

RWFI E-NOTE MONTHLY

REGIONAL WORKFORCE INITIATIVE • JUNE 2022

Welcome Message

Greetings NETL RWFI stakeholders,

This month's funding opportunity in focus is the Environmental Protection Agency's *FY 23 Brownfields Training Grants Program*. The funding hopes to "deliver Brownfields Job Training programs that recruit, train, and retain a local, skilled workforce by prioritizing unemployed and under-employed residents to obtain the skills and credentials needed for pathways into full-time employment in the environmental field."

As always, feel free to reach out to us at NETL.RWFI@netl.doe.gov if you have any suggestions for information to present in future E-notes.

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— Sincerely, The NETL RWFI Team

Workforce Funding Announcements

FUNDING SPOTLIGHT



FY 23 Brownfields Job Training Grants

Environmental Protection Agency, August 2, 2022

This notice announces the availability of funds and solicits applications from eligible entities, including nonprofit organizations, to deliver Brownfields Job Training programs that recruit, train, and retain a local, skilled workforce by prioritizing unemployed and under-employed residents to obtain the skills and credentials needed for pathways into full-time employment in the environmental field. This program is being funded by the Infrastructure Investment and Jobs Act, Public Law 117-58 (the "Bipartisan Infrastructure Law"). While Brownfields Job Training Grants require training in brownfield assessment and/or cleanup activities, these grants also require that Hazardous Waste Operations and Emergency Response (HAZWOPER) training be provided to all individuals being trained. EPA encourages applicants to develop their curricula based on local labor market assessments and employers' hiring needs, while also delivering comprehensive training that results in graduates securing multiple certifications.

Science of Learning and Augmented Intelligence (SL)

National Science Foundation, Deadline, July 13, 2022

SL supports potentially transformative research that develops basic theoretical insights and fundamental knowledge about principles, processes and mechanisms of learning, and about augmented intelligence — how human cognitive function can be augmented through interactions with others, contextual variations, and technological advances.

CyberCorps Scholarship for Service

National Science Foundation, Deadline, July 15, 2022

Cyberspace has transformed the daily lives of people throughout the world. Society's overwhelming reliance on cyberspace, however, has exposed the system's fragility and vulnerabilities: corporations, agencies, national infrastructure, and individuals continue to suffer cyber-attacks. Achieving a truly secure cyberspace requires addressing both challenging scientific and engineering problems involving many components of a system, and vulnerabilities that stem from human behaviors and choices. Examining the fundamentals of security and privacy as a multidisciplinary subject can lead to fundamentally new ways to design, build, and operate cyber systems, protect existing infrastructure, and motivate individuals to learn about cybersecurity. The Cybersecurity Enhancement Act of 2014, as amended by the National Defense Authorization Acts for 2018 and 2021, authorizes the National Science Foundation, in coordination with the U.S. Office of Personnel Management and the Department of Homeland Security, to offer a scholarship program to recruit and train the next generation of U.S. cybersecurity professionals to meet the needs of the cybersecurity mission for federal, state, local, and tribal governments.

Mine Health and Safety Grants

Department of Labor, Deadline, July 25, 2022

The Mine Safety and Health Administration (MSHA) recognizes that state training programs are a key source of mine safety and health training and education for individuals who work or will work at mines. MSHA encourages state training programs to prioritize health and safety training for small mining operations and underserved mines and miners within the mining industry and to prioritize diversity, equity, and inclusion. MSHA is also interested in supporting programs that emphasize training on miners' statutory rights, including the right to be provided a safe working environment, to refuse an unsafe task, and to have a voice in the safety and health conditions at the mine. The agency encourages grantees to address, in their training and education programs, occupational health hazards caused by exposures to respirable dust and crystalline silica, powered haulage and mobile equipment safety, mine emergency preparedness, mine rescue, electrical safety, contract and customer truck drivers, improving training for new and inexperienced miners, managers and

supervisors performing mining tasks, pillar safety for underground mines, and falls from heights. The agency encourages grantees to focus training programs on the causes and prevention of fatal accidents that have occurred in the mining industry. More information about fatalities can be found on MSHA's webpage at: <https://www.msha.gov/data-reports/fatality-reports/search>.

