

# RWFI E-NOTE MONTHLY

REGIONAL WORKFORCE INITIATIVE • JULY 2022

## Welcome Message

Greetings NETL RWFI stakeholders,

This month's funding opportunity in focus is the *Advanced Technological Education* program from the National Science Foundation. The deadline for this funding opportunity is Oct. 6, 2022. Also in this month's E-note is the latest *U.S. Energy and Employment Report* from the U.S. Department of Energy.

As always, feel free to reach out to us at [NETL.RWFI@netl.doe.gov](mailto: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

#### Advanced Technological Education (ATE)

National Science Foundation, Deadline, Oct. 6, 2022

With a focus on two-year Institutions of Higher Education (IHEs), the ATE program supports the education of technicians for the high-technology fields that drive our nation's economy. The program involves partnerships between academic institutions (grades 7–12, IHEs), industry, and economic development agencies to promote improvement in the education of science and engineering technicians at the undergraduate and secondary institution school levels. The ATE program supports curriculum development; professional development of college faculty and secondary school teachers; career pathways; and other activities. The program invites applied research proposals that advance the knowledge base related to technician education. It is required that projects be faculty driven and that courses and programs are credit bearing, although materials developed may also be used for incumbent worker education.

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

U.S. Department of Energy, Office of Science, Letter of Intent, Aug. 2, Application, Aug. 23, 2022

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.

### RENEW — Earth and Environmental Systems

U.S. Department of Energy, Office of Science, Letter of Intent, June 29, Application, Aug. 24, 2022

The DOE SC program in Biological and Environmental Research (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 will provide training and research funding for institutions to: 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, facilitate undergraduate and graduate student participation in EESD research programmatic and user facility outreach and training activities, and foster the development of climate and environmental science training capacity and research at under-represented institutions.

### *Hispanic-Serving Institutions (HSIs) Education Grants Program*

#### **U.S. Department of Agriculture, Deadline, Aug. 29, 2022**

This competitive grant program is intended to promote and strengthen the ability of HSIs to carry out higher education programs in the food and agricultural sciences. Programs aim to attract outstanding students and produce graduates capable of enhancing the nation's food and agricultural scientific and professional work force.

### *Tribal Colleges and Universities Program (TCUP)*

#### **National Science Foundation, Deadline, Sept. 1, 2022**

TCUP provides awards to federally recognized Tribal Colleges and Universities, Alaska Native-serving institutions, and Native Hawaiian-serving institutions to promote high-quality STEM (including sociology, psychology, anthropology, linguistics, economics and bioeconomics, statistics, and other social and behavioral sciences; natural sciences; computer science, including, but not limited to, artificial intelligence, quantum information science, and cybersecurity) education, research, and outreach. Support is available to TCUP-eligible institutions (see the Additional Eligibility subsection of Section IV of this solicitation) for transformative capacity-building or community engagement projects through Instructional Capacity Excellence in TCUP Institutions, Targeted STEM Infusion Projects, TCUP for Secondary and Elementary Teachers in STEM, TCU Enterprise Advancement Centers, Cyberinfrastructure Health, Assistance, and Improvements, and Preparing for TCUP Implementation. Collaborations led by TCUP institutions that involve non-TCUP institutions of higher education are supported through TCUP Partnerships, with the participation of other National Science Foundation (NSF) programs to support the work of non-TCUP institutions. Finally, research studies that further the scholarly activity of individual faculty members are supported through Small Grants for Research. Through the opportunities highlighted above, as well as collaborations with other NSF divisions and directorates, and other organizations, TCUP aims to increase Native individuals' participation in STEM careers, improve the quality of STEM programs at TCUP-eligible institutions, and facilitate the development of a strong STEM enterprise in TCUP institutions' service areas.

### *FY22 Department of Navy (DON) STEM, Education and Workforce Program administered by the Office of Naval Research (ONR)*

#### **Department of the Navy, Deadline, Sept. 2, 2022**

The Office of Naval Research (ONR) is interested in receiving a broad range of proposals for augmenting existing and/or developing innovative solutions that directly maintain, and/or cultivate a diverse, world-class STEM workforce to maintain the U.S. Navy and Marine Corps' technological superiority. The goal of proposed efforts must provide solutions that establish, build, and/or maintain STEM educational pathways of U.S. citizens directly relevant to the needs of Department of Navy's (DON) current and future workforce. As the capacity of the DON S&T workforce is interconnected with the STEM education system, DON recognizes the need to support efforts that can jointly improve STEM student outcomes and align educational and outreach efforts with Naval S&T current and future workforce needs. This announcement explicitly encourages programs that improve the capacity of education systems and communities to create impactful STEM educational experiences for students of all

ages and the naval related workforce. Programs must aim to increase engagement in naval relevant STEM, and enhance the corresponding skills, knowledge, and abilities of participants. ONR encourages applicants to utilize current STEM educational research for informing program design and advancing STEM careers and opportunities of naval relevance.

