

Board of Trustees Update: July 2023

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

SER Academics: The SER Academic program continues to execute recruiting, evaluation of course offerings, advising students, career services, engagement with industry, administering scholarships, etc. to support student success and retention.

- SER's nine spring 2023 graduates secured employment or graduate school admission maintaining our 100% placement rate. We also had two students graduate from our Energy Resource Management minor.
- The American Association of Professional Landmen (AAPL) is holding their annual meeting in June. SER's PLM leadership, faculty and students will be in attendance and participating.
- Wyoming Association of Professional Landmen (WAPL) is holding their annual meeting in June and PLM Director Kris Koski will present on CCS Leasing and Permitting.
- SER's Academic Director, Kami Danaei, continues to work with ACES and Sutable on the Canvas implementation of SOAR.
- CEPS Associate Director of Career Services, Tyler Grabner, and SER's Academic Director, Kami Danaei, will present at the Rocky Mountain Mining Institute in Denver regarding "From Campus to Career: Enhancing Employer Engagement at UW". A recent donation from CEPS Alumnus Martin Knauss funded an experiential education competition in fall of 2022 that will be discussed as one-way employers can engage with UW. Tyler and Kami worked with Angela Ver Ploeg at the UW foundation on this presentation.

SER Outreach: The SER Outreach Program connecting Wyoming stakeholders, members of the community and UW faculty, staff and increases awareness of important energy academics and research at UW.

- Continued coordinating monthly webinar series between the Hydrogen Energy Research Center at SER and Cardiff University
- Organized a webinar exploring the energy crisis in Ukraine in partnership with the Hydrogen Energy Research Center and why it is relevant to Wyoming with the forthcoming new TerraPower Natrium™ nuclear power plant
- Promoted SER at the American Association of Petroleum Geologist (AAPG) Rocky Mountain Section conference in Bismarck, ND – June 4-6
- Migrated entire SER website to new system

SER Research: The SER research program leads and supports a wide array of Wyoming-focused research programs to ultimately drive increased state revenue and graduate students with expertise important to Wyoming.

- SER is developing a strategic plan for the Integrated Test Center (ITC) to include administration, current and future operations, infrastructure status and needs, financial status, and supplemental funding models, and creating a return on investment for Wyoming. This plan will be presented to ITC stakeholders after the MOU is executed.
- SER continues to be successful at federal grant capture, including **receiving the single largest competitive award ever received by UW**. New funding announcements include:
 - The \$40.5 million CarbonSAFE award (\$50.6 million total with cost share) over three years to support the development of a new and expanded commercial carbon storage project in the Greater Green River Basin. The DOE-funded project will be led by the SER Center for Economic Geology Research (CEGR) which will develop the Sweetwater Carbon Storage Hub in collaboration with Frontier Carbon Solutions LLC. The Sweetwater Carbon Storage Hub is being developed to offer carbon mitigation and management options for southwest Wyoming's industrial sector including trona, natural gas processing and other energy industries.
 - The SER Hydrogen Energy Research Center (H₂ERC) was selected for \$5M award (\$10M total project with cost share) titled 'Integration of Produced Water Thermal Desalination and Steam Methane Reforming for Efficient Hydrogen Production. H₂ERC has partnered with Williams, Los Alamos National Laboratories (LANL), and Engineering, Procurement & Construction, LLC (EPC) on this project.
 - H₂ERC is a part of a project funded by Wyoming Innovation Partnership (\$650k) titled 'Advancing Blue Hydrogen Production and Transport Infrastructure in Wyoming'.
- Led by the Center for Carbon Capture and Conversion (CCCC), the carbon engineering initiative continues to create new products from Wyoming coal. The solvent extraction pilot plant scale up on campus is ongoing and will be completed by mid-August. UW/SER/CCCC along with Western Research Institute (WRI) are submitting a joint proposal to the Department of Transportation (DOT) and the Federal Highway Association (FHWA) to demonstrate the coal derived asphalt product on a road near Gillette, WY. The field demonstration pilot plant detailed engineering for the Pyrolysis unit is about 50% complete. Construction of the pyrolysis unit is scheduled for fall of 2023.
- Per a specific appropriation, CCCC is exploring the possibility of Wyoming coal or coal char being used to make nuclear grade graphite. The project starts July 1st and will identify process design and purification efforts in making graphite material.
- The Center for Energy Regulation and Policy Analysis (CERPA) is working with the Center for Business and Economic Analysis at the College of Business on an economic analysis of six components of the integrated nuclear industry for potential application in Wyoming.
- CERPA is developing three scopes of work related to critical electricity topics: (1) Reliability: the role of the thermal fleet in extreme weather events; (2) Innovative rate making alternative for carbon capture projects on utility-owned generation units to protect ratepayers; and (3) the impact on reliability from increased demand associated with the EPA's recently announced proposed rule related to electric vehicles.
- The Hydrogen Energy Research Center (H₂ERC) is developing several collaborative proposals: 1) geologically sourced Hydrogen for Advanced Research Projects Agency–Energy (ARPA-E); 2) Clean Energy Demonstrations on Current and Former Mine Land for the Department of Energy (DOE); 3) University Training and Research for Fossil Energy and Carbon Management for the DOE; and 4) international collaborations with Cardiff University, Cranfield University, and University of Bologna using Engineering and Physical Sciences Research Council (EPSRC) and other sources of funding.

