



University of Idaho

Department of Nuclear Engineering and Industrial Management

NEWS

Message from the Chair

Dear Friends,

I hope 2023 is going well for you thus far.

I pause and marvel at all that our burgeoning department has achieved this last year. Our faculty continues to accomplish great things. Our students are learning and growing and contributing to their companies and communities. Our department is expanding and maturing.

The NEIM department is comprised of four programs: Engineering Management, Technology Management, Nuclear Engineering, and Industrial Technology, along with other associated certificate programs. We are based in Idaho Falls; however, we serve a large swath of students in various locations, including Boise, Coeur d'Alene, and Moscow.

Last August, Dr. Suzanna Long joined the College of Engineering as the new dean. I am pleased to note that she is also a tenured faculty member in our NEIM Department. She brings a wealth of experience in academic leadership, industry collaboration, successful research, external funding, and strategic management to the College of Engineering.



*Dr. Indrajit Charit
Department Chair and Faculty Member
Nuclear Engineering and Industrial Management*

Another new face to our Idaho Falls team is Dr. Krishnan Raja. Raja teaches Principles of Nuclear Engineering, Degradation of Nuclear Materials, Nuclear Components Inspection, and Radiation Detection and Shielding. He is a great asset that brings years of experience in both teaching and research areas.

Our NEIM faculty members and affiliated faculty are continuously striving for excellence. They have been submitting proposals and becoming successful in winning external grants and contracts. They have won prestigious awards and honors.

(Continued next page.)

IN THIS EDITION

FACULTY NEWS – pages 3-8

STAFF NEWS – page 9

NEW ADVISORY BOARD MEMBERS – page 10

AFFILIATED FACULTY NEWS – pages 11-12

STUDENT NEWS – pages 13-17

KEEP IN TOUCH WITH NEIM – page 18

Natalie Petersen joined as our department administrative assistant last October. She has been very helpful in smooth running of the department, and I can breathe a sigh of relief with her being here.

To support our outstanding team are three new NEIM advisory board members: Dennis De Leon, M. Engr, CPEM (Micron); Andrew Hoffman, Ph.D. (GE); Jonathan Webb, Ph.D. (Northrop Grumman). They bring valuable insight to our department and we will all benefit from this.

Our students excelled last year both in and outside of the classroom. From student projects that are bioleaching rare earth elements, to a student simultaneously learning and teaching at the University, to helping food scarcity in the community, to graduating 53 years after starting his college path, our graduates have made us tremendously proud with their accomplishments. We anticipate seeing great things yet to come from these students as well as our current and future students.

In order to see continued growth, we ask for your generous help and support for the NEIM department. Your generous contributions in the past have helped our students' academic careers in the nuclear energy and industrial management fields and we are immensely grateful for that.

We look forward to another bright year of changes and progress. Go Vandals!

Indrajit (Indy) Charit
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New Faculty Member Krishnan S. Raja

August 2022

Krishnan S. Raja (Raja) joined the Department of Nuclear Engineering and Industrial Management as a temporary faculty member in August 2022. He teaches Principles of Nuclear Engineering, and Degradation of Nuclear Materials in the fall 2022. In the spring, he will teach Nuclear Components Inspection and Radiation Detection & Shielding.

His areas of research are: Environmental degradation of nuclear materials, pyro processing of used nuclear fuels, molten salt reactors, molten salt batteries, additive manufacturing of nuclear components for micro-reactors, and electrochemical engineering. Currently he is working on a DOE-EERE funded project entitled, “Innovative Technology for Continuous, Online (in situ) Monitoring of Corrosivity of Molten Salts to Prevent Catastrophic Failure of Solar Thermal Plants.”

Prior to joining Idaho Falls Center, Raja was a tenured full professor of the erstwhile Materials Science and Engineering Program of the University Idaho at the Moscow campus. Raja lives in Ammon with his wife of 33 years. They have two adult sons. His elder son is a physician (internal medicine) and serves in the U.S. Airforce as a flight surgeon. His younger son is a hospitalist and an assistant professor of Internal Medicine at the Wexner Medical Center of the Ohio State.

NIH/IMCI approved the budget of one additional year (FY23) for MIDA Lab’s project on early breast cancer detection

July 2022

An NIH-COBRE (*Centers Of Biomedical Research Excellence*) Phase II Grant was awarded to IMCI (Institute for Modeling Collaboration and Innovation) in 2020. The grant supports the project “Deep learning for breast ultrasound tumor detection,” by the PD Dr. Min Xian, and Co-PD Dr. Alex Vakanski, and it supports two Ph.D. students, for the period from July 1, 2020 to June 30, 2023. The goal of the proposed project is to overcome current limitations in computer-aided diagnosis of breast tumors by building tumor segmentation methodologies that are robust to variations of image quality. To achieve the goals, the project team is developing a deep-learning framework that integrates prior domain information related to visual saliency of tumors and breast layers anatomy in ultrasound images.



