

Annual REPORT

2026

Strategic Academic Offerings

Innovative Research

Stakeholder Outreach

ACADEMICS

RESEARCH

OUTREACH



UNIVERSITY
OF WYOMING

School of
Energy Resources

*Prepared for the Wyoming Legislature
Joint Minerals, Business, and Economic Development Committee
Joint Appropriations Committee
Joint Education Committee*

THE UNIVERSITY OF WYOMING SCHOOL OF ENERGY RESOURCES (SER) ANNUAL REPORT FISCAL YEAR 2026

July 1, 2025 through June 30, 2026

WHO WE ARE

SER LEADERSHIP

Holly Krutka | Executive Director

Scott Quillinan | Acting Executive Director

Erin Phillips, Ph.D. | Acting Senior Director, Research

J. Fred McLaughlin, Ph.D. | Director, Center for Economic Geology Research

Trina Igelsrud Pfeiffer | Director, Center for Carbon Capture and Conversion

Eugene Holubnyak | Director, Hydrogen Energy Research Center

Matt Fry | Director, Center for Energy Regulation and Policy Analysis

Kami Danaei, Ed.D. | Senior Assistant Dean, Academic Programs

Kyle Summerfield | Program Manager, 3D Visualization Center

Rachel Ferrell | Director, Business Operations

Christine Reed | Director, Outreach

ADMINISTRATIVE SUPPORT

Kristi Russow | Executive Administrative Assistant

Pat McLean | Office Associate, Sr.

OUR MISSION

To advance energy-driven economic development for the state of Wyoming.



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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 report highlights SER's significant achievements from July 1, 2025, through June 30, 2026, 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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GLOSSARY OF ACRONYMS

#

3D Viz - 3D Visualization Center

A

AAPL - American Association of Professional Landmen

AI - Artificial Intelligence

ART - Acceleration of Research Translation

ASRS - American Society of Reclamation Sciences

B

BLM - Bureau of Land Management

BOT - Board of Trustees

C

CALSNR - College of Agriculture, Life Sciences, and Natural Resources

CAQ - Center for Air Quality

CarbonSAFE - Carbon Storage Assurance Facility Enterprise

CBNGR - Center for Biogenic Natural Gas Research

CCCC - Center for Carbon Capture and Conversion

CCUS - Carbon Capture, Utilization and Storage

CEGR - Center for Economic Geology Research

CEPS - College of Engineering and Physical Sciences

CEPWM - Center of Excellence for Produced Water Management

CERPA - Center for Energy Regulation & Policy Analysis

CM - Critical Minerals

CMLA - Critical Minerals Leadership Academy

CO₂ - Carbon Dioxide

COE - Centers of Excellence

CORE-CM - Carbon Ore, Rare Earth and Critical Minerals

CPL - Certified Professional Landman

CREW - Consolidated Report of Energy in Wyoming

D

DFS - Dry Fork Station

DOE - Department of Energy

DOGE - Department of Government Efficiency

E

EES - Energy and Environmental Systems

EIC - Energy Innovation Center

Energy ELC - Energy Engagement, Leadership and Careers

EPSCoR - Established Program to Stimulate Competitive Research

ERC - Energy Resources Council

ERM - Energy Resource Management (minor)

ERMD - Energy Resource Management and Development

ERS - Energy Resource Science

F

FY26 -Fiscal Year 2026

FY27 - Fiscal Year 2027

G

GGRB - Greater Green River Basin

GIS - Geographic Information System

GTI - Gas Technology Institute

H

Haub School - Haub School of Environment and Natural Resources

H₂ERC - Hydrogen Energy Research Center

HERO - Hermiston, Oregon

HSI - Hyperspectral Imaging

HVAC - Heating, Ventilation, and Air Conditioning

I

ITC - Integrated Test Center

J

JOULE - Jurisprudence of Underground Law and Energy

L

LAND - Land Certificate

LST - Landman Scholarship Trust



M

MAES - Mechanistic Air Emissions Simulator
MASL - Multidisciplinary Advanced Stimulation Laboratory
METEC - Methane Emissions Technology Evaluation Center
MTR - Membrane Technology and Research

N

NAWEA - North American Wind Energy Academy
NERC - Nuclear Energy Research Center
NES - Nuclear Energy Science Certificate
NETL - National Environmental Technology Laboratory
NORCE - Norwegian Research Centre
NSF - National Science Foundation
NTEC - Navajo Transitional Energy Company
NWSC - NCAR-Wyoming Super Computer

P

PI - Principal Investigator
PLM - Professional Land Management
PRB - Powder River Basin

R

REE - Rare Earth Element
RNG - Renewable Natural Gas

S

SBEN - Subsurface Energy Certificate
SCWDO - Supercritical Water Desalination and Oxidation
SEDI - Subsurface Energy and Digital Innovation Center
SEG - Society of Exploration Geophysicists
SER - School of Energy Resources
SMR - Steam Methane Reforming
STAR - Seed Translational Acceleration of Research
STEM - Science, Technology, Engineering, Mathematics

T

TAP - Technology Associated Program
TVP - True Vertical Depth

U

UAS - Unmanned Aircraft System
UIC - Underground Injection Control
USDA - United States Department of Agriculture
USGS - United States Geological Survey
UW - University of Wyoming

V

VNIR-SWIR - Visible Near-Infrared, Short Wave Infrared
VR - Virtual Reality

W

WERC - Wind Energy Research Center
WIP - Wyoming Innovation Partnership
WRI - Western Research Institute
WY - Wyoming
WylC - Wyoming Innovation Center

LETTER FROM THE ACTING EXECUTIVE DIRECTOR

Dear Partners, Colleagues and Supporters,

FY26 was a year of transition for the School of Energy Resources. After nearly six years as executive director, Dr. Holly Krutka stepped down to return to private industry. I was honored to serve as acting executive director while the Energy Resources Council and the University of Wyoming conducted the search for our next leader. Pete Obermueller was selected in June and began his role on August 31, 2026.

Dr. Krutka helped SER grow its research portfolio, strengthen its partnerships, and expand opportunities for students. I am grateful for her leadership and the strong foundation she built. During the transition, our team stepped up across every part of SER. They supported one another, kept projects moving, and ensured that we continued to deliver on our mission for Wyoming.

As part of Wyoming's land grant university, SER has a responsibility to put knowledge to work for the state. We do that by preparing students for careers in energy, conducting research that addresses practical challenges, and sharing our work with the communities and industries we serve. The accomplishments in this report reflect that commitment.

In academics, SER and the Department of Energy and Petroleum Engineering launched a new undergraduate certificate in subsurface energy, giving students another way to build skills for a changing workforce. Students also had opportunities to learn in the field, including through SER's inaugural energy study abroad course in Norway. These experiences help students connect classroom learning with the people, places, and decisions that shape energy development. I want to express my appreciation to the faculty and staff who create these opportunities and the students who make the most of them.

Our research teams continued to tackle complex energy challenges facing Wyoming's industries. This report highlights progress in oil and gas, coal products, carbon management, critical minerals, hydrogen, nuclear energy, wind energy, and energy policy. That breadth of work reflects the expertise across SER and the strength of our partnerships. Together, we are producing research and analysis that inform decisions and help move solutions forward.

Outreach connects that work with people across the state. During FY26, SER hosted conversations on land and resource management and energy law, welcomed speakers to campus, and shared research through our Energy Frontier podcast. Our team also participated in the STEM Roadshow, reaching students in classrooms across Wyoming. These efforts allow us to share what we know, hear what matters to communities, and build relationships that strengthen our work.

I also want to recognize our financial team. Much of their work happens behind the scenes, but every project and program in this report depends on it. They work tirelessly to manage state, federal, and private resources with care and transparency. Their diligence helps our faculty and staff carry out SER's



Scott Quillinan
Acting Executive Director

mission, and I am grateful for their work.

I want to thank our students, faculty, staff, and partners for all they contributed during FY26. I am proud of what this team accomplished during a year of transition, and I am excited about the momentum we have built and where SER is heading.

Scott Quillinan
Acting Executive Director





ENERGY RESOURCES COUNCIL

The University of Wyoming Energy Resources Council (ERC) was established by Wyoming statute 21-17-117(e) to guide SER in setting priorities for energy-related academics, research, and outreach. The ERC, consisting of leaders from industry, the legislature and UW, provides direction for responsive, internationally recognized, interdisciplinary energy-related programs that are integral constituents of the university's identity.

Required by provision (c)(iv) of WY Stat § 21-17-117 and in accordance with WY Stat § 9-2-1010 through 9-2-1014, SER submits its budget directly to the ERC for review and approval before final submission to the governor.

The ERC contributes a unique business perspective on the diverse research and workforce demands of both Wyoming's private and public energy sectors, and is responsible for producing a valuable return on the state's investment in UW's energy programs.

The ERC currently consists of thirteen members and liaisons. Seven members represent diverse sectors of Wyoming's energy industries and are appointed to three-year terms by the governor with confirmation by the Senate.

Additional members include one member from the Wyoming Senate (appointed by the President of the Senate), one from the House of Representatives (appointed by the Speaker of the House), and four ex-officio members and liaisons: the President of the University of Wyoming, the Director of the Haub School of Environment and Natural Resources, a representative from the Wyoming Governor's office, and an informal seat is occupied by a member of the UW Board of Trustees.

SER LEADERSHIP

COUNCIL MEMBERS

David Emery, Chairman

Retired Chairman and CEO, Black Hills Corporation

Jim Anderson, Vice Chairman

Wyoming State Senator, District 28

Cindy Crane

Retired CEO, PacifiCorp

Scott Heiner

Wyoming House of Representatives, District 18

Charlene Russell

Retired, Vice President of Commercial Development for North America, Baker Hughes

Chad Teply

Retired, Senior Vice President, Transmission and Gulf of Mexico at Williams

Don Burkhardt, Jr.

Former Representative, Wyoming Legislature

Bill Miller

Executive Vice President, The Anschutz Corp.

Peter Gottfried

President, Natural Systems Analysts Inc.

EX-OFFICIO MEMBERS AND LIAISONS

Edward Seidel

President, University of Wyoming

Paul Ulrich

Trustee, University of Wyoming

Randall Luthi

Senior Policy Advisor, State of Wyoming

John Koprowski

Dean, UW Haub School & Ruckelshaus Institute



INCOMING MEMBERS

Energy Resources Council

In FY26, the ERC welcomed back two familiar faces to the governance group.

Donald Burkhart, Jr., who previously served as one of the statutorily required legislative representatives on the governing body to SER, was reappointed by **Gov. Mark Gordon** and confirmed by the Wyoming Senate during the FY26 budget session.

Before his time in the legislature, Burkhart spent decades in the energy industry. He worked as a safety engineer for BP America Production Co. and on the Board of Directors of the Wyoming-Montana Safety Council.

Senator Jim Anderson of District 28 also made a return to the Council as the legislative representative for the Senate.

The ERC is statutorily required to include representatives of the Wyoming Legislature to ensure that SER's work is relevant, impactful and aligned with the needs of Wyoming and the nation. Serving a minimum of a two-year term, one member comes from the Wyoming Senate, appointed by the president of the Senate, and the other from the House of Representatives, appointed by the speaker of the House.

Sen. Anderson has previously served on the ERC from 2013 to 2025, serving as Vice Chairman beginning in 2017. In March of 2026, Sen. Anderson replaced **Senator Ed Cooper** of District 20, and was once again voted in as Vice Chairman.



Sen. Jim Anderson



*The Honorable
Don Burkhart, Jr.*

OUTGOING MEMBERS

Energy Resources Council

SER would like to extend its sincerest thanks to the outgoing members of the ERC, **Mark Doelger** and **Sen. Ed Cooper**.

Appointed to the ERC in 2020, Doelger is a registered professional geologist with nearly 50 years of experience in the energy field. He currently is president of Barlow & Haun, a partner in Stakeholder Energy LLC, and president of the Upper Green River Conservancy. He has also served as chairman of the Wyoming Pipeline Authority and acting chairman of the Wyoming Oil and Gas Conservation Commission.

Sen. Cooper was appointed to the Council in March of 2025, and served as the Vice Chairman. With deep roots in both the energy and agricultural sectors in Wyoming, he started his own oil and gas consulting firm in 1972 and owns Cooper Land and Livestock, a company rooted in farming and cattle operations.

Cooper was elected to the Legislature in 2021 and is now in his second term. Among several other committees, he serves on the Joint Minerals, Business and Economic Development Committee.



Mark Doelger



Sen. Ed Cooper

SER EXECUTIVE DIRECTOR TRANSITION

After nearly six years of leadership, SER Executive Director **Holly Krutka** announced she was stepping down from her role to return to private industry.

Joining SER in the middle of the Covid-19 pandemic of 2020, Krutka led SER's multidisciplinary team focused on advancing innovative energy research, academic programs, and stakeholder engagement.

A recognized expert in carbon capture, fossil energy, and emerging technologies, she brought a breadth of industry experience from prior leadership roles at Peabody Energy and Tri-State Generation and Transmission.

During Krutka's tenure, SER expanded academic programs and student engagement while advancing major initiatives in oil and gas, advanced coal utilization, nuclear energy, hydrogen, critical minerals, and carbon capture, use and storage. The school's research portfolio and partnerships have grown substantially, reinforcing SER's critical role in Wyoming's energy and economic landscape.

UW, SER, and the ERC all expressed sincere thanks to Krutka for her exceptional service to the university and the state, and for her impact in substantially growing SER into a world-renowned research entity.



Holly Krutka

Interim Leadership

Following the announced departure of Krutka, the ERC appointed **Scott Quillinan** as the acting executive director while a search could be conducted for the next permanent leader.

Quillinan is SER's senior director of research. Quillinan joined UW as a senior hydrologist in 2012 and was promoted to director of the Center for Economic Geology Research in 2018. In 2021, he began in his current senior director position. He has about 13 years of experience in energy research and at least 30 publications related to Wyoming-specific topics, such as carbon capture, water, natural gas and geothermal energy.

While Quillinan was in his acting role, **Erin Phillips**, SER director of cross-cutting programs, stepped in as acting senior director of research to assist with the management of SER's grant-funded and state-funded research exceeding \$100 million.