- H₂ERC released an internal RFP for UW faculty members for novel research on hydrogen transportation, electrolysis hydrogen production systems, and hydrogen production from Wyoming's coal resources (natural gas derived hydrogen research was funded previously).

Enhanced Oil Recovery Institute (EORI): EORI Minimizes “stranded” oil in Wyoming oil fields by providing technical expertise and support to Wyoming oil and gas operators to increase production and revenues to the State of Wyoming.

- IT/DATA Technology Highlights
 - EORI Website
 - A new EORI website was officially launch in early May
 - WY CO₂ Initiative and Pipeline Services at EORI (planned July 2023 Launch)
 - The migration and integration activities of the pipeline infrastructure data, GIS technology and web applications to new updated EORI systems have been continued and progress is reaching the final stages
 - GIS and Web Applications on the EORI Website
 - Continued ongoing development and improvement of the Wyoming Reservoir Information Tool (WYRIT)
- The Wyoming legislature appropriated funds to WEA for EORI to retain pipeline expertise needed for Wyoming. EORI has worked with GC to identify the best approach to hire a contractor to meet this need, which will be effective July 2023.
- Project Highlights
- Cost-Share Project on a Microbial EOR (MEOR) Pilot
 - Final documents are in development with UW for EORI Cost-share with Amplify Energy at Lost Soldier/Wertz Field
 - Denbury – Hartzog Draw Field
 - Plans are advancing for a 6-well pilot CO₂ EOR project. EORI will provide geologic support.
 - A Shannon geology field trip for Denbury will be organized for late this summer or early fall
 - Skull Creek natural gas liquids EOR Project (Sunshine Valley Petroleum/XOil/Surtek)
 - Geology update will be done for Skull Creek Field
 - EOR project funding by XOil underway
 - Kitty Field (Muddy) Sequence Stratigraphy and Regional Muddy Study (Powder River Basin): Anticipate forming a Muddy Consortium to increase industry participation
 - Wyoming Trails Carbon Hub – (WyoTCH) CO₂ Pipeline Feed Study: \$3 Million Award from DOE with Carbon Solutions, LLC leading and EORI/UW is a subrecipient
 - Regional Minnelusa Formation Study – Ongoing Geology Work
 - The EORI Minnelusa Consortium will be relaunched with the addition of new operator partners
- Community and Industry Engagement:
 - EORI launched “**Enhanced Oil Recovery Insights**” on June 20th with a live and virtual webinar with Steve Whitaker presenting on the Muddy formation and ongoing work with that reservoir at EORI. These events will be held quarterly with options to attend the live event or to join via ZOOM. The next Enhanced Oil Recovery Insights event will be on August 10th