IGEM Award for Environmentally Friendly Extraction and Processing Techniques Headed by Dr. Mirkouei

March 2022

A collaborative project led by University of Idaho Assistant Professor Amin Mirkouei and industry partner Idaho Strategic Resources recently received a \$440K award from the Idaho Global Entrepreneurial Mission (IGEM). The project, which includes researchers from University of Idaho, Idaho National Laboratory, the Center for Advanced Energy Studies, Idaho Geological Survey, Idaho State University, and Idaho Strategic Resources, explores new techniques for drilling and extracting (bioleaching and agromining) rare earth elements.

Mirkouei's project focuses on environmentally friendly extraction and processing techniques for several Idaho-based rare earth elements: neodymium (Nd), praseodymium (Pr), and yttrium (Y). It has the potential to lessen the nation's dependence on other countries for rare earth elements (REEs) used in a variety of products, including high-performance magnets, advanced materials such as alloys for aircraft engines, and lasers. "This project capitalizes on the university's research strengths in mining, as well as utilizing key partnerships and expertise around the state," said Idaho Commerce Director Tom Kealey. The outcome of this IGEM public-private research project could have a profound economic impact on Idaho's mining industry.

The industry partner, Idaho Strategic Resources, plans to conduct roughly \$1 million worth of rare earth element drilling on its Diamond Creek property near Salmon and will supply core samples to the



researchers. "Rare earth metals are essential to the United States' security and for advancing technologies. It is imperative that sources of these metals are found and developed here. It will benefit the country and the state of Idaho," said UI, Idaho Falls Center Executive Officer and Professor Lee Ostrom.

This project consists of four steps, and UI will lead two, including extraction techniques from drilling samples and sustainability assessment studies (techno-economic and environmental impacts analyses).

"This partnership will set baselines for future studies and contribute needed incentives to attract new commercial operators in the region and the state territory at large," Mirkouei said. "We anticipate that Idaho-sourced REEs research and development in the long term would improve domestic land-use and bioeconomy, have positive economic impacts on Idaho and help the nation to reduce reliance on foreign REE resources and other critical minerals."

2022 University of Idaho Interdisciplinary and Collaboration Excellence Award Received by Dr. Mirkouei January 2022



Dr. Amin Mirkouei is in his fifth year as a tenure-track Assistant Professor in Department of Nuclear Engineering and Industrial Management (NEIM), and an affiliated faculty of Mechanical Engineering (ME), Biological Engineering (BE), and Environmental Science (ENVS) Departments at University of Idaho (UI) in Idaho Falls campus. His research group, [Renewable and Sustainable Manufacturing Laboratory \(RSML\)](#), has conducted several interdisciplinary and multidisciplinary projects, such as chemical and biochemical compound production from biomass feedstocks or urban wastes; water treatment in the aquaculture industry in southern Idaho; rare earth elements exploration and recovery from electronic wastes and ore in Idaho; and precision agriculture, soil-plant health improvement, and food processing.

Dr. Mirkouei has been collaborating with over 10 different federal/state organizations and regional companies, such as USDA-ARS, INL, MagLab, Riverence LLC, IDR Inc., UI-ARI, IWRRI, IGS, CEI, and CAES. He has received several grants/support for over \$1.1M (out of \$2.8M) from state/federal agencies, such as USGS, IGEM Department of Commerce, NSF, MagLab, INL, CEI, and UI ORED.

His university and international engagements are exemplary. Currently, he is a Sustainability Contributor at Forbes Magazine, UI President's Sustainability Working Group member, and University Safety & Loss Control Committee voting member. He also has served as a state and federal agency panelist, such as USDA and NSF; IMDP Sustainability Journal editorial board member; ASME conference/symposium organizer; and journal/conference reviewer. He has published/co-authored 40+ articles in scientific journals and peer-reviewed conference proceedings. Dr. Mirkouei's dedication led him to more responsibility, serving as instructor, advisor, and mentor, which involved the supervision of 20+ undergraduates and 17 graduates in TM, ME, BE, and ENVS, and one post-doctoral scholar.

Since joining UI, he has taught several courses in different departments and graduated 7 MSc students in TM, ME, BE, and ENVS. He is currently advising 4 PhD students and 6 MS students in different departments. These experiences required him to learn new knowledge, skills, and technologies and to transfer that knowledge to students in a one-on-one or one-to-group manner, such as design and manufacturing software and machines.