Scott Quillinan



Erin Phillips

SER EXECUTIVE DIRECTOR SEARCH & SELECTION

During FY26, a comprehensive search for the next executive director was launched.

SER's governing body, the ERC, in conjunction with UW, engaged nationally recognized search firm Spencer Stuart to work with an appointed search committee to fill the position promptly.

Pete Obermueller was selected as the new executive director beginning in FY27.

With more than two decades of experience in legislative affairs, natural resource and energy policy, and community relations, Obermueller has championed major initiatives to advance Wyoming's economy and reduce regulatory burdens, including cultivating research partnerships with UW.



Pete Obermueller



ACADEMIC PROGRAM

UNDERGRADUATE CERTIFICATE IN SUBSURFACE ENERGY

A strategic collaboration between UW's School of Energy Resources (SER) and the Department of Energy and Petroleum Engineering within the College of Engineering and Physical Sciences launched a new undergraduate certificate in subsurface energy, designed to solidify Wyoming's position as a global leader in energy education and workforce development.

The 18-credit certificate is entirely composed of existing courses offered at UW and is tailored for students currently pursuing technical degrees who wish to add a specialized energy credential to their resume.

It integrates traditional petroleum foundations with modern sustainability and digital themes, including emerging technologies, energy economics, law and digital technologies, such as geographic information systems, blockchain and data analytics, to ensure UW graduates are prepared for the evolving demands of the energy workforce.

STUDY ABROAD COURSE

UW SER Leads Energy Study-Abroad Field Course in Norway

SER led its inaugural study-abroad field course in Norway to explore energy synergies between Norway and Wyoming.

Over the course of two weeks in late May and early June, 12 UW students explored energy hubs in Bergen, Stavanger and Oslo. Highlights of the trip included site visits to the Ministry of Energy and Equinor – a Norwegian multinational energy company – as well as technical briefings at NORCE and the Norwegian Offshore Directorate, and a networking dinner with UW alumni living in Norway.

The visits provided an on-the-ground perspective to strengthen students' understanding of how Wyoming and Norway are socially, geographically and economically similar and distinct, creating an opportunity for critical thinking about how these dimensions inform energy development.

Participants included from left: back row, Xavier Waltman, Liam Devine, Alexandru Ispas, James Gallegos, Austin Quillinan, Kolten Harmsen, Anna Nielsen, Madeleine Lewis (faculty) and Libby Krugerud; front row, Selena Gerace (faculty), Seth Needham, Cassidy Lolley, Christine Longnecker, Erin Phillips (faculty) and Matalin Mohr.



ACADEMICS

WHO WE ARE

Kami Danaei, Senior Assistant Dean, Co-Director, Professional Land Management (PLM) Concentration

Larissa Guerra, Academic Coordinator, Sr.

Heather Chandler, Academic Coordinator

Kristen Pritchett, Co-Director, Professional Land Management (PLM) Concentration

Randall Violet, Director, Energy and Environmental Systems (EES) Concentration

Ashli Tomisich, Director, Student Success and Experiential Learning

MAJOR ACCOLADES

Kristen Pritchett was recognized at the inaugural Experiential Education Showcase and Celebration with an Excellence in Experiential Education Award.



Larissa Guerra was named the UW Student Organization Advisor of the Year for 2025-2026. Guerra was nominated by students in the Student Chapter of Energy Resources and SER staff.



STUDENT ACCOLADES

Harper Pollock was nominated for the Tobin Memorial and Rosemarie Martha Spitaleri Awards, UW's prestigious recognition for outstanding graduates.

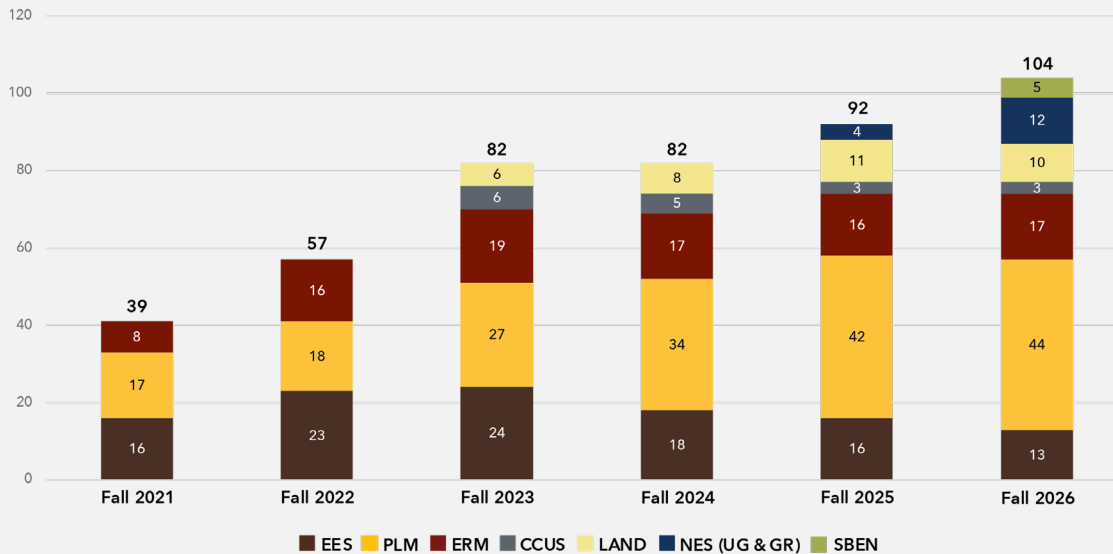


David Meraz Ordonez was the runner-up for the American Association of Professional Landmen (AAPL) Outstanding Graduate Award and represented the School of Energy Resources as the Outstanding Graduate from the University of Wyoming in an AAPL-accredited program.



BY THE NUMBERS

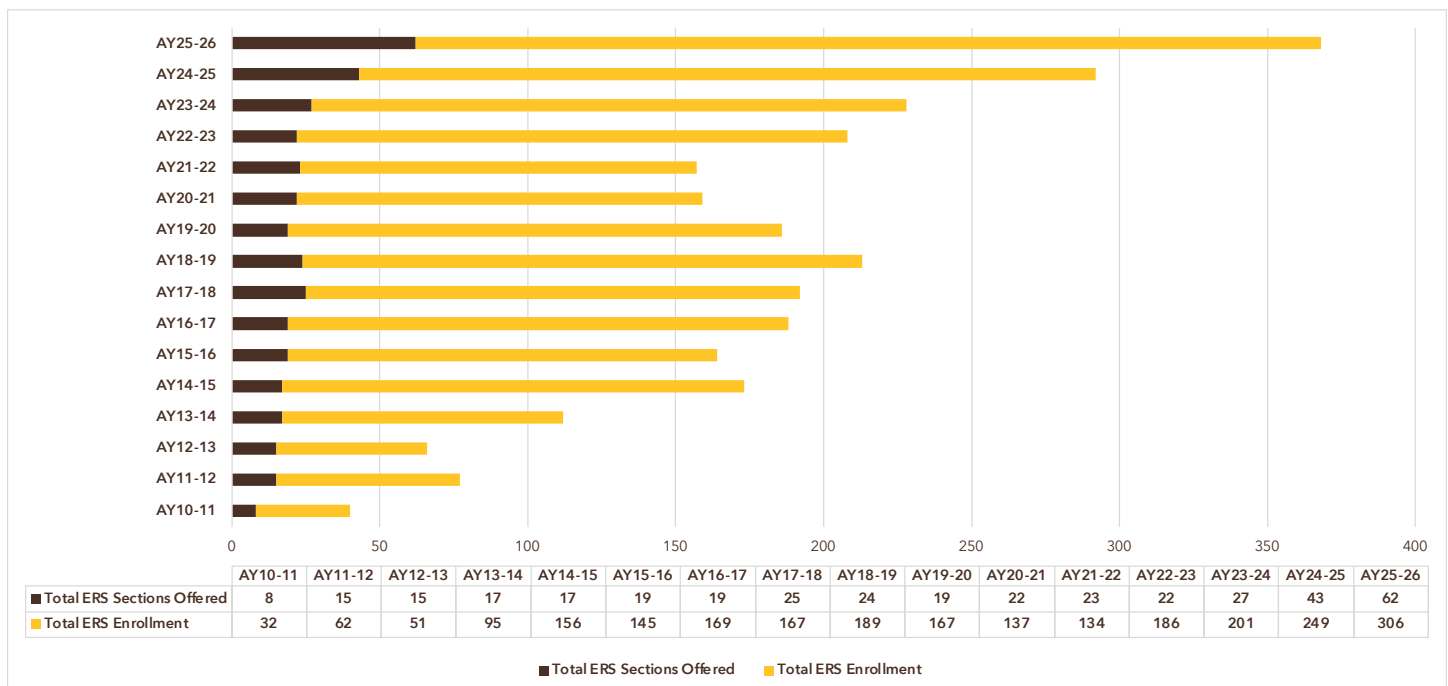
STUDENTS SERVED BY CREDENTIAL



Credentials

- EES** • Energy and Environmental Systems
- PLM** • Professional Land Management
- ERM** • Energy Resource Management (minor)
- CCUS** • Carbon Capture, Utilization and Storage Certificate
- LAND** • Land Administration Certificate
- NES** • Nuclear Energy Science Certificate (undergrad and grad)
- SBEN** • Subsurface Energy Certificate

OFFERED ERS COURSE SECTIONS AND ENROLLMENT BY ACADEMIC YEAR

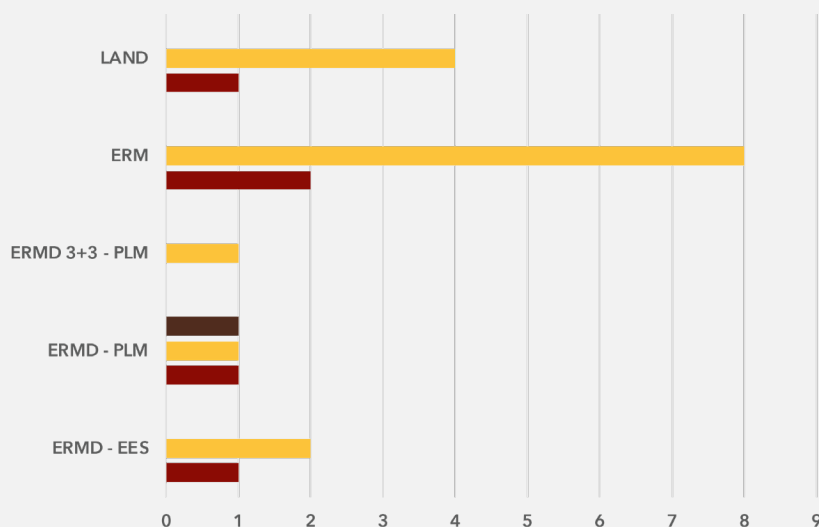


Majors Served in FY26

Accounting • Agriculture Business • Astronomy and Astrophysics • Chemical and Biomedical Engineering • Chemistry • Chemistry • Construction Management • Criminal Justice • Degree Seeking Undeclared • Economics • Environment, Natural Resources, and Society • Environmental Systems Science • Entrepreneurship • Engineering Undeclared • Environment and Natural Resources • Exploratory Studies • Finance • Geology & Geophysics • GIS certificate • International Studies • Land Administration Certificate • Management • Marketing • Petroleum Engineering • Physics • Political Science • Psychology • Software Development • Sales • Spanish • Wildlife and Fisheries Biology • Energy Resource Management and Development

BY THE NUMBERS

GRADUATES BY PROGRAM AND TERM

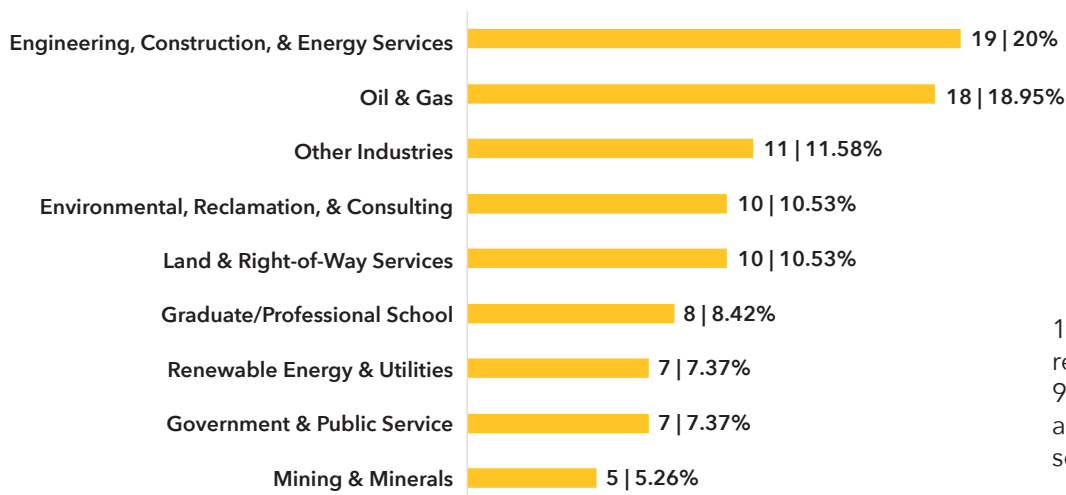


TOTAL GRADUATES: 22

Fall 2025: **5** • Spring 2026: **16** • Summer 2026: **1**

■ Fall 2025 ■ Spring 2026 ■ Summer 2026

INDUSTRY SECTORS EMPLOYING ERMD ALUMNI



122 ERMD graduates reported employment by 95 unique organizations across nine industry sectors

NIELSON TEXTBOOK SCHOLARSHIPS

Fall 2025 Textbook Scholarship | 34 Awards
Spring 2026 Textbook Scholarship | 37 Awards

Through the James E. Nielson Energy Excellence Fund, highly talented students planning a career in energy are supported through textbook scholarships, experiential learning and industry field visits, study abroad courses, as well as career and professional development opportunities.



EXPERIENTIAL LEARNING OPPORTUNITIES

Moab Field Course

Students completed a one-credit field course in Moab, Utah, to study rock formations that are direct analogs to those being explored for carbon management in Wyoming.

Open to all UW students, the course focused on understanding the geological properties of sedimentary rock layers that could potentially store vast amounts of captured carbon dioxide.

