

Nuclear Energy Research Capacity Building

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Senior Director, Research
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Prepared for the
Joint Minerals, Business
& Economic Development Committee

July 18, 2023

THE WORLD NEEDS MORE COWBOYS.



UNIVERSITY
OF WYOMING

School of
Energy Resources

Nuclear Capacity Building

- 2022 WY Legislature appropriated \$2M to SER to build capacity at UW
- Capacity building: Improvement of an organization's capability and facilities to produce, perform, and deploy
- SER created the Nuclear Energy Research Center

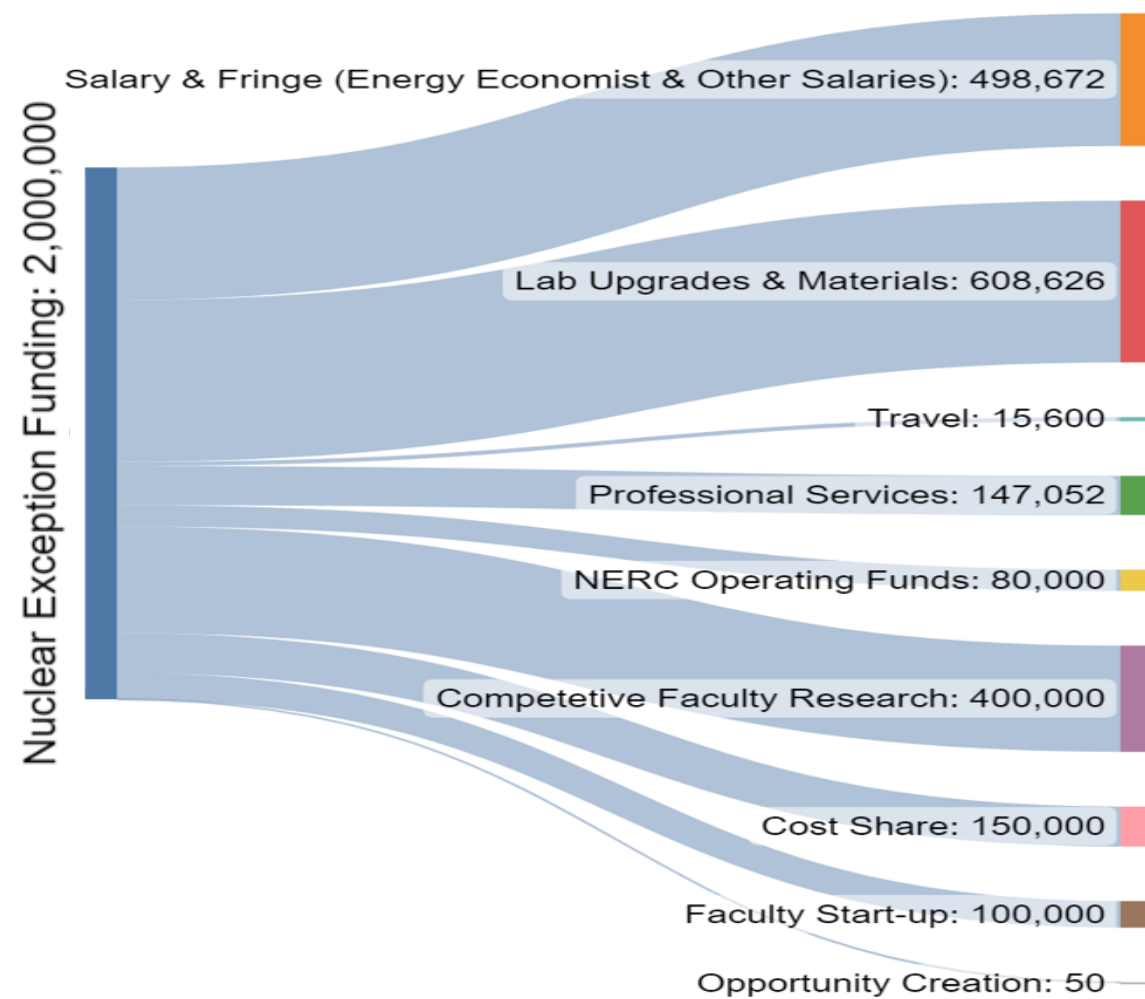
"We have made significant progress in our efforts through NERC to build capacity and interest in nuclear energy at UW, the ultimate success of these initiatives will depend on advancing the laboratory infrastructure to enhance nuclear-focused research and teaching activities moving forward." Dr. Caleb Hill NERC Co-director