Agriculture and Food Research Initiative Sustainable Agricultural Systems (SAS) Applications

Department of Agriculture, Deadline, July 28, 2022

SAS Request for Applications focuses on approaches that promote transformational changes in the U.S. food and agriculture system. The National Institute of Food and Agriculture seeks creative and visionary applications that take a systems approach for projects which are expected to significantly improve the supply of affordable, safe, nutritious, and accessible agricultural products, while fostering economic development and rural prosperity in the United States. These approaches must demonstrate current needs and anticipate future social, cultural, behavioral, economic, health, and environmental impacts. Additionally, the outcomes of the work being proposed should result in societal benefits, including promotion of rural prosperity and enhancement of quality of life for all those involved in food and agricultural value chains from production to utilization and consumption.

FY22 Jobs Plus Initiative

Department of Housing and Urban Development, July 29, 2022

The Jobs Plus program develops locally-based, job-driven approaches that increase earnings and advance employment outcomes through work readiness, employer linkages, job placement, educational advancement, technology skills, and financial literacy for residents of public housing. The place-based Jobs Plus program addresses poverty among public housing residents by incentivizing and enabling employment through earned income disregards for working residents and a set of services designed to support work including employer linkages, job placement and counseling, educational advancement, and financial counseling. Ideally, the Jobs Plus Program will "saturate" the target public housing projects (AMPs) with information, services and incentives intended to support resident employment during the program and encourage continued resident employment beyond the end of the program cycle.

Basic Energy Sciences - Reaching a New Energy Sciences Workforce (BES-RENEW)

Department of Energy, Office of Science, Letter of Intent, August 2, Application, August 23, 2022

Reaching a New Energy Sciences Workforce (RENEW) aims to build foundations for Office of Science (SC) research and training at institutions historically underrepresented in the SC research portfolio. RENEW leverages SC's unique national laboratories, user facilities, and other research infrastructures to provide undergraduate and graduate training opportunities (i.e., internships) for students and academic institutions not currently well represented in the U.S. science and technology (S&T) ecosystem. The hands-on experiences gained through the RENEW initiative will open new career avenues for participants, forming a nucleus for a future pool of talented young scientists, engineers, and technicians with the critical skills and

expertise needed for the full breadth of SC research activities. Principal investigators, key personnel, students and postdocs of RENEW awards will be invited to participate in cross-Basic Energy Sciences researcher meetings and/or SC-wide professional development and collaborator events.

Reaching a New Energy Sciences Workforce (RENEW) - Earth and Environmental Systems

Department of Energy, Office of Science, Letter of Intent, June 29, Application, August 24, 2022

The DOE SC program in BER hereby announces its interest in receiving applications for RENEW grants that will target building capacity in climate and environmental science-relevant programs, particularly at Historically Black Colleges and Universities (HBCUs) and minority-serving institutions (MSIs). Funding may be requested to support experiential training, mentoring, and institutional capacity building activities in partnership with DOE national laboratory Scientific Focus Areas (SFAs) supported within BER's Earth and Environmental Systems Sciences Division (EESD). BER has a goal to broaden and diversify institutional representation in the EESD portfolio. BER recognizes there are many academic scientists at institutions not currently supported by BER who have limited familiarity with EESD programs and research support; BER further recognizes that such barriers to engagement in research and student training can be surmounted by fostering partnerships and collaborations with BER-supported SFA research at the DOE national laboratories. To help provide technical assistance to build capacity and achieve the goal of broadening institutional participation, this funding opportunity announcement (FOA) will provide training and research funding for institutions to: 1) develop new partnerships with the BER-supported EESD SFAs at the DOE national laboratories to enable sustained undergraduate and graduate student participation in EESD-relevant research; 2) facilitate undergraduate and graduate student participation in EESD research programmatic and user facility outreach and training activities; and 3) foster the development of climate and environmental science training capacity and research at under-represented institutions.

Fusion Energy Sciences - Reaching a New Energy Sciences Workforce (FES-RENEW)

Department of Energy, Office of Science, Letter of Intent, June 29, Application, August 24, 2022