The Moab region offers exceptional exposures of rock units that share similar age and depositional settings with key formations found deep in the subsurface across Wyoming.

Over the course of five days, students were challenged to consider how fluids move through the subsurface and what happens when they encounter a barrier.

Participants in the UW field course in Moab, Utah, are, from left: students Titus Timbers, Austin Quillinan, Jack McKinley, Logan Gray, Rachel Bryan, Aditya Srivastava, Phoebe Fletcher, Abigail Mensch, Cass Lolley, Lucy Cooper, Harper Pollock and Center for Economic Geology Research Assistant Director Autumn Eakin (faculty).



Students Learn about Life Cycle of an Oil Well with Continental Resources

Students participated in a comprehensive field trip, hosted by Continental Resources, to a drilling and production site in Wyoming.



The immersive experience provided future engineers, geologists, lawyers and energy professionals with an end-to-end view of an oil well's operational life cycle, from initial permitting through production and reclamation.

Students Visit Proposed Drilling Locations in Powder River Basin

Students visited proposed drilling locations in the Powder River Basin to witness the complex processes behind permitting, environmental approvals, and multi-party negotiations.

The field trip offered a behind-the-scenes look at a standard meeting between WRC Energy Group and the Bureau of Land Management regarding two proposed pad locations.



PRACTICAL TRAINING

FEATURED INTERNSHIPS

Jack McKinley, an ERMD graduate in the Energy and Environmental Systems concentration, served as an intern with CropKing Inc., where his work supported the greenhouse management team and learned about plant care and experimental set up.



Cadence Vollman, an ERMD student in the Professional Land Management concentration, completed a summer internship with DISA Uranium™, a subsidiary of DISA Technologies, Inc. Under the supervision of SER alumnus **Fred Eden**, Vollman conducted initial title work, drafted mining claims, and assisted with staking claims in the field.



MENTORSHIP PROGRAM

The SER Mentorship Program fosters professional and personal growth by connecting students with experienced professionals in the energy sector. This unique program provides invaluable opportunities for students to gain insights into the industry, develop essential skills, and build a robust professional network.

Mentees benefit from one-on-one guidance, career advice, and exposure to real-world challenges and innovations in areas like sustainable energy systems, carbon management, and unconventional resource development.

The Mentorship Program is designed to equip the next generation of energy leaders with the knowledge and connections needed to thrive in a dynamic and evolving global energy landscape.



SER FACULTY

SER recruits and retains multidisciplinary faculty with expertise relevant to Wyoming's energy industry. Housed in 9 different departments across 6 UW Colleges and Schools, SER professors are internationally recognized energy experts who are actively involved in both energy research and teaching. Committed to achieving top learning outcomes, SER faculty develop students' curiosity and capacity for complex problem solving. Demonstrating its collaborative nature and focus on Wyoming energy education, outreach and research, SER also has many adjunct faculty who collaborate closely with both SER faculty and staff.

FACULTY ACCOLADES

Professor Dario Grana was named as the recipient of the prestigious 2026 John P. Ellbogen Meritorious Classroom Teaching Award.

The award recognizes excellence in classroom teaching, rewarding faculty members who demonstrate an exceptional commitment to student learning, innovative instructional methods, and profound impact on the academic community at UW.

He was also the recipient of the Society of Exploration Geophysicists' (SEG) Virgil Kauffman Gold Medal, which is bestowed to a person who has made an outstanding contribution to the advancement of the science of geophysical exploration.

Professor Dario Grana, Professor John Kaszuba, Professor Bryan Leonard, and Associate Dean Temple Stoellinger are all SER-affiliated professors recognized by **President Ed Seidel** with Presidential Scholarly Achievement Awards. The awards recognize faculty members who have demonstrated high achievement in scholarship in both the tenured and early-career faculty categories.

NEW FACULTY MEMBERS

Hoon Choi joined the faculty as an SER assistant professor of Chemical and Biomedical Engineering. With a research portfolio focused on materials separations, Choi teaches Thermodynamics and provides expertise in the areas of separations, including bioprocessing, downstream process development, lithium and rare earth element (REE) extraction, and lignin valorization.



Dario Grana accepts his award from UW President Ed Seidel



FACULTY MEMBERS

Jennifer Bell, SER Assistant Professor of Soil Science and Reclamation

Po Chen, SER Associate Professor of Geology and Geophysics

Hoon Choi, SER Assistant Professor of Chemical and Biomedical Engineering

Tim Considine, SER Professor of Economics

Craig Douglas, SER Professor of Mathematics and Statistics

Maohong Fan, Carrell Family Endowed Chair in Energy and Petroleum and SER Professor of Chemical and Biomedical Engineering

Scarlett Forrest, Assistant Research Scientist

Dario Grana, SER Professor of Geology and Geophysics and Wyoming Excellence Chair

John Kaszuba, John and Jane Wold Centennial Chair in Energy, SER Professor of Geology and Geophysics

Bryan Leonard, SER Associate Professor of Environment and Natural Resources

Madeleine Lewis, Associate Research Scientist and Temporary Lecturer

Subhashis Mallick, SER Professor of Geology and Geophysics

Tara Righetti, Occidental Chair of Energy and Environmental Policies and SER Professor of Law

Bruce Parkinson, Emeritus SER Professor of Chemistry

ADJUNCT FACULTY MEMBERS

Saman Aryana, Occidental Chair of Energy and Environmental Technologies and Professor of Chemical and Biomedical Engineering; Associate Dean, CEPS

Erica Belmont, Associate Professor of Mechanical Engineering

Jonathan Brant, Professor of Civil and Architectural Engineering

Ben Cook, Senior Assistant Dean and Professor of Economics

Stuart Farris, Hestia Energy, Co-Founder & Chief Technology Officer

Caleb Hill, J.E. Warren Chair, Nielson Faculty Fellow, Associate Professor of Chemistry

Shane Murphy, Professor of Atmospheric Science

Jonathan Naughton, Professor of Mechanical Engineering

Michael Norato, Director of Nuclear Facilities and Infrastructure, Nano Nuclear Energy Inc.

Soheil Saraji, Associate Professor of Energy and Petroleum Engineering

Michael Stoellinger, Associate Professor of Mechanical Engineering

Temple Stoellinger, Associate Dean of Environment and Natural Resources and Wyoming Excellence Chair

Haibo Zhai, Roy & Caryl Cline Distinguished Chair in Engineering and Professor of Civil and Architectural Engineering

Kam Ng, Associate Professor of Civil and Architectural Engineering

Michael Urynowicz, Professor of Civil and Architectural Engineering

SELECT FACULTY PUBLICATIONS

Tara Righetti, Madeleine Lewis, Scarlett Forrest, Rachael Budowle & Laine Jones, Just Nuclear, 86 Ohio St. L.J. (2026).

Ellen G. Polites, Quin R.S. Miller, Janet C. Dewey, **John P. Kaszuba**; Quantifying Hydrocarbon-Dominated Transport of Uranium and Vanadium. ACS Sustainable Resour. Manage. 28 May 2026; 3 (5): 1534-1542.

D. Grana, L. P. de Figueiredo, F. L. Bordignon, R. Exterkoetter, M. Roisenberg and B. B. Rodrigues, "Generalized Bayesian Linearized AVO Inversion Using Box-Cox Transformation," in IEEE Transactions on Geoscience and Remote Sensing, vol. 64, pp. 4503210-4503210, 2026.

Zaixing Huang, **Maohong Fan**, Hanjing Tian, Corrigendum to "Rare earth elements of fly ash from Wyoming's Powder River Basin coal", Journal of Rare Earths, Volume 44, Issue 6, 2026, Page 1967, ISSN 1002-0721.

Oppong, Benard Sasu, **Chen, Po**, Lee, En-Jui, and Wu-Yu Liao. "Missing Well-Log Data Prediction Using a Hybrid U-Net and LSTM Network Model." Petrophysics 66 (2025): 785-806.

Leonard B, Smith SM (2025), "Water is the true wealth in a dry land: prior appropriation and the settlement of the Arid West". Journal of Historical Political Economy, Vol. 5 No. 3-4 pp. 287-319.

Mallick, Subhashis, Aditya Srivastava, and Dwaipayan Chakraborty. 2025. "High-Resolution Subsurface Characterization Using Seismic Inversion—Methodology and Examples" Eng 6, no. 9: 206.

Madeleine Lewis & Tara Righetti, CO₂ Pipelines as Common Carriers, 10 Oil & Gas, Nat. Resources & Energy J. 661 (2025).

Ellen G. Polites, Lily J. Jackson, Janet C. Dewey, **Kaszuba, John**, Crustal distribution of rare earth elements modulated by hydrocarbon migration. ChemRxiv. 21 May 2026.

Feng, R., **Grana, D.** & Mosegaard, K. Geostatistical Facies Simulation based on Training Image Using Generative Networks and Gradual Deformation. Math Geosci 57, 1021-1044 (2025).

Nan Wang, Yuan Zhang, Zhaojun Min, Bing Chang, Huiyong Wang, Zhiyong Li, **Maohong Fan**, Suojian Zhang, Jianji Wang; Selective Electrosynthesis of Ethanol from CO₂ Enabled by High Cu Content and Enhanced H₂O Activation of Molecularly Modified Cu-Based Catalyst. Journal American Chemical Society 8 April 2026; 148 (13): 13633-13643.

Gordon, B., Blumberg, J., Carroll, R., Manning, D., **Leonard, B.**, Boismere, G., Lorenz, A., Harpold, A., Berkey, J., Cough, C., and Albano, C.: Snow Loss, Economic Cost, and Potential (Mal)Adaptation in Irrigated Agriculture: Case Studies from the Western US, EGU General Assembly 2026, Vienna, Austria, 3-8 May 2026. EGU26-15921



78* Total Faculty Publications in FY26

**Number includes output by graduate students in faculty research groups that list SER faculty members as contributing authors. Number does not include publications from SER adjunct faculty or research staff.*

RESEARCH SUMMARY

SER's research programs focus on maximizing energy production, minimizing environmental footprint, and leading technology innovation, always to benefit the state. Through its Centers of Excellence (COE), SER bridges the gap between academia and industry - and ensures deployment of technology and policy solutions.

RESEARCH ACCOLADES

Davin Bagdonas

Principal Scientist **Davin Bagdonas** was recognized at the third annual Celebration of Research and Innovative Excellence awards by UW's Research and Economic Development Division for his contributions to UW's research and innovation landscape. Bagdonas was particularly recognized for his work and scholarship on the use of coal and coal fly ash as unconventional sources of critical minerals in the United States.



ENERGY SCIENCE GRADUATE ASSISTANTSHIPS

SER continued to oversee the distribution of Energy Science Graduate Assistantships supported through the Abandoned Mine Lands funds administered through the Wyoming Department of Environmental Quality. Funded graduate students must work on a Wyoming energy-related project, and at least half must have demonstrated Wyoming residency or be a graduate of UW.

ENERGY & PETROLEUM
ENGINEERING

Ph.D.



DEVELOPMENT AND TESTING
OF **LOW-WATER FRACTURING
FLUIDS** FOR WYOMING

NON-RESIDENT NON-ALUMNI

CIVIL AND ARCHITECTURAL
ENGINEERING & CONSTRUCTION
MANAGEMENT

M.S.



CO₂ CAPTURE AND
UTILIZATION FOR **BIO-
INSPIRED SOIL STABILIZATION**

NON-RESIDENT NON-ALUMNI

GEOLOGY &
GEOPHYSICS

M.S.



GEOLOGIC HYDROGEN

RESIDENT UW ALUMNI

CHEMISTRY

Ph.D.



**NUCLEAR
NANOTECHNOLOGY**

RESIDENT UW ALUMNI

WHO WE ARE

Scott Quillinan, Acting Executive Director/Senior Director of Research

Erin Phillips, Acting Senior Director of Research/Director, Cross-Cutting Programs

Tiffany Bishop, Senior Project Specialist

David Lucke, Associate Project Specialist

Martha Reisch, Associate Project Specialist

Kaleb Peterson, Assistant Project Specialist

CENTERS OF EXCELLENCE

Center for Economic Geology Research,
Directed by J. Fred McLaughlin

Center for Energy Regulation & Policy Analysis,
Directed by Matt Fry

Center for Carbon Capture and Conversion,
Directed by Trina Igelsrud Pfeiffer

3D Visualization Center,
Managed by Kyle Summerfield

Hydrogen Energy Research Center,
Directed by Eugene Holubnyak

FACULTY-LED CENTERS OF EXCELLENCE

Nuclear Energy Research Center, Directed by
Tara Righetti and Caleb Hill

Center for Produced Water Management,
Directed by Jonathan Brant

Center for Air Quality,
Directed by Shane Murphy

Wind Energy Research Center, Directed by
Jonathan Naughton and Michael Stoellinger

Center for Biogenic Natural Gas Research,
Directed by Michael Urynowicz

**Subsurface Energy and Digital Innovation
Center**, Directed by Soheil Saraji

RESEARCH PROGRAMS

**Jurisprudence of Underground Law and
Energy**, Directed by Tara Righetti

**Energy Engagement, Leadership and Careers
Program**, Directed by Erin Phillips and Selena
Gerace

WYOMING INTEGRATED TEST CENTER

Department of Energy Portfolio Review

In late May 2025, Energy Secretary **Chris Wright** issued a Secretarial Memorandum titled “Ensuring Responsibility for Financial Assistance,” establishing a formal Portfolio Review Committee. Staffed by administration appointees and Department of Government Efficiency (DOGE) officials, the committee reviewed federal grants and financial assistance awarded under the previous administration.

The 2025 federal funding reviews directly impacted the Wyoming Integrated Test Center (ITC) disrupting several major carbon capture, utilization, and storage (CCUS) projects operating out of the facility.

Despite losing some federal backing, the ITC and its tenants avoided full shutdown by pivoting toward private, state, and international partnerships.

Dry Fork Station Planned Outage

Basin Electric Power Cooperative’s Dry Fork Station underwent a comprehensive triennial outage, bringing hundreds of specialized contractors on-site to execute major maintenance, inspection, and upgrade work on the power plant.

Because the ITC depends directly on Dry Fork Station for its continuous supply of flue gas, the outage temporarily pauses active testing operations; however, tenant facilities used this planned window strategically to perform essential equipment maintenance, sensor recalibrations, and sorbent or membrane upgrades before full-scale power generation and flue gas delivery resume.



