started the contracting process with Trihydro Corporation to complete the study.
- Research projects with Tallgrass MLP and Williams that focus on hydrogen produced from natural gas (blue) and water electrolysis (green) are both on the final report preparation stages.
- An internal RFP with seven faculty led projects that research the production, storage, movement, and use of hydrogen is underway and project update meeting with an advisory board that consist of industry representatives is scheduled in early April.
- Led by the Center for Carbon Capture and Conversion, the coal refinery process continues to move forward with the intention of creating new products from Wyoming coal. The solvent extraction pilot plant and the flash pyrolysis pilot plant are being upscaled thanks to a donation from industry partner, Peabody. The new systems will be able to keep up with the demand for downstream product development until the field demonstration pilot plant is operational.
- The center is working with the American Coal Council to bring more exposure to the coal to products work being done at the university. This should help bring industry collaboration for the Carbon Engineering initiative.
- The Center for Energy Regulation and Policy Analysis is working with the Center for Business and Economic Analysis at the College of Business on an economic analysis nuclear energy and associated industries in Wyoming.
- CERPA is developing two scopes of work related to critical electricity topics: (1) Reliability: the role of the thermal fleet in extreme weather events; and (2) Funding options for carbon capture projects on utility owned generation units that protect ratepayers.

SER Enhanced Oil Recovery Institute (EORI): Undertaking work to increase oil production in Wyoming.

- Ongoing project development with Denbury Resources at Hartzog Draw Field for CO₂-EOR/storage is underway
- An online, interactive EORI Project and Reports Locator Dashboard launched in February