National Science Foundation Grant Awarded to Dr. Mirkouei

September 2022

The National Science Foundation (NSF) awarded Dr. Mirkouei a grant through their Office of Advanced Cyberinfrastructure (OAC) in the amount of \$359,828. Amin Mirkouei is the principal investigator, and Xiaogang Ma is the co-principal investigator.

This collaborative research is for CyberTraining of Construction (CyCon) Research Workforce Through an Educational and Community Engagement Platform. The construction sector is a major contributor to the U.S. economy. It represents over 4% of the U.S. GDP, equivalent to 1.36 trillion dollars.

Despite recent advancements, studies indicate that the construction industry is still one of the least computerized sectors compared to manufacturing, telecommunication, and retail industries. In line with this, the construction research community faces significant challenges when it comes to adopting new data science and Artificial Intelligence (AI) solutions and techniques. Several factors, such as complexity and uniqueness of construction projects, the rapid pace of evolution of such technologies, and unfamiliarity of traditional construction faculty with such topics, cause this situation. As a result, it is crucial for researchers and academic experts to develop novel educational and training strategies to bridge such research skills gaps and strengthen construction research data literacy and digital fluency.

This project addresses the above challenges faced by educators and researchers in construction engineering through the development of an educational and community engagement platform called CyCon (Cyber Construction).



The CyCon platform focuses on state-of-the-art AI/ML techniques and cloud computing solutions that serve CI (CyberInfrastructure) users, contributors, and professionals in the construction research community. The CyCon platform contains the following four training and educational components: (1) CI user resource modules, including modular learning coursework and course project libraries, to train CyCon users with basic and advanced CI research skills, (2) CI educator resource modules that provide novel strategies and online materials to efficiently train educators, (3) CI competition modules to help CyCon users practice and further advance their knowledge about AI/ML products and tools using real-world construction problems, and (4) CI crowdsourcing modules that provide a well-defined data pipeline using data warehouses to enrich construction datasets available for public use.

The CyCon platform is designed as a sustainable educational and community engagement framework for the construction CI research community and is expected to significantly improve the learning and teaching experiences of CI users and educators at various construction programs nationwide.

This award reflects NSF's statutory mission and has been deemed worthy of support through evaluation using the Foundation's intellectual merit and broader impacts review criteria.



CAES Summer Visiting Faculty Award

May 2022

Dr. Vakanski obtained the 2022 Center for Advanced Energy Studies (CAES) Summer Visiting Faculty award for a collaborative project with INL researchers on physics-informed machine learning for creep modeling.

The summer visiting faculty program is key to CAES' effort to enable the one-on-one collaborations needed to build and sustain a research collaboration ecosystem, per the CAES Strategy. It provides university participants access to the national laboratory, allowing them to learn about its inner workings, capabilities, and expertise, while building lasting networks between INL researchers and their students and colleagues.

For INL researchers, the program offers an opportunity to build new academic connections, gain exposure to diversified funding opportunities and connect with students supporting the faculty member. Participants were selected based on proposals submitted by faculty. They were then paired with an INL researcher. Alex Vakanski, collaborated with Fei Xu, MFC, and Yachun Wang, NS&T.



Nuclear Engineering Faculty member Bob Borelli named Executive Committee Treasurer for the Idaho Section of the American Nuclear Society

The Idaho Section of the American Nuclear Society (IANS) was chartered in 1957. They are the largest and one of the most active sections of the American Nuclear Society (ANS).

They are a non-profit organization dedicated to the advancement of science, engineering, and education pertaining to peaceful uses of nuclear science and technology.

Idaho ANS was awarded best recruiting and best overall local section for 2022.

Best Paper Award at the 2022 ASME IDETC/CIE: 27th DFMLC

August 2022

Dr. Mirkouei, along with graduate students Galo Albor and Ethan Struhs, received the Best Paper Award at the 2022 ASME International Design Engineering Technical Conferences & Computers and Information in Engineering Conference (IDETC/CIE), at the 27th Design for Manufacturing and the Lifecycle Conference (DFMLC).

The paper title: "MIXED PLASTIC WASTE CONVERSION TO VALUE-ADDED PRODUCTS: SUSTAINABILITY ASSESSMENT AND A CASE STUDY IN IDAHO."



Abstract Value-added products from petroleum-based wastes (e.g., mixed plastics) have shown great potential to address sustainability challenges, such as global waste management and environmental pollution from petroleum-based products. However, recycling mixed plastic wastes (MPW) has been debated for producing renewable materials and value-added products, such as C10-C50 liquid hydrocarbon compounds. This study investigates the economic feasibility and sustainability benefits of producing MPW pyrolysis oil (p-oil), using a transportable refinery unit.