PARTNER RESEARCH ORGANIZATIONS

Wyoming Integrated Test Center,
Managed by the UW School of Energy Resources



ITC TENANT UPDATES

Membrane Technology and Research

Membrane Technology and Research (MTR) achieved over one year of continuous operation on its completed Polaris™ membrane-based post-combustion carbon capture system.

Gas Technology Institute

Gas Technology Institute (GTI), in partnership with Ohio State University, paused construction on a facilitated transport membrane system for carbon dioxide capture project. The status for continued operations or the initiation of reclamation phase activities remains contingent upon negotiations with DOE.

TDA Research Inc.

TDA Research Inc. suffered one of the largest direct hits when the DOE canceled a \$49.8 million federal grant intended for a large-scale pilot project. Its small pilot plant remained operational with testing occurring throughout FY26.

ITC Capital Improvement Grant

Following the DOE portfolio review process, the ITC Capital Improvement Grant was confirmed and resumed negotiations. The 5-year project is aimed at continuing ITC operations and improving the infrastructure at the facility.

RESEARCH PROGRAMS

ENERGY ENGAGEMENT, LEADERSHIP, AND CAREERS (ELC) PROGRAM

The Energy ELC Program leads in the development of a skilled energy workforce, engages industry stakeholders, empowers communities by incorporating local knowledge into program development and research, advances social science capacity building, and inspires the next generation of leaders through innovative education.

Inaugural Critical Minerals Leadership Academy a Resounding Success

Led by the Energy ELC Program, the Critical Minerals Leadership Academy (CMLA), a new initiative designed to foster expertise and collaboration in the critical minerals sector, successfully completed its inaugural session in early August of 2025.

Designed to equip participants with a comprehensive understanding of the entire critical minerals value chain, from exploration and extraction to processing, recycling, and end-use applications, the CMLA was sponsored by the U.S. Department of Energy, and hosted by SER, with support from the National Energy Technology Laboratory, KeyLogic, Entech Strategies LLC, and multiple industry partners.

The program brought together a diverse group of emerging leaders from government, industry, and academia to address the complex challenges and opportunities surrounding the global supply of critical minerals.

The program will run again in FY27.

Social License Study 3.0

The Energy ELC Program launched the initial phase of an updated Social License Study. The report explores Wyoming residents' values, beliefs, and perceptions regarding the future of Wyoming's energy economy. The purpose of the study is to examine Wyoming citizens' acceptance and approval of different energy future scenarios to provide a better understanding of what Wyoming residents envision for the future of the state's energy economy.

An initial Social License report was released in 2020, and a second report was released in 2023. The updated study will consider new technologies through revised survey questions and is anticipated to be released in FY27.



WHO WE ARE: ENERGY ELC

Erin Phillips, Acting Senior Director of Research/Director, Cross-Cutting Programs

Selena Gerace, Program Manager, Community Engagement Specialist

Madison Mankin, Assistant Research Professional, Workforce Development

COLLABORATIONS

A major focus of the Energy ELC program is to collaborate directly with SER's outreach and academic programs to streamline engagement and workforce development efforts.

Norway Study Abroad

The inaugural study-abroad field course in Norway was co- led by **Erin Phillips**, **Selena Gerace**, and **Madeleine Lewis**, an associate research scientist in the Jurisprudence of Underground Law and Energy group. Stemming from Phillips' experience as a Fulbright Scholar at the Norwegian Research Centre (NORCE) in spring 2025, the course leveraged high-level connections with Norwegian energy experts.

STEM Roadshow

Joining the SER Outreach Team in a collaboration with the UW Science Initiative, Energy ELC participated in the STEM Roadshow, which aims to build curiosity and empower discovery of the natural world through STEM outreach. By combining forces, the team traveled to schools and local events statewide, expanding SER's impact across Wyoming by delivering hands-on energy education, interactive demonstrations, and valuable insights into energy careers.

JURISPRUDENCE OF UNDERGROUND LAW & ENERGY (JOULE) RESEARCH GROUP

JOULE is a research group designed to conduct innovative legal research that advances the understanding of the rules and relationships governing the use of the subsurface and development of energy and natural resources.

Pore Space Leasing Story Map

Researchers at SER, the Haub School of Environment and Natural Resources, and College of Law published a new story map that explains pore space leasing practices and makes example agreements publicly available.

The research team spent two years collecting examples of agreements granting injection and storage rights, and consolidated that existing information in the story map, making it publicly accessible.

Community Guide Series

JOULE added to its community guide series with the addition of a set of community information guides addressing topics related to nuclear energy in Wyoming.

Publications in this series include "What Every Wyoming Citizen Should Know About Nuclear Waste" and its companion guide, "Getting Involved: Community Guide to Participation in Nuclear Facility Authorizations," which seek to answer some of the most frequently asked questions surrounding the emergence of a nuclear industry in Wyoming.



International Symposium

JOULE hosted an international symposium on social, spatial, and legal research related to subsurface implications of the transforming energy sector.

The objective of the conference was to make an exploration of the spatial-legal relationships that apply to the subsurface and the potential evolution of such frameworks as a tool for the just transformation of the energy sector. Intervenor in the conference examined different issues of governance, planning, property ownership, rights, and power applicable to the subsurface throughout all stages of extraction.



WHO WE ARE: JOULE

Tara Righetti, Director, JOULE

Madeleine Lewis, Associate Research Scientist, Law & Policy

Scarlett Forrest, Assistant Research Scientist, Law & Policy

Federally Funded Research

A core focus of JOULE's work in FY26 was the preparation of substantive legal and policy deliverables for U.S. Department of Energy-funded projects, particularly in the areas of carbon management and advanced nuclear energy. These deliverables provide implementation-ready research for use by government agencies and project developers.

During FY26, JOULE also contributed to the preparation and submission of several additional proposals for external research funding.

- Phase III CarbonSAFE Regulatory and Policy Analysis, supporting large-scale carbon sequestration project development in Campbell County.
- A 50-state legal and regulatory survey for hydrogen development, prepared for the Great Plains Initiative/CERPA.
- A DOE-funded historical and industrial energy analysis as part of a project on advanced nuclear facility siting.
- A final project report to DOE/NETL on the valuation of storage rights in pore space, prepared with contributions from researchers in the Center for Economic Geology Research and the Haub School of Environment and Natural Resources.

Select Publications

Madeleine Lewis & Tara Righetti, CO₂ Pipelines as Common Carriers, 10 Oil & Gas, Nat. Resources & Energy J. 661 (2025).

Tara Righetti, Madeleine Lewis, Scarlett Forrest, Rachael Budowle & Lainee Jones, Just Nuclear, 86 Ohio St. L.J. (2026).



FACULTY-LED CENTERS OF EXCELLENCE

NUCLEAR ENERGY RESEARCH CENTER (NERC)

NERC is focused on interdisciplinary nuclear-energy capacity building across the UW community, and cultivating new resources in nuclear research.

ACCOLADES

Liane Moreau

Liane Moreau, assistant professor, Department of Chemistry, nuclear faculty fellow in NERC, was recognized by **President Ed Seidel** with a Presidential Scholarly Achievement Award. Moreau was recognized for her high achievement in scholarship in the early-career faculty category.



Nuclear Energy: An Emerging Issue Forum

NERC, along with the Haub School of Environment and Natural Resources and the Ruckelshaus Institute, and the Wyoming Energy Authority, hosted a two-day forum on the full fuel cycle of nuclear energy—from uranium mining, through fuel refinement and energy generation, to spent fuel storage, as well as supporting industries. The forum explored the benefits and risks of various projects and considered under what conditions they might be right for Wyoming's communities.



SUBSURFACE ENERGY AND DIGITAL INNOVATION CENTER (SEDI)

SEDI is dedicated to becoming a pioneering hub for advancing energy solutions by integrating cutting-edge digital technologies.

Richard and Marilyn Lynch Multidisciplinary Advanced Stimulation Laboratory

In FY26, the SEDI celebrated the grand opening of the Richard and Marilyn Lynch Multidisciplinary Advanced Stimulation Laboratory (MASL).

A partnership between SER and CEPS, the multidisciplinary lab is dedicated to optimizing the primary recovery of oil and gas. Research capabilities within the lab span much of the value chain of oil and gas production, including detailed reservoir characterization, petrophysics, geomechanics and stimulation, and fluid flow. It is also equipped with the capabilities to conduct enhanced oil recovery research.

MASL is named for Richard and Marilyn Lynch, who provided a transformative \$1 million gift to help establish the lab.



WIND ENERGY RESEARCH CENTER (WERC):

WERC is a collaboration with the College of Engineering and Physical Science dedicated to improving wind energy technology and its applications in Wyoming.

Wind Tunnel Testing

Research activities in WERC during FY26 focused on improving wind turbine efficiency and reducing performance losses associated with turbine wake interactions. Wind tunnel testing was conducted to identify natural instabilities in turbine wakes that may help mitigate the 10-20% energy losses experienced in many wind farms. Additionally, the research team worked on the development of machine-learning models to predict unsteady aerodynamic loading on turbine airfoils.

K-12 Outreach and Engagement

Utilizing funding from the Rocky Mountain Power Foundation gift to SER, WERC hosted over 250 elementary students for wind energy STEM programming.

Mechanical Engineering Capstone and Collegiate Wind Competition

WERC supported a Mechanical Engineering capstone team in the development of a wind turbine design that previously competed in the 2025 Collegiate Wind Competition sponsored by the U.S. Department of Energy.

The conference is designed to help students prepare for jobs in the wind and renewable energy workforce through real-world experiences with wind energy technology, project development, finance, communications, and outreach.

The design is well positioned to officially compete again in the 2027 competition.





**Model Wind Turbine
2025-2026**

Client: Dr. Michael Stoellinger





**Ethan
Bartholomew**



**Jonathan
Crider**



**Cade
Pugh**



**Brody
Greene**

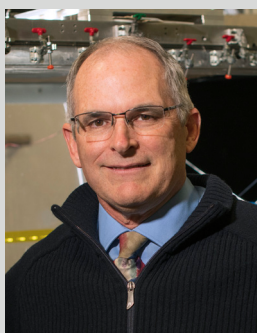


**Johan
Muscutt**



**Cullen
McGee**

ACCOLADES



WERC Co-Director **Jonathan Naughton** was selected to serve on the board of the North American Wind Energy Academy (NAWEA), which brings together researchers, educators, students, and industry partners across North America and around the world to catalyze innovative advancements in wind energy technologies. The board oversees NAWEA's governance and long-term direction, and helps set priorities that advance wind energy research, education, and collaboration across academia, industry, and national laboratories.

CENTER OF EXCELLENCE FOR PRODUCED WATER MANAGEMENT (CEPWM):

CEPWM provides innovative science and engineering research for application in energy industries that are economical and sustainable.

Impaired Water Research

Researchers in the CEPWM are advancing physicochemical and membrane-based water treatment technologies to enable the beneficial reuse of non-traditional, impaired water sources. This work directly addresses the growing demand for sustainable cooling water in energy-intensive infrastructure, particularly hyperscale data centers.

Critical Mineral Recovery

During FY26, CEPWM worked on developing innovative methods to extract rare earth elements from coal char sourced from Wyoming's Powder River and Greater Green River Basins. These extraction processes are integrated into broader systems for producing quantum dots and other carbon nanomaterials. Additionally, the team worked to advance membrane-based desalinization techniques to treat high-salinity produced water, aiming to enhance water reuse and improve brine quality for critical mineral recovery.



Select Publications

Bachmann, S., & Brant, J. (2026). Nanotube Alignment and Surface Chemistry in Altering Water and Salt Permeabilities for Imogolite-Polyamide Membranes. *Membranes*, 16(1), 20.

CENTER OF EXCELLENCE FOR AIR QUALITY (CAQ):

The CAQ is involved in research concerning emissions from oil and gas exploration and production activities, and methane monitoring and mapping technology.

Mobile Lab Research

The CAQ deployed the mobile lab to Salt Lake City to conduct high-resolution measurements of urban methane and volatile organic compound emissions. This field campaign was executed in close collaboration with atmospheric scientists at the University of Utah, leveraging the region's existing environmental monitoring networks to pinpoint emission sources and track urban air quality patterns.

CENTER FOR BIOGENIC NATURAL GAS RESEARCH (CBNGR):

CBNGR works to understand and enhance the unique geological and microbiological conditions in the Powder River Basin of Wyoming and Montana, which resulted in a vast biogenic coalbed methane resource. Additionally, utilizing the residue products from sugar beet refining as a key feedstock for its renewable natural gas (RNG) technology, the Center is working to create new market opportunities for growers.

Sustainable Aviation Fuel

In FY26, CBNGR submitted proposals to explore the integration of its innovative Biomass Carbon Removal and Storage plus RNG process to produce sustainable aviation fuel from sugar beet residues generated in Wyoming.

CENTERS OF EXCELLENCE

CENTER FOR ECONOMIC GEOLOGY RESEARCH (CEGR)

The mission of CEGR is to investigate solutions for the challenges in Wyoming's fossil fuel and mineral industries. CEGR research projects explore opportunities to use Wyoming's distinctive geology and resources in order to develop those opportunities, diversify Wyoming's economy, and to maintain competitiveness.

LEADERSHIP AND ACCOLADES

Autumn Eakin, Assistant Director

CEGR appointed Autumn Eakin as Assistant Director. Established to accelerate new administrative objectives for the growing research team, the newly created position provides essential guidance and leadership to the research team, and facilitates strategic growth and external partnerships.

Eakin plays a crucial role in optimizing the center's operations and expanding its impact with project partners, and positioning CEGR for continued growth and increased impact across its project portfolio.



John Jiao Retirement

Zunsheng "John" Jiao, a principal scientist in CEGR retired in FY26.

Jiao's professional career spans over four decades, characterized by a steady progression from academic instruction to high-level leadership in geological research. He leaves behind a profound legacy in Wyoming's energy, carbon management, and subsurface research.