The DOE Office of Science (SC) program in Fusion Energy Sciences (FES) announces its interest in receiving applications for Fusion Energy Sciences - Reaching a New Energy Sciences Workforce (FES-RENEW). RENEW aims to build foundations for SC research and training at institutions historically underrepresented in the SC research portfolio. RENEW leverages SC's unique national laboratories, user facilities, and other research infrastructures to provide undergraduate and graduate training opportunities for students and academic institutions not currently well represented in the U.S. science and technology (S&T) ecosystem. The hands-on experiences gained through the RENEW initiative will open new career avenues for the participants, forming a nucleus for a future pool of talented young scientists, engineers, and technicians with the critical skills and expertise needed for the full breadth of SC research activities. Principal Investigators, key personnel, and students and postdocs of RENEW awards will be invited to participate in FES researcher meetings and/or SC-wide professional development and collaborator events. The goal of the FES-RENEW program is to increase participation of underrepresented

groups in FES's fusion and plasma science and technology research portfolio. FES is fully committed to advancing a diverse, equitable, and inclusive research community, which is key to providing the scientific and technical expertise for U.S. scientific leadership. Critical to this initiative are institutional efforts for recruiting diverse participation and creating and maintaining positive, inclusive, and professional research and learning environments, including but not limited to providing mentoring and professional development resources to students and early career researchers and fostering a sense of belonging among all research personnel.

Improving Undergraduate STEM Education: Hispanic-Serving Institutions

National Science Foundation, Deadline, Aug. 31, 2022

The goals of the HSI program are to enhance the quality of undergraduate science, technology, engineering, and mathematics (STEM) education and to increase the recruitment, retention, and graduation rates of students pursuing associate or baccalaureate degrees in STEM. Achieving these, given the diverse nature and context of the HSIs, requires additional strategies that support building capacity at HSIs through innovative approaches. These strategies include incentivizing institutional and community transformation and promoting fundamental research into: (1) engaged student learning, (2) what it takes to diversify and increase participation in STEM effectively, and (3) improving our understanding of how to build institutional capacity at HSIs. Intended outcomes of the HSI Program include broadening participation of students that are historically underrepresented in STEM and expanding students' pathways to continued STEM education and integration into the STEM workforce.



Promoting Decarbonization, Carbon Management and Sustainability in the Chemical Sector by Leveraging NETL's Deep Expertise

NETL is leading the Center for Sustainable Fuels and Chemicals (CSFC), a focus to help the U.S. chemicals industry retool products and operations for a sustainable future that strengthens domestic manufacturing as the nation transitions to clean energy. "New strategies and technologies are needed to decarbonize the chemicals industry. Our work establishes an NETL-led technology incubation center and will seek to develop collaboration with industry to assist the downstream chemicals sector in their decarbonization, as well as carbon management and sustainability efforts.



Novel Computational Ability Helping NETL Researchers Win the Fight Against Pollution

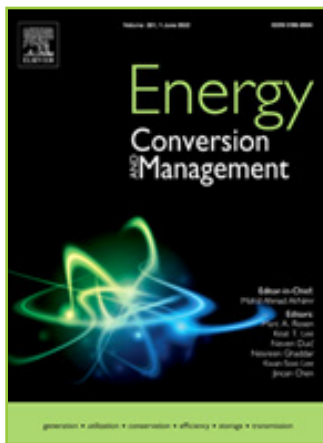
NETL and West Virginia University researchers have successfully used reinforcement learning — which allows a computer program to learn without user input — to develop adaptive control strategies that could reduce environmental emission and treatment costs during flexible operation of the nation's power plants. Reinforcement learning is a type of machine learning technique that involves an intelligent agent, such as a computer algorithm, taking action in an environment and receiving rewards or penalties based on its actions. NETL researcher Steve Zitney explained, using gaming as a metaphor: "People get better at games, whether its video games, card games or even board games, because they earn points, or equivalent rewards, for successful actions and penalties for unsuccessful actions. Over time, a player learns how to maximize rewards and avoid penalties to win the game."

NETL News



Diversity and Inclusion Narrow Gender Gap, Drive Innovation at NETL

NETL researcher Ranjani Siriwardane is a trailblazer within her areas of expertise and in the advancement of diversity and inclusion to drive innovations for clean energy technologies. Besides finding solutions to complex technical issues, Siriwardane, as well as other women at NETL, are Ranjani Siriwardane taking steps to close the gender gap that exists in science, technology, engineering and mathematics (STEM) fields.



NETL Supercritical Carbon Dioxide Power Cycle Innovations Described in Scientific Journal

New NETL research examines turbomachinery design for advanced, natural gas-fired direct supercritical carbon dioxide (sCO₂) power generation systems that offer potential for high efficiency and high rates of carbon dioxide capture. The research was captured in a new manuscript published in Energy Conversion and Management Journal. Energy Conversion and Management Journal is a biweekly peer-reviewed scientific journal that provides a forum for publishing original contributions and comprehensive technical review articles of interdisciplinary and original research on all important energy topics. The manuscript was written by Selcuk Can Uysal, Charles White, Nathan Weiland, and Eric Liese. Conventional power plants produce power with turbines that use air (combustion turbines) or steam (steam turbines) as the working fluid.