The presented approach was evaluated by conducting a case study in southeast Idaho, USA. The techno-economic analysis calculates the total supply chain cost of the plastics pyrolysis conversion process. The life cycle assessment (LCA) evaluates the negative environmental impacts of MPW-to-products life cycle. LCA assesses the global warming potential for a 100-year time horizon. The p-oil production cost per metric ton is \$228, while the total emission is 2,262 kg CO₂ per 100 metric tons of MPW.

The results indicate that on-site operation can reduce plastic waste management and carbon footprint. Based on these results, converting MPW to liquid hydrocarbon products using the mobile pyrolysis conversion process can address the supply chain sustainability challenges and lead to sustainable production.

Mr. Galo Albor is an MS student in Environmental Science, Mr. Ethan Struhs is a PhD student in Mechanical Engineering, and Dr. Amin Mirkouei is a faculty in NEIM and affiliated faculty in Mechanical Engineering and Environmental Science Departments.

Postdoctoral Fellowship Scholar Dmytro Lesyk

August 2022

Dmytro Lesyk joined the Nuclear Engineering and Industrial Management Department in August 2022. He is a visiting scholar who worked under the supervision of Dr. Indrajit Charit. He was awarded a Postdoctoral Fellowship for 2022-2023 by the Fulbright Research and Development Program. His research project is focused on the post-processing of nickel-based superalloy components printed by 3D laser technology for aerospace and nuclear applications.



Dr. Lesyk is an Assistant Professor at the Laser Systems and Advanced Department of Igor Sikorsky Kyiv Polytechnic Institute, Ukraine. He holds a bachelor's degree in Mechanical Engineering and master's degree majoring in "Special Technology for Materials Processing" from the Igor Sikorsky Kyiv Polytechnic Institute. In 2016 he obtained his PhD degree majoring in "Processes of Physic-Technical Treatment" at the home institution.

His professional interests, research topics, and international collaborations mainly focus on materials processing, laser surface treatment technologies, advanced mechanical surface treatment techniques, combined/hybrid thermo-mechanical surface modification, laser-based additive manufacturing of metal products, powder bed fusion technologies, selective laser melting, and 3D printing post-processing.

"It is a great honor and pleasure for me to participate in the Fulbright Program. I am impressed by the high scientific and organizational level at the host organization. Looking forward to a long-term and effective research collaboration between the University of Idaho and Igor Sikorsky Kyiv Polytechnic Institute in the future. Together we can do more for education, science, technology, and engineering."



New Administrative Assistant October 2022

Natalie Petersen joined the U of I NEIM department this October as an Administrative Assistant. She is the mother of four busy wonderful teenagers. Natalie grew up in Idaho Falls and has lived here with her husband since her college days at Utah State University where she received her bachelor's in finance. In her free time, she likes to read, run, support her children in their many adventures, and sleep. She's excited to be part of such a great team!

Meet Our New NEIM Advisory Board Members



Dennis De Leon, M. Engr, CPEM

Dennis is a new member of the NEIM Advisory Board this year. Dennis is a Vandal Alumnus, having completed his Masters of Engineering in Engineering Management from the University of Idaho in 2021. He has a Bachelor of Science degree in Electrical Engineering from the University of the Philippines which he completed in 1996. Dennis also earned his Certified Professional in Engineering Management (CPEM) in 2021. He is a member of both the Phi Kappa Phi Honor Society and the Golden Key International Honour Society.

Dennis is currently a Senior Manager for SSD Product Engineering at Micron Technology Inc in Boise, Idaho and has been working at Micron for over 20 years. He previously worked at Intel and Nestle Foods. Dennis has over 25 years of experience working in the semiconductor industry doing Flash memory, DRAM memory, and solid state drives. In his spare time, Dennis enjoys the Idaho outdoors as well as the occasional travel with his family.



Andrew Hoffman, Ph.D.

Andrew received his Bachelor of Science degree in Physics from Brigham Young University in 2012, his Master's degree in Physics from Idaho State University in 2016, and his Ph.D. in Nuclear Engineering from Missouri University of Science and Technology in 2019.

Andrew is currently a lead scientist at GE Research in Niskayuna, New York, where he focuses on new and emerging technologies for commercial development. Currently Andrew leads/co-leads two programs developing advanced nuclear sensor, digital twin, and cybersecurity for nuclear reprocessing applications. Andrew is also a lead team member for GE's accident tolerant nuclear fuel program. These applications include focuses on applies physics, nuclear engineering, and physical metallurgy. His role includes developing collaborations with Universities for both future employee pipelines as well as developing emerging technologies and transitioning them to commercial scale.