WHO WE ARE

J. Fred McLaughlin, Director

Autumn Eakin, Assistant Director

Zunsheng 'John' Jiao, Program Manager, Subsurface Storage and Modeling

Tyler Brown, Program Manager, Minerals

Tim Fischer, Program Manager, Oil & Gas

Dan Eakin, Program Manager, Subsurface

Davin Bagdonas, Principal Research Professional, Coal and Rare Earth Elements

Charles Nye, Senior Research Professional and Project Manager

Bob Gregory, Senior Research Professional, Geochemistry

Matthew Johnson, Associate Research Professional, Geomodeling

Tao Bai, Associate Research Professional, Geostatistical Modeling and Machine Learning

Maryam Lakjaa, Assistant Research Professional, Petroleum Engineering and Finance

Cole Messa, Assistant Research Professional, Geochemistry

Sanzhar Begimbetov, Assistant Research Petrophysics

Yun Yang, Assistant Research Professional, Reservoir Modeling

NEW PROJECTS

ART STAR Project with Wyoming Rare, Inc.

CEGR, in partnership with Wyoming Rare (USA) Inc., was selected for a Seed Translational Acceleration of Research (STAR) Project award.

This competitive funding, provided through UW's National Science Foundation (NSF) Accelerating Research Translation (ART) award, will advance the assessment of potential byproducts associated with rare earth elements at the Halleck Creek Project in Wyoming.

CEGR Research Diversification:

CEGR expanded its research, funding, and industry partnerships in FY26. The Oil & Gas Team supported a proposal to develop an Energy Frontier Research Center at UW through the DOE's Office of Basic Research; the Subsurface Team advanced a research agreement with Black Hills Energy focused on enhanced coalbed methane recovery in northwest Wyoming; and the Minerals Team developed several NSF proposals, including an EPSCoR project with the University of Alaska.

CEGR also supported two geothermal research proposals, establishing a new area of investigation and continued collaboration with CERPA.

CARBON CAPTURE, UTILIZATION AND STORAGE

Spearheaded by the U.S. Department of Energy's Office of Fossil Energy, the Carbon Storage Assurance Facility Enterprise (CarbonSAFE) initiative aims to explore the capacities of subsurface formations to securely store 50 million or more metric tons of CO₂. SER leads four CarbonSAFE projects.

Wyoming CarbonSAFE Project: Phase III

After nearly a decade, Wyoming CarbonSAFE concluded in FY26. Achievements include drilling two test wells at depths below 9,800 feet; geologic modeling and reservoir characterization; National Environmental Policy Act analysis; a CO₂ transportation FEED study; baseline monitoring and risk assessment system; publications; and 10 underground injection control (UIC) Class VI permits. The project also pioneered public engagement, model pore space leases and unitization concepts, economic modeling, and pore space valuation that supported Wyoming Department of Environmental Quality procedures under state class VI primacy.

HERO Basalt CarbonSAFE

During FY26, the HERO CarbonSAFE was temporarily paused while under DOE project reviews. Before the pause, the project's stratigraphic test-well permit completed technical and interagency review. A six-month no-cost extension effective June 18th, 2026, enabled priority technical work project reassessment. CEGR's permitting work now provides a regulatory and technical template for other regional projects, helping streamline future permitting.

Williams Echo Springs CarbonSAFE

In FY26, the team safely drilled to 19,089 feet below land surface, reaching the Jurassic Morrison Formation. The program advanced wireline logging, acquired 85 rotary sidewall cores for characterization. Following the well, the team completed geomechanical testing, petrophysical analysis, and total-storage-system analyses. Early dynamic reservoir models and ongoing landowner and risk management studies support potential development planning.

Sweetwater Carbon Storage Hub

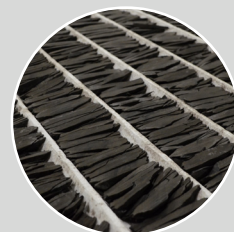
Frontier Carbon Solutions LLC (Frontier), in partnership with the SER, completed a second deep-characterization and injection well at the Sweetwater Carbon Hub. At 18,437 feet TVD, the J1-15 well is now the deepest Class VI carbon storage well ever drilled in the United States. Characterization and modeling efforts were paused in FY26 during the federal review initiatives.



OIL AND GAS

Mowry Shale Project

During FY26, Phase II of the Mowry Shale Project produced multiple publications advancing understanding of the Mowry Shale Petroleum System. Challenges remain to fully understand the complex geology and to identify economic and policy drivers to optimize the play. As the project moves to Phase III, industry participation will be critical for meaningful exploration and cross-sector collaboration.



RARE EARTH ELEMENTS AND CRITICAL MINERALS

Uncovering Wyoming's Lithium Potential

This FY26 project evaluates produced waters, geological materials, and technology solutions to characterize Wyoming's lithium-bearing resources and pair them with promising lithium extraction technologies. Having already compiled legacy data and analyzed initial field samples, the team presented preliminary findings at the Geological Society of America Conference.

Carbon Ore, Rare Earth Elements and Critical Minerals Phase II:

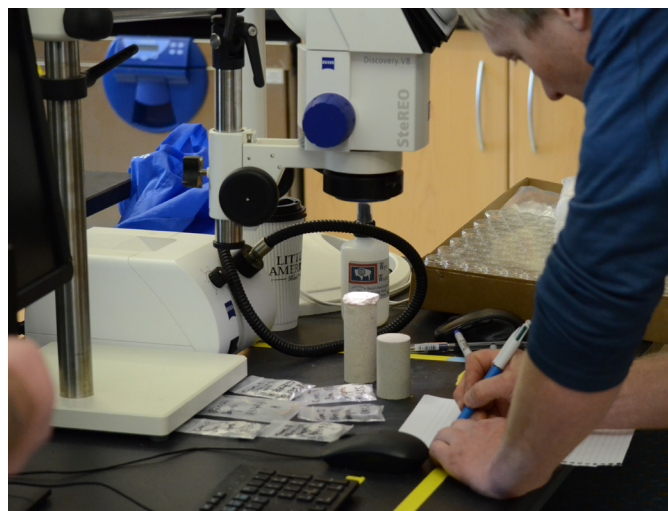
In late spring, DOE restarted negotiations of previously awarded Carbon Ore, Rare Earth Elements and Critical Minerals Phase (CORE-CM) Phase II projects supporting domestic conventional and unconventional critical mineral development. CEGR leads one project, co-leads another project with the University of Utah, and will support a project led by the University of Texas.

Critical Minerals in Coal

During the federal funding pause, CEGR's Minerals Team expanded industry-funded research to characterize critical mineral resources at Wyoming mine sites. This work is improving understanding of critical minerals associated with legacy energy resources and advancing a basin-scale model for mineral enrichment.

Dr. Cole Messa also expanded CEGR's critical mineral analytical capabilities and continued development of a service-center model within the Geotechnical Laboratory.

A researcher examines coal samples in SER's Geotechnical Laboratory



SELECT CEGR PUBLICATIONS

- **Bagdonas, D.A., Gregory, R.W., Messa, C.M., Phillips, E.H., and Brown, T.C.**, 2026, Rare earth element occurrence and distribution within the largest U.S. coal resource: Geochemical variability of Powder River Basin coals, Wyoming and Montana: International Journal of Coal Geology, v. 316, article 104964, 20 p.  *The study represents a first-of-its-kind explanation of rare earth element enrichment in Powder River Basin coals.*
- Nwankwo, I.V., Dejam, M., **Fischer, T.B.**, and **Quillinan, S.A.**, 2025, A comprehensive review on analysis of permeability measurements and surfactant enhanced oil recovery in shale: Physics of Fluids, v. 37, article 071305, 62 p.
- Ismail, T., and **Saraji, S.**, 2025, Raman spectroscopy of electrostatically isolated organic matter for thermal maturity assessment: A case study on the Mowry Shale: International Journal of Coal Geology, v. 312, article 104910, 12 p.

CENTERS OF EXCELLENCE

CENTER FOR ENERGY REGULATION AND POLICY ANALYSIS (CERPA)

The primary function of CERPA is to produce meaningful, high-quality, impartial analysis to inform policymakers, stakeholders, and the public about issues critical to the economic development of Wyoming's energy resources.



POLICY SUPPORT

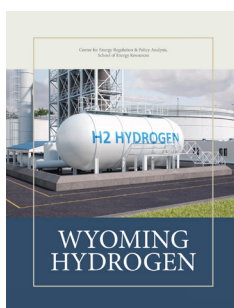
During FY26, CERPA provided policy support both internally and externally to SER. During the legislative session, CERPA closely monitored and tracked energy-related bills by providing daily updates of activity and committee meeting schedules. Outside SER, CERPA regularly engages with the Wyoming Governor's Office, the Wyoming Energy Authority, the Wyoming Mining Association, and the Petroleum Association of Wyoming.

SELECT PUBLICATIONS AND RESOURCES

CERPA published white papers and research briefs to inform lawmakers, the public, and industry in Wyoming on policy issues, regulatory challenges, or relevant topics of interest related to energy production and mineral development.

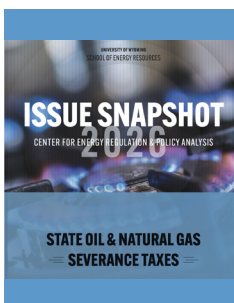
Wyoming Hydrogen

This publication evaluates the potential for developing a commercial hydrogen industry in Wyoming, including production methods, transportation options, storage opportunities, regulatory requirements, and market potential. It also analyzes possible economic impacts and offers policy recommendations to help Wyoming remain competitive in emerging hydrogen markets.



Issue Snapshot: State Oil and Natural Gas Severance Tax

This mini-paper provides a concise overview of the state oil and natural gas severance taxes, and examines Wyoming's fiscal reliance on mineral wealth compared to other major energy-producing states.



WHO WE ARE

Matt Fry, Director

Esther Wagner,
Senior Research Professional, Energy Policy

Seth Felbeck,
Assistant Research Professional,
Economics & Policy

CREW REPORTS

Consolidated Review of Energy in Wyoming (CREW) Report

During FY26, CERPA continued to produce the monthly issue providing data and information about Wyoming's energy sector.

The CREW Report summarizes key takeaways from current economic indicators; provides an overview of Wyoming's energy sectors, including crude oil, natural gas, coal, uranium, wind energy, soda ash and electricity generation; details employment trends; and provides updates on state tax collections.



CENTERS OF EXCELLENCE

CENTER FOR CARBON CAPTURE AND CONVERSION

The mission of the Center for Carbon Capture and Conversion (CCCC) is to develop new high-volume uses for coal and to explore new opportunities in an evolving carbon market. CCCC delves into the potential marketable properties of higher-value products from Wyoming coal. The technologies and products developed in CCCC are focused on large-scale, commercial application.



NEW PROJECTS

Wastewater Management in Coal-Based Power Plants

UW was selected for an award from the U.S. Department of Energy's Hydrocarbon and Geothermal Energy Office. The collaborative project is led by **Erica Belmont** (Mechanical Engineering Department in CEPS) and **Trina Igelsrud Pfeiffer** (CCCC). The project aims to improve water efficiency and reduce the volume of wastewater requiring management at coal-based power plants, and will evaluate the technical, environmental and economic viability of applying advanced thermal drying technology to bottom ash transport water.

Agricultural & Soil Fertility Products

Researchers in the CCCC began work on a project funded by the Wyoming Department of Agriculture-USDA examining carrot production with the use of coal char as a soil amendment.

Rare Earth Element (REE) Extraction from Coal, Coal Waste and Byproducts

The CCCC, in collaboration with the Minerals Team in CEGR, began work on a project to recover REE's from Wyoming coal waste and byproducts using a simple weak acid dissolution process. CCCC has been working closely with an industry partner to advance the process development of the extraction method. The efforts have created diversified funding and research opportunities.

ACCOLADES

American Society of Reclamation Sciences Conference

The American Society of Reclamation Sciences (ASRS) co-hosted its annual conference with UW's School of Energy Resources with a theme of "Landscapes in Reclamation."

SER-funded student, **Lauren Sielski**, won second place in the ASRS poster competition, where she presented on the effect and persistence of coal char as an agricultural soil amendment.

WHO WE ARE

Trina Igelsrud-Pfeiffer,
Director

Mark Behrens, Program Manager,
Technology Scale-Up

Marie Dudgeon, Senior Research
Professional, Chemical Engineering

Stefan Holberg,
Associate Research Professional, Chemistry

Eli Ellis,
Associate Research Professional, Mechanical
Engineering

Resham Thapa,
Associate Research Professional, Soil
Science

Louis Muller,
Assistant Research Professional, Chemical
Engineering

Yi Yao,
Associate Research Professional, Chemical
Engineering

UW FACULTY PRINCIPAL INVESTIGATORS

Kam Ng, Associate Professor of Civil and
Architectural Engineering

Michael Stoellinger, Associate Professor of
Mechanical Engineering

John Oakey, Professor of Chemical
Engineering

Jonathan Brant, Professor of Civil and
Architectural Engineering

RESEARCH AFFILIATES

Jeramie Adams, Western Research Institute

Paul Behrens, Senior Research Consultant



From left are Lauren Sielski, who placed second in the poster session competition; Dillon Romero, who took first in the oral presentation category; and Lindsie Farver, who won the poster session competition.

COAL REFINERY TECHNOLOGY

The CCCC has continued to advance its integrated coal processing technology, combining a fast pyrolysis process and a solvent extraction process, to efficiently decompose Powder River Basin (PRB) coal which yields high-value liquids and solids that are then used to create environmentally friendly, non-energy products.

Both processes are at a critical juncture in which scale-up is necessary in order to produce enough feedstock material for downstream manufacturing research.

Construction Activities

Construction of the pyrolysis field demonstration was 90% complete at the Wyoming Innovation Center (WylC) in Gillette, Wyoming, by the end of the fiscal year. In FY26, the project achieved an important regulatory determination that the Coal Refinery Field Demonstration Plant can be placed under the UW air permit. Utilizing PRB coal, the main product from the pyrolysis plant is coal char which is used to manufacture high volume products such as building materials and a soil amendment.



Start up and commissioning activities for the pyrolysis portion of the plant will take place in FY27, and construction to integrate the solvent extraction process into the system will commence in FY28.