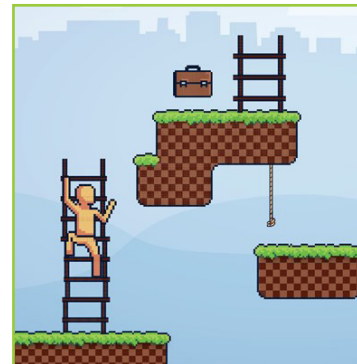


NETL Researcher Fighting Climate Change Shaped by Experiences as Snowboarding Instructor, STEM Tutor and Entrepreneur

As a federal project manager, NETL's Krista Hill is especially adept at handling multiple assignments as she focuses on the development of innovative decarbonization projects to address climate change. She refined and polished those multitasking skills early in her career. While completing graduate-level research in chemistry at the University of Oregon, Hill launched a tutoring business to help students in science, technology, engineering and mathematics (STEM) courses, co-managed a construction company and even helped a friend start two food cart ventures. "I was always juggling several projects, which was great experience for project management," Hill explained. Growing up in West Virginia, Hill was impressed by the natural beauty of the state and enjoyed its outdoor

recreation opportunities, which piqued an early interest in the environment. She was also exposed to strong role models, sparking a desire to excel in the classroom.

Reports and Resources



The Uncertain Pathway from Youth to a Good Job

Georgetown University Center on Education and the Workforce

Georgetown University Center on Education and the Workforce

Over the past several decades, the pathway to a good job has become longer and more challenging for young adults to navigate. Today, most young workers do not attain a good job until their early 30s, and only young workers with a bachelor's degree or higher are consistently more likely than those in the previous generation to have a good job before age 30. Furthermore, the disparities in good jobs by race/ethnicity and gender persist.

To secure a good job, young adults need more education and high-quality work experience than was necessary for previous generations. But three hurdles stand in their way:

the rising cost of postsecondary education,

limited access to high-quality work-based learning, and

the absence of comprehensive counseling and career navigation services.

DOE STEM Rising



DOE Awards \$110 Million for Groundbreaking Research by 83 Early Career Scientists

The U.S. Department of Energy (DOE) announced the selection of 83 early career scientists from across the country to receive \$110 million in funding for research covering a wide range of topics, from holography to particle accelerators.



Internship Cooperative at Hanford Taps Into Future Workforce

EM Office of River Protection (ORP) contractor Washington River Protection Solutions (WRPS) is developing innovative, collaborative ways to tap into the future workforce.



DOE Announces \$40 Million to Provide Research Training Opportunities for Historically Underrepresented Groups

DOE's "Reaching a New Energy Sciences Workforce (RENEW)" Initiative will Support HBCUs, MSIs, and other Institutions to Build a Diverse STEM Workforce



DOE Awards \$3.6 Million to Promote Equity And Diversity in Clean Energy Innovation

DOE's "Inclusive Energy Innovation Prize" Winners Receive Cash Awards to Implement Strategies Prioritizing Climate Solutions for Underrepresented Communities; 80% of the Applications Were First Time DOE Applicants

ABOUT NETL



NETL, owned and operated by DOE, is one of the Department's 17 National Laboratories. NETL supports DOE's mission to advance the national, economic, and energy security of the United States.

1450 Queen Avenue SW
Albany, OR 97321-2198
541-967-5892

3610 Collins Ferry Road
P.O. Box 880
Morgantown, WV 26507-0880
304-285-4764

626 Cochran's Mill Road
P.O. Box 10940
Pittsburgh, PA 15236-0940
412-386-4687

Program staff are also located in
Houston, Texas and Anchorage, Alaska

WEBSITE: www.netl.doe.gov

CONTACTS

Anthony Armaly
NETL RWFI Federal Coordinator
412-386-6040
Anthony.Armaly@netl.doe.gov

Kirk Gerdes
Regional Workforce Initiative Coordinator
304-285-4342
Kirk.Gerdes@netl.doe.gov

Mike Knaggs
Associate Director of Partnerships
304-285-4926
Michael.Knaggs@netl.doe.gov

Matthew Garcia
Regional Workforce Initiative Consultant
956-314-0645
Matthew.Garcia@netl.doe.gov