Jonathan Webb, Ph.D.

Jon Webb is a nuclear engineer with a passion for the development and integration of complex nuclear systems. Dr. Webb is currently employed by Northrop Grumman as the Chief for Specialty Engineering and the Lead Engineer for Nuclear Hardness and Survivability on the Sentinel program. Previously, Dr. Webb served as a program manager and scientist at the Idaho National Laboratory where he worked on the development of space nuclear systems.

Prior to becoming an engineer, Dr. Webb served on active duty in the United States Army with assignments as a Fire Control Platoon Leader for a PATRIOT missile battery in the republic of Korea and at the Army Space and Missile Defense Command in Colorado Springs, CO. Dr. Webb has a PhD in Nuclear Engineering from the University of Idaho, a Master's degree in Nuclear Engineering from Idaho State University, and a Bachelor's degree in Aerospace Engineering with minors in mathematics and physics from Embry Riddle Aeronautical University.



University of Idaho-led project involving U of I Researches Awarded State Grant

June 2022

A team led by University of Idaho faculty member Michael Haney received a \$2.1M award from the Higher Education Research Council-Idaho Global Entrepreneurial Mission (HERC-IGEM) for a project that calls for creating an immersive training environment for cybersecurity students statewide.

The project, Reconfigurable Attack-Defend Instructional Computing Laboratory (RADICL) at the University of Idaho's Idaho Falls Center for Higher Education, will allow students at any Idaho university to access what will eventually be a hybrid physical/virtual environment through the Idaho Regional Optical Network, a high-speed optical network that connects higher education institutions, healthcare organizations, government agencies and not-for-profit organizations throughout the state. It expands on the RADICL facility on the University of Idaho's main campus in Moscow, which provides hands-on teaching and research in the areas of information assurance, cyber-defense and modern computing platforms and networks.

The new effort will include cyber-physical systems and operations technology for critical infrastructure. The immersive environment created by the project will mimic real-world activity on the internet - "Things you couldn't do in a classroom," said Haney, associate professor of Computer Science for the

University of Idaho and a cybersecurity researcher at INL.

Led by Haney, the project includes UI researchers R.A. Borrelli, Dakota Roberson and Constantinos Koliass, and Idaho State University researchers Benjamin Lampe, Sean McBride, and Ryan Lind.

The HERC-IGEM program, which is designed to stimulate competitive research at Idaho's higher education institutions, will fund the project for three years at \$693K annually. Projects selected for funding must be in alignment with the statewide higher education research strategic plan," according to the HERC-IGEM website.

Haney's project aligns with the plan to boost cybersecurity education at the state's universities and colleges through a private fiber optic network that connects classrooms and research laboratories at all of Idaho's public higher education institutions. The goal, Haney said, is to eventually incorporate CAES and INL's Collaborative Computing Center and Cybercore into the plan. At CAES, Haney plans a project called Secure Cyberspace and Resilient Industrial Systems Workforce Development, a physical lab that ties into an existing simulator at the Applied Visualization Laboratory and focuses on cybersecurity for the nuclear industry and infrastructure.

University of Idaho Faculty Member Haiyan Zhao Tours French Nuclear Plants July 2022



University of Idaho associate professor Haiyan Zhao visited several nuclear sites in France in August during a visit arranged through the French section of the American Nuclear Society. Zhao is an associate professor in the Chemical and Biological Engineering Department and affiliated faculty in the Nuclear Engineering and Environmental Science program.

Over seven days in July, she crisscrossed France to tour nuclear facilities such as Cadarache, the largest technological research and development center for energy in Europe that hosts a number of research reactors; La Hague, a nuclear fuel reprocessing plant; Andrea LLW waste storage site; and Marcoule Nuclear Site.

“It was really eye opening to see how the French government, industry and the public respond to challenges and work together,” Zhao said, adding that she came away from the trip with valuable information about how the country handles the nuclear fuel cycle, from the front-end of preparing material for reactors to the back end of safely preparing, managing, and disposing of the radioactive spent nuclear fuel.

“From operation and construction of reactors, to fuel cycles, to R&D, France is a world leader for the nuclear energy industry,” Zhao said. “The approaches for handling problems and challenges in nuclear energy are amazing in France.”

Zhao was joined on the trip by eight professors from across the US. She applied for and was selected to participate in the journey in 2020; COVID delayed it until this year.



Dakota Roberson Receives Distinguished Under 40 Award October 2022

University of Idaho assistant professor Dakota Roberson received the Distinguished Under 40 award from the Greater Idaho Falls Chamber of Commerce. Distinguished Under 40 is an annual awards program exclusive to the Eastern Idaho area that honors 10 young professionals who have gone above and beyond to accomplish great things in their careers, community, and education. To be considered for the award, young professionals are nominated by co-workers, managers, and business associates.