SELECT COAL-TO-PRODUCTS

Graphitic Material

CCCC has advanced its coal-to-graphite research initiative by successfully completing the initial pyrolysis and material preparation phases using Greater Green River Basin (GGRB) coal from the Kemmerer mine. The raw coal has been converted into high-carbon char and processed through the densification step, finalizing the feedstock required for high-temperature synthesis. The project is now transitioning to the thermal conversion phase in FY27.

Coal Char Soil Amendment

Monitoring during FY26 has demonstrated that coal char soil amendments deliver significant improvements in soil health, highlighted by higher soil organic carbon levels and increased grass biomass compared to control plots. Reclamation efforts centered on two key Gillette locations—Peabody's NARM and NTEC's Cordero Rojo Mine—where field teams tracked vegetation establishment and collected soil samples for comprehensive soil health assessments. Alongside mine reclamation work, field monitoring in dryland environments progressed at the Sustainable Agriculture Research and Extension Center (SAREC) in Lingle, Wyoming, as well as cropland field operations focused on agricultural productivity.



SELECT CCCC PUBLICATIONS

Thapa, Resham B., Shilpakar, C., and Budhathoki, S., 2025, Effects of char and amendments on soil properties and sugar beet yield in sandy clay loam soil: Sustainability, v. 17, article 8132, 13 p.

Samir Budhathoki, Uche Igwe, Zaixing Huang, Mohan B. Dangi, **Resham B. Thapa**, Ramhari Paneru, Michael A. Urynowicz, Competitive CO₂/CH₄ adsorption and desorption in Powder River Basin coals: Implications for carbon storage, Energy, Volume 333, 2025, 137426, ISSN 0360-5442.

CENTERS OF EXCELLENCE

HYDROGEN ENERGY RESEARCH CENTER (H₂ERC)

The mission of H₂ERC is to identify and quantify the relative competitive advantages of Wyoming in an emerging low-carbon hydrogen economy. H₂ERC focuses



on all forms of hydrogen with: low-cost coal via gasification, massive natural gas resources via methane reforming, naturally occurring geologic hydrogen, and relatively high-capacity wind energy via electrolysis, as well as potential for solar, nuclear, and more.

PROJECT UPDATES

Supercritical Water Desalination and Oxidation with Steam Methane Reforming (SCWDO-SMR)

The two-part project combines a water desalination process paired with steam methane reforming to turn the disposable burden of produced water from oil and gas development into a clean energy asset to be sold to Pacific Northwest markets.

During FY26, the SMR unit was fully assembled on a fresh concrete pad poured for outdoor testing at property owned by Engineering, Procurement and Construction LLC in Cheyenne, Wyoming. This portion of the pilot plant is now ready for testing.



WHO WE ARE

Eugene Holubnyak, Director

Charles Nye, Senior Research Professional and Project Manager

Dayana Jones,
Assistant Research Professional, Energy Economics

Sarah Buckhold,
Assistant Research Professional, Mechanical Engineering

Robert Cincotta,
Assistant Research Professional, Chemical Engineering

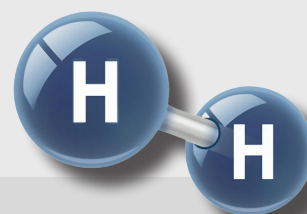
Haoming Ma,
Assistant Research Professional, Techno-Economic Analysis

IN THE NEWS

The SCWDO-SMR project generated considerable interest in the Wyoming media. Both **Eugene Holubnyak** and **Charles Nye** were guests on *Cowboy State Daily's* Morning Show to discuss the project, potential impacts for Wyoming, and provided a high level overview of hydrogen production in Wyoming.



The same media outlet published an article about the project and its ability to turn waste products from the oil and gas industry into a commodity for the hydrogen industry should it prove successful.



STUDENT FIELD COURSE

Geologic Hydrogen

H₂ERC hosted an immersive field course for industry partners and UW students as part of a geologic hydrogen project in Wyoming. Funded through private investment from Hestia Energy Corp. and matched through a state of Wyoming artificial intelligence (AI) state matching appropriation, the Wyoming Geohydrogen Exploration Project seeks to assess the occurrence of geologic hydrogen in Wyoming, using advanced AI and machine learning technology for precision modeling and mapping resources.

Over the course of a week, students traveled to multiple locations in Wyoming to collect water and mineral samples, determining the presence of geologic hydrogen.



CAPACITY BUILDING AT THE UNIVERSITY OF WYOMING

Make, Move, Use or Store Initiative

SER investment in UW faculty-led research across the hydrogen supply chain has resulted in several notable peer-reviewed publications and a growing ecosystem of hydrogen projects on campus.

Wyoming Innovation Partnership

Awarded through the Wyoming Innovation Partnership (WIP) initiative, UW's award for blue hydrogen research has generated extensive foundational research on production and carbon capture integration. That work is now resulting in a steady stream of new peer-reviewed publications and technical papers advancing regional clean energy strategies.

SELECT H₂ERC PUBLICATIONS

- Dabbaghi, E., **Ng, K.**, and **Brown, T.C.**, 2025, Impact of hydrogen storage on the characteristics and mechanical properties of trona deposits: *Journal of Energy Storage*, v. 132, article 117806.
- Wu, Z., Qin, D., and **Zhai, H.**, 2025, Life cycle emissions of diverse fossil-based hydrogen production pathways for transportation application: *Environmental Research Letters*, v. 20, article 114038, 14 p.
- Qin, D., **Zhai, H.**, and **Quillinan, S.**, 2025, Comparative life cycle water use assessment of diverse hydrogen production pathways: *Environmental Science & Technology*, v. 59, p. 25237-25250, 14 p.
- Mena, G., **Zhai, H.**, Pfeiffer, R., Medina-Rodriguez, B.X., and **Aryana, S.A.**, 2026, Unlocking Wyoming's coal resources for low-carbon hydrogen production: *Energy Conversion and Management*, v. 364, article 121699, 17 p.
- Tang, X., Luo, X., Di, B., and Tian, B., 2026, Public risk perception and behavioral responses to flood-triggered NaTech events: A field investigation in industrial areas of Luzhou, China: *Journal of Loss Prevention in the Process Industries*, v. 100, article 105914.
- **Cincotta, R.E.F.**, **Nye, C.**, and Yang, X., 2026, Advancing hydrogen production: A comprehensive review of wastewater reforming techniques, feedstocks, and opportunities: *Renewable and Sustainable Energy Reviews*, v. 230, article 116680, 26 p.

CENTERS OF EXCELLENCE

3D VISUALIZATION CENTER

The mission of the 3D Visualization (3D Viz) Center is to foster new knowledge and insight, support interdisciplinary research, and drive integration between research computing, data science, visualization, human interaction, and data-capture technologies by leveraging state and national opportunities.



NEW PROJECTS

ART/STAR award through National Science Foundation

The 3D Visualization Center was selected for a Seed Translational Acceleration of Research (STAR) Project award to expand its drone-based hyperspectral imaging and emissions-monitoring capabilities.

The program is part of the university's National Science Foundation (NSF) Accelerating Research Translation (ART) initiative.

Led by Principal Investigator **James Amato**, the award will support the purchase of a new heavy-lift drone platform and a controlled gas-emission testing campaign at METEC in Colorado, helping the Center improve data quality, extend flight endurance, and operate more reliably in Wyoming's challenging conditions.

Together, these investments strengthen UW's ability to deliver advanced remote sensing services for energy, environmental, and critical minerals research while supporting new partnerships and long-term service center growth.

Science Initiative Greenhouse Interactive Simulation

The 3D Visualization Center team created a simulation of the Plant Growth and Phenotyping Facility atop the UW Science Initiative building.

The project is the last major virtual reality development effort funded by the Wyoming Innovation Partnership program and will be freely available to all higher education institutions across the state.

The simulation walks participants through several scenarios, tasking them with controlling the internal temperature through systems available at the facility (ventilation, HVAC, and radiator bars) to optimize plant growth in both hydroponic and traditional soil configurations.

WHO WE ARE

Kyle Summerfield,
Program Manager and Lead Developer

James Amato,
Assistant Research Professional, GIS and Remote Sensing

Rachel Toner,
Assistant Research Professional, GIS and Remote Sensing

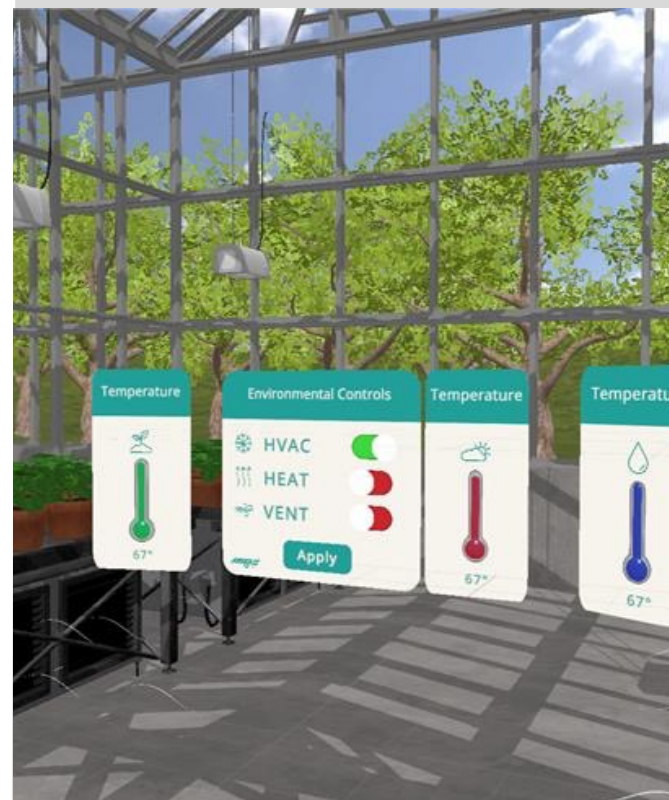
Cole James,
Assistant Research Professional, Asset Developer

Ayla Carncross,
Assistant Research Professional, Software Developer

Phil Black,
Assistant Research Professional, VR Development

CONTRACTORS

Jerry Evans, Mechdyne



RESEARCH

Remote Sensing Equipment Expansion

The GIS and UAS capabilities of the Visualization Center have grown to include a HySpex Mjolnir hyperspectral camera, whose capabilities include mineral identification of any exposed rock or ground surface.

Additionally, it acquired key lab and field accessories for the HySpex camera system, allowing the team to expand from primarily airborne imaging into both field-based and controlled laboratory hyperspectral imaging of drill core and hand samples. The new accessories include specialized tripods that enable vertical scanning configurations, broadening the range of field conditions and sample types the Center can image.

To support lab-based imaging, construction of a dedicated dark room commenced in FY26. The installation is designed for standard core boxes holding three 3-foot core sections, enabling efficient scanning and processing.

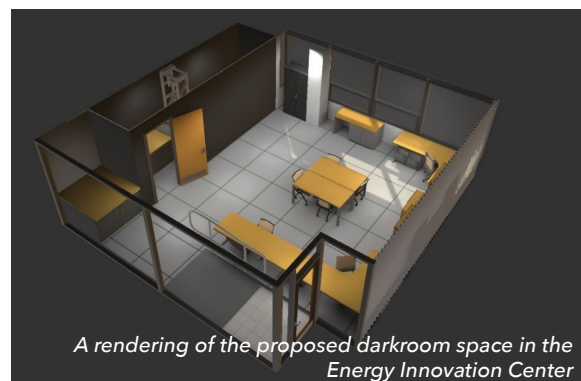
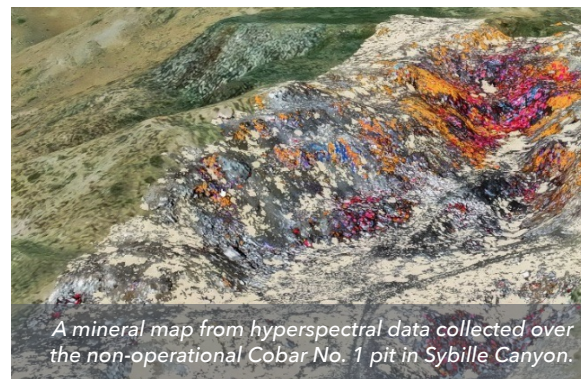
SER RESEARCH UNIT SUPPORT

Wyoming Class VI Site Characterization Database

In collaboration with SER's Center for Economic Geology Research, the 3D Viz Center is co-leading the Wyoming Class VI Site Characterization project. The collaborative project will create a data-verified Class VI geologic database providing a unique service to carbon storage developers and regulatory agencies for the state of Wyoming.

In FY26, the team finalized the database, refining the front-end application and associated functionality, and submitted the final technical documentation report.

The project boasts a robust backend database with hundreds of digitized and geolocated images, standardized nomenclature, and an intuitive and feature rich interface.



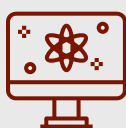
Technology Associate Program

The Technology Associate Program (TAP) in the 3D Viz Center is an internship program designed to train interns in virtual reality, animation, and augmentation software and techniques. Students are selected through a competitive application process and gain practical experiences through weekly lectures and modules in 3D modeling or programming.

6 Student Interns in the TAP Program in FY26



1 Studio Art Undergraduate



1 Computer Science Undergraduate
1 Computer Science Graduate



2 Visual Communications Undergraduates
1 Visual Communications Graduate

OUTREACH AND ENGAGEMENT

Outreach supports research and stand-alone efforts to engage with local, regional, national, and international stakeholders and community members on efforts within the School of Energy Resources to advance energy-driven economic development for the state of Wyoming.



LIVE EVENTS AND CONFERENCES

Rocky Mountain Land and Resource Management Conference

SER hosted – in partnership with the College of Agriculture, Life Sciences and Natural Resources, as well as the Student Chapter of Energy Resources – the Rocky Mountain Land and Resource Management Conference. Formerly known as the Rocky Mountain Professional Landman Conference, the in-person forum and student-led conference has expanded its scope, bringing together a cross-section of academic, industry, legal and business experts to discuss issues in land and resource management.

This year's conference focused on negotiations, entrepreneurship, innovation and stewardship in land and resource management, with Wyoming **Gov. Mark Gordon** providing the keynote address.

Landscape Discussion on Energy Law & Policy in the Rockies

Now held every other year, the forum focuses on timely energy-related legal, regulatory and policy issues relevant to Wyoming and the region. The conference is hosted by SER and the Gina Guy Center for Land and Water in the UW College of Law, as well as the Haub School of Environment and Natural Resources.