### *Youth Engagement, Education, and Employment*

#### **Department of the Interior, Fish and Wildlife Service, Deadline, Sept. 15, 2022**

The U.S. Fish and Wildlife Service is the premier government agency dedicated to the conservation, protection, and enhancement of fish, wildlife and plants, and their habitats. They are the only agency in the federal government whose primary responsibility is the conservation and management of these important natural resources for the American public. The service's origins date back to 1871 when Congress established the U.S. Fish Commission to study the decrease in the nation's food fishes and recommend ways to reverse that decline. Today, they are a diverse and largely decentralized organization, employing about 8,000 dedicated professionals working out of facilities across the country, including a headquarters office in Falls Church, Virginia, and eight regional offices representing the 12 Unified Interior Regions. A variety of programs within the U.S. Fish and Wildlife Service (FWS, Service) and the National Wildlife Refuge System (NWRS, Refuge System) are focused on engaging diverse youth in wildlife conservation and public land management. The service enters into cooperative agreements with member organizations of the FWS Youth Corps to engage with youth and veterans in projects under the Authority of the Public Lands Corps Act.

### *Advanced Scientific Computing Research - Reaching a New Energy Sciences Workforce (ASCR-RENEW)*

#### **Department of Energy, Deadline, Sept. 16, 2022**

The DOE SC program in ASCR announces its interest in receiving applications for RENEW. The goal of ASCR's RENEW program is to increase participation of underrepresented groups in the quantum computing and networking workforce and to increase participation of underrepresented institutions in quantum computing and networking workforce training. SC-ASCR 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. This pilot program is intended to leverage ASCR's unique national laboratory infrastructure and user facilities to provide training and research opportunities for students, postdoctoral researchers, and faculty from underrepresented groups and at institutions that are currently underrepresented in the ASCR portfolio such as non-R1 institutions of higher education and minority serving institutions (MSIs), including Historically Black Colleges and Universities. The hands-on experiences gained through RENEW will open new career avenues for the participants who will gain the critical skills and expertise needed for the full breadth of quantum computing and networking activities, including DOE national laboratory staffing. Institutional capacity developed through RENEW will likewise open career avenues for future generations. 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. S&T ecosystem.

*Improving Undergraduate STEM Education: HSIs*

**National Science Foundation, Deadline, Sept. 30, 2022**

The goals of the HSI program are to enhance the quality of undergraduate STEM education and to increase the recruitment, retention, and graduation rates of students pursuing associate's 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 to incentivize institutional and community transformation and to promote the following fundamental research: on engaged student learning, about what it takes to diversify and increase participation in STEM effectively, and that improves 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.

The DOE's Office of Fossil Energy and Carbon Management (FECM) announced funding for two opportunities totaling \$8M to advance natural gas research coupled to methane mitigation and build new humanities-driven STEM curricula at eligible U.S. colleges and universities. One opportunity will provide \$2M in funding to support FECM's University Coal Research program, and the other opportunity will provide an additional \$6M to support the HBCU and Other Minority Institutions program. Both programs serve to educate and train the next generation of engineers and scientists working to advance integrated solutions key to meeting the Biden-Harris Administration's goal of net-zero greenhouse gas emissions by 2050.



*NETL Researchers Shared Lab's Expertise at 2022 DOE Cybersecurity and Technology Innovation Conference*

The latest developments in applying big data concepts, such as artificial intelligence and machine learning, to the energy sector by NETL were shared at the 2022 DOE Cybersecurity and Technology Innovation Conference held June 16–19, 2022, in a hybrid virtual and in-person setting. NETL geo-data scientists Kelly Rose and Jen Bauer, and information technology specialist Tracey Williams participated in a number of panels throughout the conference that highlighted a variety of computational topics.