Using Soundwaves to Assist with Bioleaching of Rare Earth Elements

Fall 2022

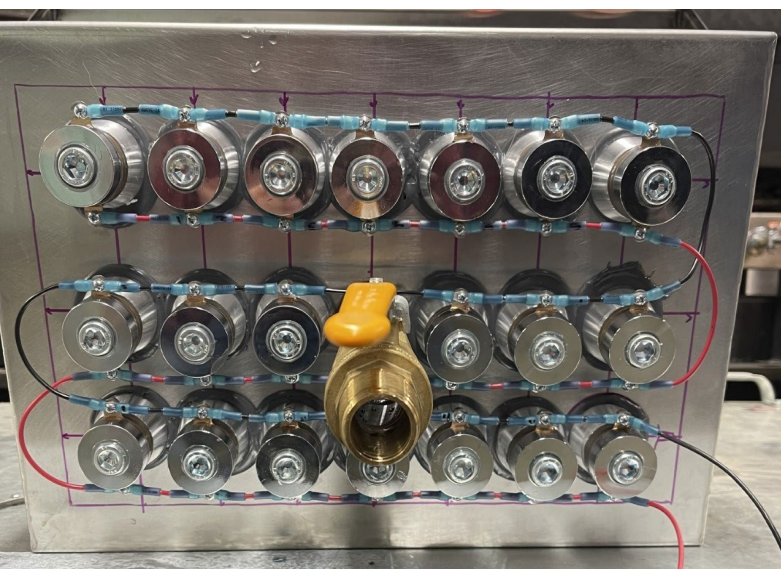
Taylor Hill's capstone project focused on using soundwaves to assist with bioleaching of rare earth elements. Bioleaching is an environmentally friendly method for extracting metals from ore using microorganisms.

Sonication is the process of applying sound energy to agitate particles in a liquid. Sonication has been shown to increase reaction rates and yields for chemical reactions, but little research has been done on the effects of sonication on bioleaching. To assist Dr. Mirkouei's team with investigating these effects, Taylor designed and built a 5-gallon,

1,200-watt sonication chamber called a sonochemical reactor. This reactor will be used to test the effects of sonication on the yield and process time of rare earth element bioleaching. If the

sonication proves effective at improving the process, it may help commercialize this environmentally friendly method for extracting rare earth elements. Link: <https://youtu.be/ciPEa6l9Yok>

Taylor Hill is a senior undergraduate in the industrial technology program. He works as an R&D technician at Idaho National Laboratory, where he provides hands-on support to multiple research programs. Taylor has a diverse skillset with experience in fabrication, machining, electronics, and metallography. Before working in research, Taylor served 5 years in the US Army's 75th Ranger Regiment. He currently lives in the Idaho Falls area with his wife and two children.



Center for Space Nuclear Research

Summer 2022

Each summer, the Center for Space Nuclear Research's summer fellowship program, CSNR, invites a group of undergraduate and graduate-level students from across the country to learn about cutting-edge research in nuclear power and propulsion technologies through its Summer Fellowship Program. The program runs for 10 weeks and allows the fellows to work as a team, in partnership with INL researchers, to complete a research project of interest to NASA in potential nuclear technology performance. The Summer Fellows Program allows participants to experience a real research environment, to learn from nuclear scientists and to preview careers in research. This year's fellows from U of I were Arnold Pradhan and Teyen Widdicombe.



Capstone Project Provides Twelve Tons of Canned Goods to Local Food Pantry



Preston Abbott developed a project that would be meaningful to others and have a far-reaching impact to fulfill the Industrial Technology (INDT) program capstone requirements. With food insecurity being a real concern for so many families, the local food banks struggle to keep up with the ever-increasing demand in the community. The onset of COVID-19 only increased that demand.

Preston stated, "With young children in school I am also aware of the ongoing struggle Parent Teacher Organizations (PTOs) have securing funds to improve our local schools for kids. In an effort to try to help our community and contribute something to local elementary schools I worked with Idaho Falls School District 93 administrators, PTOs, and the Idaho Falls Community Food Basket to organize a canned food drive during the week of March 1st, 2021. To make the project fun for students as well as beneficial to the schools I made it a competition. The school collecting the largest number of canned goods received \$1000 for their PTO, second place received \$500, and third place

received \$250. In addition, the individual class with the highest amount of food donations from each school received an in-class donut party. The funds for the monetary awards came from the money my family received from the federal economic stimulus package."