Nuclear Exception Funding

Highlights of Funding Use To-Date:

- ✓ Start-up and operating funds for SER Nuclear Energy Research Center
- ✓ Start-up and salary for new faculty
- ✓ Competitive faculty research
 - Caleb Hill-(600k) to establish Nuclear Chemistry Core Facility
 - Haibo Zhang and Selena Gerace- (200k) to conduct economic study of small modular reactor and micro reactor manufacturing in Wyoming
 - Brad Carr (200k) to develop remote sensing technologies for uranium exploration
- ✓ Cost share to DOE grants which allows for:
 - New faculty hire
 - Develop a nuclear chemistry laboratory
- ✓ Natural resource economist (2 yrs.), Center for Business and Economic Analysis to work on nuclear related studies for SER



Nuclear Energy Research Center

Nuclear Energy Research Center (NERC)

Highlights:

- Nuclear Energy Research Center is up and running
 - Assembled stakeholder advisory board
 - Mapping nuclear energy expertise on campus
 - Draft plan for research infrastructure: lab space, equipment, necessary safety and security specs
 - Recruiting expertise
- 5-year strategy in development

UW School of Energy Resources Names Nuclear Energy Research Center Co-Directors



NERC co-directors Caleb Hill (Chemistry) and Tara Righetti (SER-Law)

External Funding

Direct Funded Research:

- **Nuclear Regulatory Commission**
 - NERC Faculty Scholars Program - \$599,999 – Caleb Hill (Chem) & Tara Righetti (SER-Law) - *Funded*
- **Department of Energy – Nuclear Energy University Program**
 - Open Architecture for Nuclear Cost Reduction - \$200,000 – Tara Righetti (SER-Law) & Selena Gerace (SER)– *Funded*
 - Engaging Wyoming Communities in an Environmental Justice Approach for Advanced Nuclear Energy Facility Siting - \$800,000 – Rachael Budowle (Haub), Tara Righetti (SER-Law), Temple Stoellinger (Haub), Matthew Henry (Haub), Steve Smutko (Haub) – *Funded*
- **Department of Energy – Consolidated Innovative Nuclear Research**
 - Interfacial Electric Fields as a Tool to Control Fuel Cycle Separations – Nuclear Science User Facilities – Caleb Hill (Chem), Robin Rogers (Wyonics), Kristin Di Bona (Wyonics) - \$300,000 – *Funded*
 - Establishing A Nuclear Chemistry Core Facility at the University of Wyoming – General Scientific Infrastructure – Caleb Hill (Chem), Robin Rogers (Wyonics), Kristin Di Bona (Wyonics) - \$826,157 – *Submitted*
- **Department of Energy – Microreactor Program**
 - Microreactor Applications in U.S. Markets - \$77,428 – Tara Righetti (SER), Eugene Holubynak (SER), Selena Gerace (SER) – *Funded*

Program Development Funding:


Battelle Energy Alliance - \$341,615

Foundation Funds:

- **Rocky Mountain Power Foundation** - \$12,500

Knowledge Transfer

ENERGY RESOURCE MGMT/DEV
FUNDAMENTALS OF NUCLEAR ENERGY
Fall 2023





Special topics in contemporary energy development and management will be offered in response to changing industry and academic demands. The specific subject matter is based on faculty requirements and workforce innovation.
Prerequisite: QA and an (SB or SP or SE course)
Course Number: 4990
CRN: 16592
Lecture: Traditional

TUESDAYS & THURSDAYS
9:35 AM - 10:50 AM

Taught by: Dr. Mary Lou Dunzik-Gougar Ph.D. in Nuclear Engineering

Want to enroll in this course?
Email your advisor and sign up with the information above!

UW SER to Host Academic Workshop to Promote Nuclear-Related Research Opportunities



MARCH 9, 2023

"In order to reach any net-zero goals, dramatic growth in nuclear-related research is needed, as well as increased support from government, utilities and the public," Righetti says.

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