Featured topics included oil and gas and mining law updates, as well as panel discussions on nuclear spent fuel issues, emerging energy opportunities and federal permitting reforms.

Distinguished Speaker Series

SER Outreach brings energy leaders to campus to share cutting-edge research, the latest industry trends, and expertise on new energy technologies. FY26 featured 10 different speakers on varying energy topics.

WHO WE ARE

Christine Reed,
Director of Outreach and Energy
Resources Council Secretary

Sabrina Summerfield,
Marketing Outreach Coordinator and
Graphic Designer

Peighton Hayes,
Special Events Coordinator

MAJOR ACCOLADES

Sabrina Summerfield, was among four UW recipients to receive the Unsung Hero Award at Staff Recognition Day, a distinction recognizing individuals who consistently make significant contributions beyond their defined roles without seeking public acknowledgment.



Summerfield was recognized for her pivotal role in elevating SER's professional image through sophisticated, high-impact design and strategic outreach. By bridging the gap between complex technical research and public engagement, she translates intricate topics like carbon management and nuclear energy into visually compelling deliverables that resonate with diverse audiences.

Ultimately, Summerfield's behind-the-scenes creativity ensures that SER's mission is presented with a polished, modern aesthetic that bolsters its reputation as a leader in the energy sector.



COMMUNITY ENGAGEMENT

Energy Frontier: The Wyoming Landscape Podcast

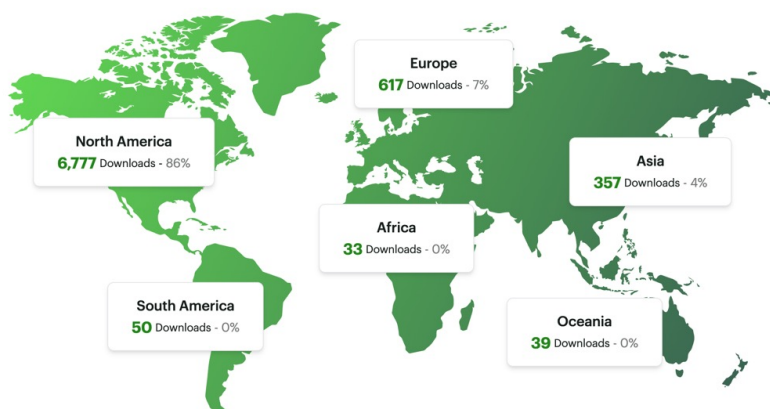
The SER podcast series, "Energy Frontier: The Wyoming Landscape," brings together academic researchers, industry professionals, students, policymakers and more to explore energy topics, including SER's research efforts and developing Wyoming projects.

In FY26, the podcast released 26 episodes on a bi-weekly schedule.



New Hosts

The podcast continues to thrive in listenership with Director of Cross-Cutting Programs **Erin Phillips**, as the new host. **Selena Gerace**, program manager of the Energy ELC program, has been introduced as a reoccurring guest host to provide the team with scheduling flexibility.



Total Download through FY26:
7,893

Total Episodes published through
FY26: 83

Ranked #23 on the 60 Best Podcasts in Wyoming

STEM Roadshow

SER continued its partnership with the STEM Roadshow organized by the UW Science Initiative. The Science Initiative Roadshow aims to build curiosity and empower discovery of the natural world through STEM outreach. SER participated by teaching students in K-12 classrooms through its new Energy Bingo activities. SER also participated in Senior Saturday, STEM Carnival, and STEM Sandbox events.

Wyoming Communities Visited in FY26

Laramie	Lovell
Rock Springs	Gillette
Cody	Douglas
Greybull	Pavillion

CONTINUING ENGAGEMENT ACTIVITIES

- Internal Newsletter and External Quarterly Newsletter
- Electronic News Blog and Collaborative Press Releases
- Social Media and Events

News Stories and Press Releases highlighting SER
faculty, staff, projects and events in FY26

75

FINANCIAL SUPPORT

The financial team at SER manages the standard appropriation from the Wyoming legislature, and administers the multi-million dollar research program funded by the state, the private sector and federal cooperative agreements (aka grants).



FINANCIAL TEAM ACCOLADES

Carrie Ver Burg was selected as the recipient of the Jodi K. Humphrey Inspirational Staff Award at Staff Recognition Day for her ability to inspire others through positivity, professionalism, and dedication.

Often behind the scenes, Ver Burg stands out as a pillar of SER, earning recognition for a decade of steadfast professionalism and a positive, mentorship-driven leadership style.



James Christensen was recognized with an Unsung Hero Award at Staff Recognition Day, a distinction recognizing individuals who consistently make significant contributions beyond their defined roles without seeking public acknowledgment.

Christensen was honored for his multifaceted role, where he expertly balances high-level financial oversight with essential operational support.



Frankie Vogt was named the UW Employee of the Quarter for the second quarter of 2026.

Vogt brings a deep-rooted commitment and a high level of professionalism to his work within the UW financial system. He holds both a bachelor's degree and a master's degree in accounting from UW, and his versatile career on campus includes serving as an accountant and business manager for the Office of Global Engagement and SER, a role he has held since 2022.



WHO WE ARE

Rachel Ferrell,
Director of Business Operations

Carrie Ver Burg,
Assistant Director, Business Operations

Cindy Ishkanian, Grants Manager

Frankie Vogt, Business Manager

James Christensen, Business Manager

Bailey Dagen, Business Manager

Kimi Takaki, Business Manager

Cole Swisher, Grant Accountant

PERSONNEL SUPPORTED BY SER FUNDING

Brilliant minds of faculty, staff, and students drive value-added research, and ultimately contribute to the energy industry and economy in Wyoming.

Operating as a hub to ensure that resources are allocated across UW in support of energy excellence and innovation, SER supported 303 people in departments across campus in FY26.

303 People

Faculty and Staff	120
Student Support	183
Graduate Assistants (94)	
Hourly, Non-Benefitted (89)	

FINANCIAL STATEMENT

STANDARD BUDGET ALLOCATION & EXPENDITURES

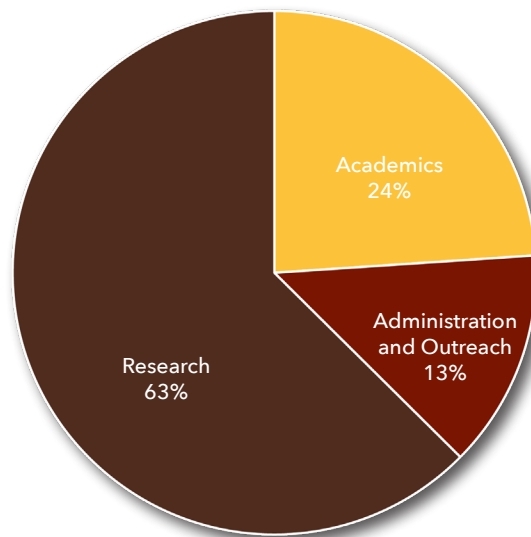
Fiscal Year July 1, 2025 - June 30, 2026

Academics
\$2,526,346

Research
\$6,603,977

Administration and Outreach
\$1,423,581

TOTAL:
\$10,553,904

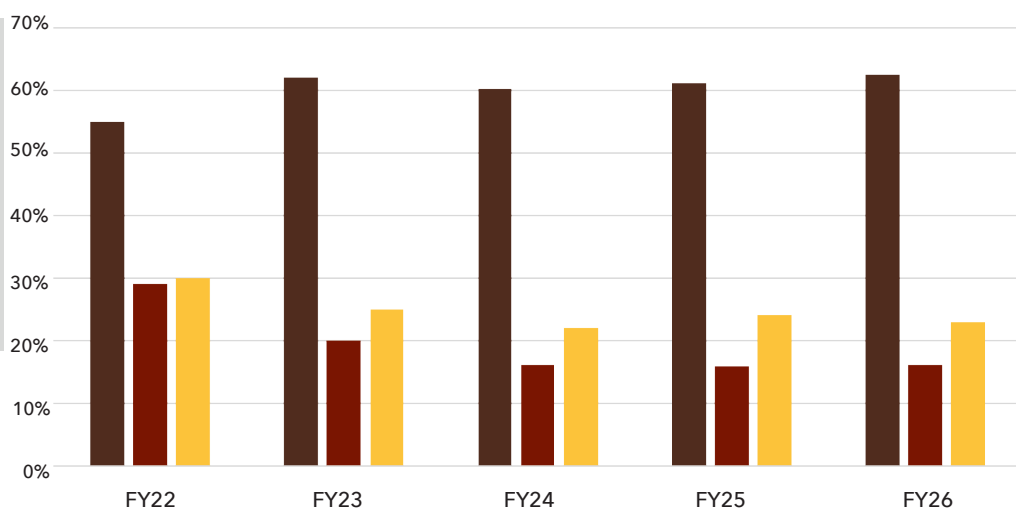


At a Glance

School of Energy Resources Standard Budget Allocations FY22 - FY26

Standard Budget Allocation

Research Administration & Outreach Academics



SPENDING BY COLLEGE

SER supports faculty, staff and students across UW to tackle Wyoming's most pressing energy issues.



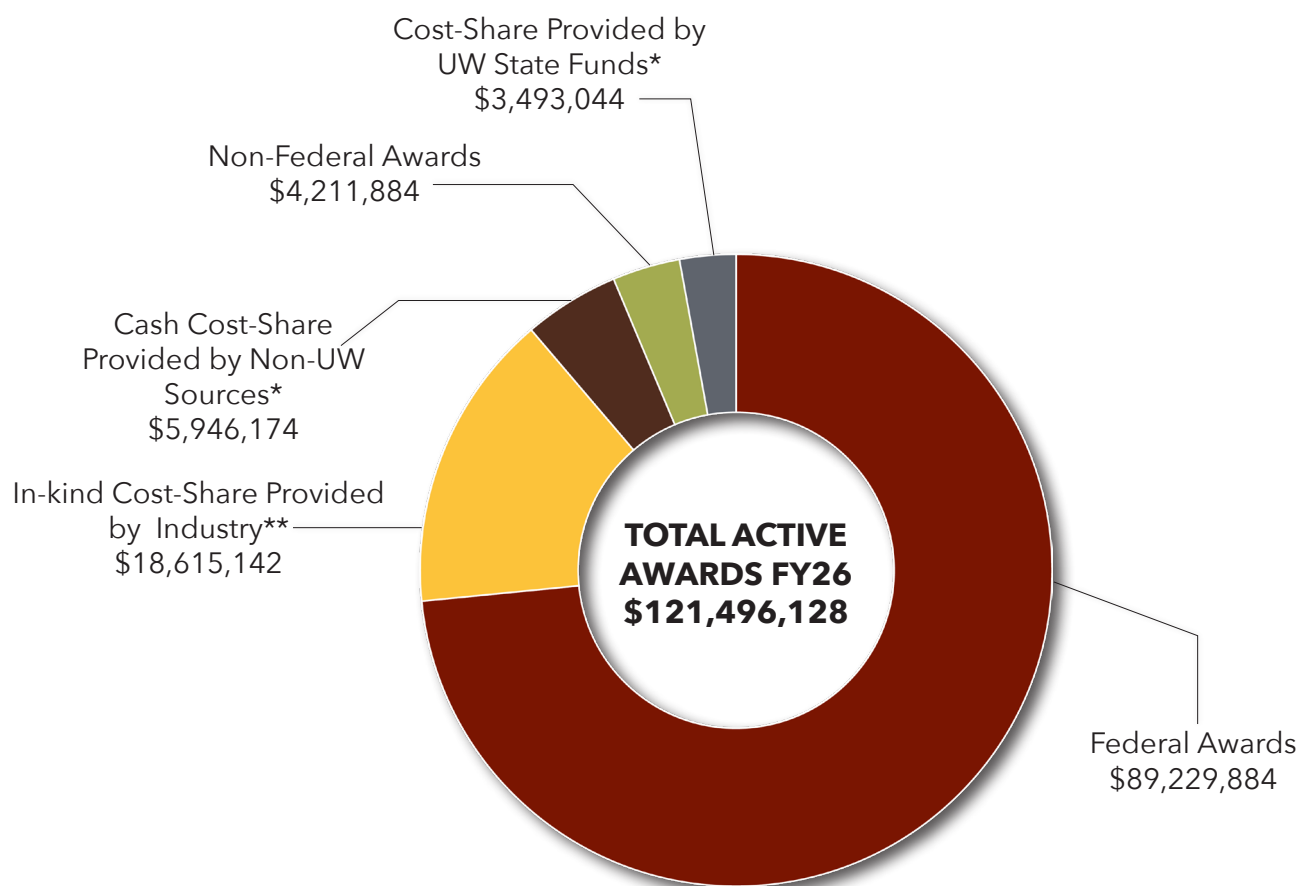
Total spending by college \$2,852,258

College of Engineering and Physical Sciences \$1,846,138	College of Business \$328,398	College of Law \$259,218	Center of Innovation for Flow Through Porous Media \$245,773	Haub School of Environment and Natural Resources \$105,548	College of Agriculture, Life Sciences and Natural Resources \$51,701	Ellbogen Center for Teaching & Learning \$14,482	Honors College \$1,000
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FINANCIAL STATEMENT

GRANT FUNDING

Exception funding consists of one-time State of Wyoming appropriations beyond SER's annual budget for strategic energy initiatives, including carbon engineering, coal commercialization, hydrogen, nuclear energy, oil and gas research, and lithium extraction. The chart below shows when funding was allocated; funds support designated purposes and are spent over multiple years as projects progress.