At the close of the food drive the Idaho Falls Community Food Basket reported total donations of nearly 12 tons of canned goods collected from the 10 participating elementary schools. The project allowed students to get involved with helping needy families in the community, created a fun activity during a challenging time, provided some extra funds to the winning PTOs, and provided some much-needed assistance to the local food bank.

Preston Abbott is a nontraditional student in the College of Engineering Industrial Technology (INDT) program who graduated Fall 2022. He lives in Idaho Falls and works full time for a contractor providing support for customers at the Idaho National Laboratory. When he is not working or in class, he tries his best to help his wife raise their two children.

Nuclear Naval Science Instructor Working Toward Masters in Engineering Management

Before coming to the University of Idaho, Lieutenant Donald Olsen, a native of Charlotte, NC, graduated from North Carolina State University in 2014 with a Bachelor of Science degree in Electrical Engineering. He received his commission through OCS in 2014 after participating in the Nuclear Propulsion Officer Candidate Program.

As a nuclear surface warfare officer, he served in several division officer assignments onboard USS BAINBRIDGE (DDG 96) from 2014 to 2016. During that time, he participated in one deployment to the AFRICOM AOR, the Submarine Commander's Course as an opposition force, Fleet Week Port Everglades, and Fleet Week New York. After a year at Power School and Prototype, LT Olsen served onboard USS THEODORE ROOSEVELT (CVN 71). While onboard, he cross-decked onto USS HARRY S. TRUMAN (CVN 75) during their 2018 summer deployment. He participated in operations above the Arctic circle while working on his nuclear qualifications. Upon returning to CVN-71, he became the Reactor Laboratories division officer. The Reactor Laboratories oversees the chemical and radiological controls for the reactors. This tour involved underway periods for the filming of Top Gun 2, execution of Operation Northern Edge, and a 2020 deployment to the Western Pacific which included a historic visit to Vietnam.

Donnie's current shore duty is serving as the Nuclear Propulsion Officer for University of Idaho and Washington State University's Navy ROTC Unit.

While here, Donnie has been teaching Naval Science (NS) 303 and 304, Ship Systems I and II, respectively. The courses cover the basics of naval engineering and weapons systems.

Donnie is also one semester away from completing his Master's degree in Engineering Management. Donnie stated, "The education



has been fantastic, and I have much more confidence in my ability to work beside civilian industry in the future. Most of my technical coursework has focused on risk analysis and resilient controls, and I credit these studies with much of my success in being picked as one of the first few members of the Maritime Space Officer community." The community was founded in August 2021.

Upon graduation, Donnie will either be placed into a Maritime Space Officer role directly, or he will go to the Navy Postgraduate School to continue his education.

His personal awards include three Navy and Marine Corps Achievement Medals. Donnie and his wife, Ashley, have two daughters: Claire and Alice.

To learn more about the Maritime Space Officer community, follow this link: [The New Maritime Space Officer Designator – What You Should Know > United States Navy > News-Stories](#)



Never Too Late to Accomplish a Goal

May 2022

53 Years Later, Local Finishes College Career

Published in the October 2022 Issue of Idaho Falls Magazine | Published online: Oct 05, 2022 | Senior Living

Thomas Griggs started college in fall 1969. Then, life happened.

He left after one year at what was then Rick's College, now Brigham Young University-Idaho, to go on a mission for The Church of Jesus Christ of Latter-day Saints. He got married. Had kids. Griggs returned and soon withdrew to focus on putting food on the table. By his early adult years, Griggs was in the workforce, managing a heating and air conditioning warehouse in East Idaho and selling computer supplies in Twin Falls.

In 1989, seeking a career change, Griggs took another run at higher education, earning 67 credit hours in nuclear engineering at University of Idaho.

But life threw another curveball his way. Griggs' prospective employer announced a hiring freeze.

By then, he had taken courses over two decades and spent thousands of dollars — earning enough credits for a degree, if the credits lined up perfectly. But it wasn't working out.

Having grown up in the railroad hub of Pocatello, Griggs set his sights on joining the railroad industry, where both his father and grandfather worked.

The career, which included stints as a railroad conductor and engineer, reaffirmed his passion

for the tracks and the intricate machines that chug along them.

After Griggs retired from railroading in 2016, his wife, Linda, posed the question.

“When are you going to finish your degree?”

He balked at first.

“There's too much left,” Griggs recalls saying.

But after crunching the numbers, Griggs discovered he could finish bachelor's degrees at both BYU-I and U of I within a few years. And he could do it for cheap — using the state of Idaho's discount that lets Idahoans age 60 and up take courses for \$5 per credit hour, plus fees. Preparing to crack open textbooks again, Griggs walked into Debbie Caudle's office in 2018. He brought the U of I Idaho Falls student services coordinator a diet cream vanilla Coca-Cola and asked for her help to finish school. Caudle and a BYU-I advisor figured out which courses would transfer between colleges. Soon, Griggs was registered for classes at U of I and BYU-I.

School had changed a lot from his first attempts.

Gone were the days of chalkboard lectures and pen-and-paper assignments. In were the days of PowerPoints, widespread computer ownership and online classes. *(Continued next page.)*

He swapped his flip-phone for a smartphone to use dual-factor authentication apps for class. Student Services helped Griggs turn in work online. Professors let him submit some physical assignments.

His passion for the railroad also showed in full force. Griggs pursued an ambitious senior project for his industrial technology major — to restore a decommissioned Union Pacific railroad maintenance car that hadn't operated 20 years.

Griggs saw the project through, decorating his 65-page paper with photos and journal entries chronicling the car's journey from a rusted "tin can," as he puts it, to a reliable cruiser that traverses remote stretches of railroad tracks. The bright yellow car — only large enough for two people — caught the eye of Caudle, who hosts a car show each year. When Griggs showed it there in 2021, he won spectator's choice.

"He makes me smile," Caudle said. "And boy, I'll tell ya, he could've just retired and not even worried about going back to school. But he closed the loop, and I am so proud of him."

In May, Griggs, 71, turned his gold tassel, earning a Bachelor of Science from U of I, one year after completing a bachelor's in general studies from BYU-I. The degrees are stitched together with classes across decades at several universities.

In part, he earned his degrees to prove to his grandkids that going on to higher education is an important goal — one to which he can even lay claim. But it was also about grit, he said.

"You don't have to be young to do it," Griggs said. "I can now say, 'Yes, I did.' But it only took me 53 years to do it."

"It's never too late to accomplish a goal," he said.

CONGRATULATIONS TO OUR GRADUATES!

Engineering Management

Spring 2022

Benjamin William Bolshaw, M.Engr.
Derrick Allen Buck, M.Engr.
Zachary L. Hansen, M.Engr.
Emilia Aoife Keller, M.Engr.

Summer 2022

Michael Juel, M.Engr.
Rochelle Watson, M.Engr.

Fall 2022

Carson Ronald-Lucas Kraft, M.Engr

Industrial Technology

Spring 2022

Tom Kay Griggs, B.S.Tech.
Erik Ramirez, B.S.Tech.

Fall 2022

Preston S. Abbott, B.S.Tech.
Taylor Hill, B.S.Tech.

Nuclear Engineering

Spring 2022

Ephraim Abacherli Coelho, M.Engr.
John Reese Baird, M.Engr.
John Patrick Carter, Ph.D.
Isaiah Ross Morgan, M.Engr.
Daniel Mota, M.Engr.
Luis Angel Quinones, M.Engr.

Summer 2022

Robin V Roper, Ph.D.
Teyen Widdicombe, Ph.D.

Technology Management

Spring 2022

Sai Koushik Bodducherla, M.S.
Jacob K. Foist, M.S.
Sandra Lee Harrell, M.S.
Courtney Marie Hill, M.S.
Jennifer Lynn Eisenbeis Maguire
Evaly, M.S.
Winston James Soelberg, M.S.

Summer 2022

Megan Grennille, M.S.
LeeRoy C. Jones, M.S.
Hsuan Wen Kuo, M.S.

Fall 2022

Lynn Clark Pope, M.S.
Chris P Stayman, M.S.

International Atomic Energy Agency Visit to University of Idaho, Idaho Falls (UIIF)

April 2022



IAEA

International Atomic Energy Agency

A team from the International Atomic Energy Agency (IAEA) visited UIIF in April 2022 to provide an initial assessment of our Nuclear Technology Management (NTM) program. The goal is for IAEA to endorse our program. There are currently nine endorsed NTM programs worldwide and ours would be the tenth. An IAEA team will again visit UIIF in June 2023. This visit will be to assess whether the program is ready to be endorsed. The NTM certificate is comprised of the following courses:

- TM 514 Nuclear Safety (3 cr) - online
- TM 516 Nuclear Rules and Regulations (3 cr) - online
- INDT 434 Power Distribution (3 cr) - live/online
- TM 538/NE 528 Management of Nuclear Facilities (3 cr) - live/online
- TM/NE 527 Nuclear Material Storage, Transportation and Disposal (3 cr) - live

The certificate is taken in conjunction with the Nuclear Engineering Masters or the Technology Management Masters. The endorsement of this program will greatly increase the visibility of our nuclear related programs.

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University of Idaho

Department of Nuclear Engineering
and Industrial Management

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