Awards Funded.....	49
UW Departments Funded.....	8
Principal Investigators Supported.....	25
Internal SER P.I.s	15
External UW Dept. P.I.s	10

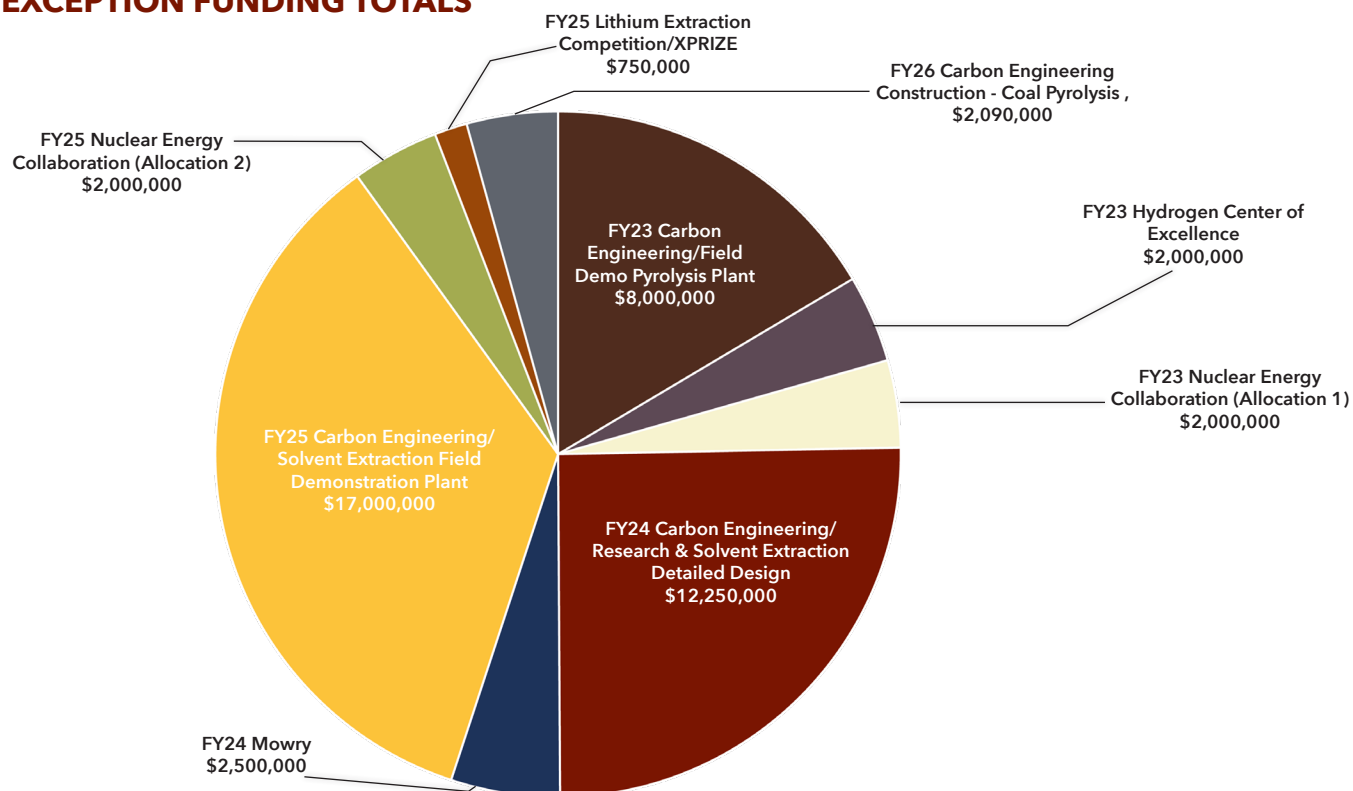
*Cost-Share -Financial resources contributed to a sponsored project in addition to the sponsor's funding. These contributions may come from SER, industry partners, or the State.

**In-kind Cost Share - Non-cash contributions that outside organizations provide to UW free of charge, such as services, software, data, or equipment. The value of these contributions counts toward the project's required share of costs.

***These awards were active at various points throughout FY26, with some closing during the fiscal year.

EXCEPTION FUNDING

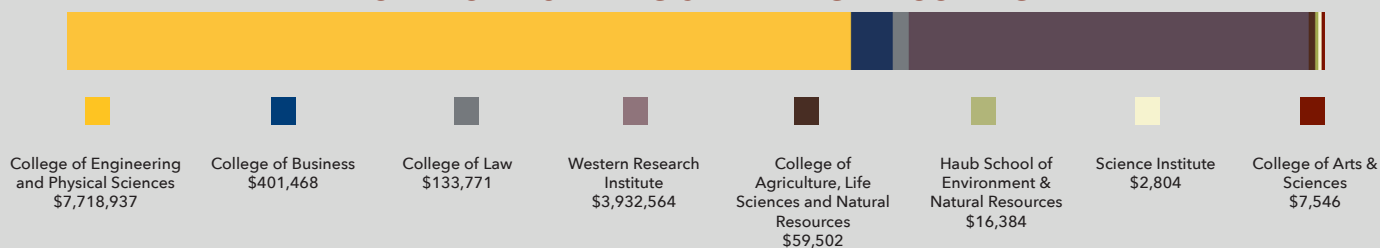
EXCEPTION FUNDING TOTALS



FUNDING ALLOCATION AND TOTAL SPENDING THROUGH FY26

	SPENDING THROUGH JUNE 2026		EXCEPTION FUNDING TOTALS
FY23 Carbon Engineering/Field Demo Pyrolysis Plant	\$	8,000,000	\$ 8,000,000
FY23 Hydrogen Center of Excellence	\$	1,872,626	\$ 2,000,000
FY23 Nuclear Energy Collaboration	\$	1,713,528	\$ 2,000,000
FY24 Carbon Engr/Research & Solvent Extraction Detailed Design	\$	12,250,000	\$ 12,250,000
FY24 Mowry Shale Project \$2.5M	\$	2,175,436	\$ 2,500,000
FY25 Carbon Engineering/Solvent Extraction Field Demonstration Plant	\$	5,108,479	\$ 17,000,000
FY25 Nuclear Energy Collaboration (Allocation 2)	\$	374,916	\$ 2,000,000
FY25 Lithium Extraction Competition/XPRIZE	\$	582,834	\$ 750,000
FY26 Carbon Engineering Construction - Coal Pyrolysis	\$	5,400	\$ 2,090,000
Total	\$	32,083,219	\$ 48,590,000

EXCEPTION FUNDING SPENDING BY COLLEGE



FOUNDATION ACCOUNTS

Fiscal Year July 1, 2025 - June 30, 2026

The School of Energy Resources benefits from a portfolio of endowed and expendable philanthropic funds established through the generosity of individuals, foundations, and industry partners. These funds provide important resources that advance SER's work in energy education, research, student support, outreach and engagement. Each fund is governed by donor-directed criteria that define its intended purpose, ensuring philanthropic support is used in alignment with donor intent while advancing the mission and priorities of SER. \$2.1M in support was expended from SER's gifted funds.

Endowed Funds

Arch Resources Technology and Sustainability Fund
Christine A. Barry Nuclear Energy Student Enrichment Fund
ConocoPhillips CO₂ Storage Excellence Fund
J.E. Warren Chair for Energy & Environment
J. Todd and Morgan Creeger Enrichment Fund in the School of Energy Resources
James E. Nielson Excellence Fund for the School of Energy Resources
John & Jane Wold Centennial Chair Energy
John P. Ellbogen Foundation Nuclear Energy Research Center Fund
Kenneth G. Burnes Endowment in the Center for Carbon Capture and Conversion
Marathon Interdisciplinary Fossil Fuel Research Lab
Navajo Energy Transitional Energy Company School of Energy Resources Excellence Fund
Occidental Chair in Energy and Environmental Technologies
Occidental Chair of Energy and Environmental Policies
Tallgrass CO₂ Storage Excellence Fund
Williams CO₂ Storage Excellence Fund
Wold Foundation Oil and Gas Student Success Excellence Fund
Wyoming NOW (nuclear, onshore wind and more) Fund
York Future of Energy Excellence Fund

Expendable Funds

Center for Excellence in Produced Water Management Research
Charles Koch Foundation UW Energy Policy Fund
EOG Resources Reclamation Fund
ExxonMobil K-12 Energy Education & Workforce Development Initiative
Hassler Family Energy and Emerging Opportunities Fund
Hydrogen Energy Research Center, supported by Williams
Integrated Testing Center Investment Fund
John and Karen Morgan Next-Generation Mining Technology Fund
Kemmerer Mine Carbon Innovation & Technology Fund
Kenneth G. Burnes CO₂ Storage Excellence Fund
Martin Knauss Energy Student Enrichment Fund
NextEra Energy Resources Excellence Fund in Professional Land Management
Non-Endowed Chair in Subsurface Energy and Digital Innovation
Peabody Education, Innovation and Technology Fund
PureWest Energy Natural Gas Research Fund
Rita Meyer Nuclear Energy Excellence Fund
School of Energy Resources Building Fund
School of Energy Resources Discretionary Fund
School of Energy Resources Professional Land Management Program
School of Energy Resources Reservoir Characterization Collaboratory

SER ENDOWMENT AT A GLANCE



\$26,229,942
Total Endowment Market Value
(as of June 30, 2026)



\$1,050,800
Estimated Payout for FY27
(as of June 30, 2026)

Endowments are philanthropic funds invested for perpetual support, with an annual distribution made available to support the donor-designated purpose while preserving the fund's long-term impact.

SELECT MAJOR GIFTS

J. Todd and Morgan Creeger Enrichment Fund

A gift from **J. Todd** and **Morgan Creeger** established J. Todd and Morgan Creeger Enrichment Fund in the School of Energy Resources to support student scholarships and hands-on learning experiences, including research opportunities, conference participation, study abroad, and conference-related expenses. The gift is dedicated to supporting student success in educational or enrichment opportunities inside and outside the classroom.



John and Karen Morgan Next-Generation Mining Technology Fund

A key gift from **John L. Morgan** and his wife, **Karen**, established the John and Karen Morgan Next-Generation Mining Technology Fund. The fund fosters excellence and supports research, development, and innovation within SER. It focuses on the development of next-generation mining and extraction technologies that utilize artificial intelligence to target and recover critical minerals from the subsurface.

Marilyn Lynch Multidisciplinary Advanced Stimulation Laboratory

A transformative \$1 million gift from **Richard** and **Marilyn Lynch** has made possible the creation of the Richard and Marilyn Lynch Multidisciplinary Advanced Stimulation Laboratory in the University of Wyoming's Department of Energy and Petroleum Engineering.

The gift will advance cutting-edge research and education aimed at improving primary recovery in unconventional energy reservoirs.

Housed in the Science Initiative Building, the new laboratory serves as a multidisciplinary research hub integrating geomechanics, fluid dynamics, advanced reservoir characterization and artificial intelligence.

Through a partnership between SER and the College of Engineering and Physical Sciences, the lab addresses critical industry challenges associated with unconventional reservoirs, which are characterized by low-quality rock and high capital investment requirements.

DONOR SPOTLIGHT

Rocky Mountain Power Foundation

Support from the Rocky Mountain Power Foundation helped advance research and student engagement across three Centers of Excellence at the University of Wyoming's School of Energy Resources—the Wind Energy Research Center, the Center for Energy Regulation and Policy Analysis, and the Nuclear Energy Research Center.



MAKE A GIFT

Contact the UW Foundation



Angela Ver Ploeg,
Senior Director of Corporate
Engagement
307-766-1939
angela.verploeg@uwyo.edu



Teddi Freedman,
Senior Director of
Development
307-766-6300
teddi.freedman@uwyo.edu

OUR GENEROUS DONORS IN FY26

Amanda L. Stinson	Jake and Brenda Haseman	Peabody Energy Corporate Headquarters
America Online Giving Foundation	Jennifer R. Thomson	Preston T. Farnsworth
Andrew Allen Charitable Foundation	Jim and Kandis Ford	Randy Reed
Ayco Charitable Foundation	Joe Icenogle	Rita C. Meyer
Baker & Hostetler	John L. and Karen P. Morgan	Robert C. Balsam, III
Beatty & Wozniak Energy at Law	John P. Ellbogen Foundation	Robert J. and Sonni Anderson
Beatty & Wozniak, P.C.-Headquarters	Jon D. and Sara Wilcox	Sam Mallory
Bryan G. and Kari Hassler	Kate A. Schulz	Scott A. and Kirsten Quillinan
Caroline Shanor	Kathi Hanson	Shane C. Schulz
Carrie A. Ver Burg	Katie Schwieger	Shanor & Franklin LLC
Christine and Christopher Reed	Kemmerer Operations, LLC	Skip and Aeri York
Cynthia S. Ishkanian	Kit S. and Teddi Freedman	Tallgrass Energy
Dan Crumb	Klym Land Services LLC	Tara K. Righetti
Dave and Melanie True	Kristen E. and Christian Pritchett	The Cynthia and George Mitchell Foundation
Desa M. Bennett	Kurtis J. and Christi Barry	Theresa M. Sauer
Devon Energy Corporate Headquarters	Kyi P. Khant	Thomas E. and Angela C. Ver Ploeg
Disa Tech, Inc.	Lawrence J. and Jennifer Wolfe	Trevor S. Turmelle
Double 4 Foundation	Lindsey Stinson	True Companies-Headquarters
Douglas E. Brooks	Lisa M. Brooks	True Oil LLC
Duke and Heidi Cooley	Lynn D. Middelstadt	Tulsa Community Foundation
Enbridge, Inc.	Maohong Fan	Uranium Energy Corp.-Headquarters
EOG Resources Headquarters	Marc R. Strahn	Vibe Water LLC
Kris and Ewa C. Koski	Mark Behrens	Wave Petroleum Operating, LLC
Fidelity Charitable Gift Fund	Martha D. Reisch	Wayne Rich
Frankie and Abby Vogt	Mary A. Green	Waypoints Wyoming
Fred Eden	Matthew J. Fry	Welborn, Sullivan, Meck & Tooley, P.C.
Fred McLaughlin and Alisa Kim	Michael S. and Julie Hill	William N. and Susan Heiss
Friets Menanti	Michelle L. Hilaire	WRC Energy, LLC
Gene A. and Susan S. Aydinian	Morgan L. and J.T. Creeger	Wyoming Association of Professional Landmen
Gene R. Strid	Morgan M. Horbatko	Wyoming Rare (USA) Inc.
Gwen Andela	Navajo Transitional Energy Company (NTEC)	Xiang Zhang
Haibo Zhai	NextEra Energy, Inc.	Zachary W. Barr
Hamp Smith	Pacer Energy, LLC	
Heather E. Chandler	Pamela J. Sajec	
Holland & Hart LLP	Paul J. and Jeanne Hickey	
Holly Krutka and Mark Watkins		



School of
Energy Resources