*NETL, Partners Release Resource on Computational Tools to Complete CO<sub>2</sub> Storage Permit Applications*

NETL researchers have collaborated with the U.S. Environmental Protection Agency, other contributing national laboratories and the U.S. Department of Energy's Regional Initiative to Accelerate Carbon Capture, Utilization and Storage Deployment to release the report "Rules and Tools Crosswalk: A Compendium of Computational Tools to Support Geologic Carbon Storage Environmentally Protective UIC Class VI Permitting." This report summarizes computational tools and methods that may be used to address specific requirements of the Underground Injection Control Class VI (Geologic Sequestration) permit application process. This report is intended to serve as a resource for industry, regulatory, academic and public stakeholders, and will be

**NETL News**



*NETL's Award-Winning Sorbent to Generate Clean Water for Mining Communities*

NETL technology initially used for carbon capture applications can play a significant role in removing toxic metals that flow from thousands of abandoned and active mines across the nation to pollute streams, destroy aquatic life and contaminate water supplies. Multi-functional Sorbent Technology represents a game-changing, low-cost process to mitigate the devastating effects of acid mine drainage (AMD) on waterways, groundwater and fragile aquatic ecosystems. AMD occurs when the iron sulfides unearthed by mining activity interact with water and air and oxidize. The process creates sulfuric acid, a highly corrosive acid capable of breaking down surrounding rocks, which can cause toxic metals to enter and eventually dissolve into the water.



*DOE Announces \$8M for University Training and Research for Decarbonization and Net-Zero Greenhouse Gas Emissions Technologies*

updated periodically as new information on relevant computational tools becomes available.



*NETL Assists Preparations for Global Clean Energy Action Forum*

NETL is supporting a partnership between the DOE and Carnegie Mellon University to launch and host the 2022 Global Clean Energy Action Forum Sept. 21–23 in Pittsburgh. The event brings together energy leaders from around the world to turn clean energy ambition into action and accelerate the transition toward a more secure energy future. The inaugural event will also work towards empowering communities and the next generation of the clean energy workforce, recognizing their integral role in the energy transition. The theme of the Forum is Rapid Innovation and Deployment. DOE Secretary Jennifer M. Granholm will convene the landmark event. She explained that the Forum will allow the U.S. to continue its leadership on the world stage, “to foster greater international cooperation to achieve our shared climate ambitions, drive innovation and accelerate the deployment of clean energy solutions, while creating millions of good paying jobs.”

recommendation of the first Department of Energy Quadrennial Energy Review to better track and understand employment within key energy sectors that have been difficult to impossible to follow using other publicly available data sources. The study combines surveys of businesses with public labor data to produce estimates of employment and workforce characteristics.

The 2022 USEER analysis shows that energy jobs have rebounded, after sharply declining in 2020 due the COVID-19 pandemic and subsequent economic fallout. In 2021, energy jobs grew 4.0% from 2020, outpacing overall U.S. employment, which climbed 2.8% in the same time period. The energy sector added more than 300,000 jobs, increasing the total number of energy jobs from 7.5 million in 2020 to more than 7.8 million in 2021.

**DOE STEM Rising**

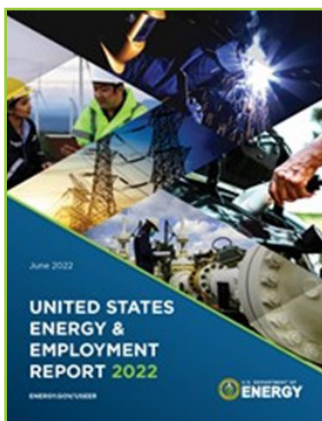


*Oak Ridge Contractor Ramps Up Internship Opportunities*

Fresh out of the Navy, Ronald Randazzo wanted to go somewhere new and return to school with educational assistance provided by the GI Bill. Former Navy pals suggested he attend the University of Tennessee in Knoxville. Randazzo jumped at the opportunity to study at one of the nation’s top nuclear engineering programs in close proximity to DOE’s Oak Ridge site.

Recognizing the COVID-19 pandemic had impacted in-person internships for many students over the past two summers, EM Oak Ridge cleanup contractor UCOR expanded its internship program this year to provide unique learning opportunities for students like Randazzo. The company has added 29 students from 12 schools across the nation to its workforce for the summer.

**Reports and Resources**



*U.S. Energy and Employment Report*

**U.S. Department of Energy, 2022**

Georgetown University Center on Education and the Workforce

The U.S. Energy and Employment Report (USEER) is a comprehensive summary of national and state-level employment, workforce, industry, occupation, unionization, demographic, and hiring information by energy technology groups. The USEER began in 2016 at the



*Ohio Students Gain Technical Writing Experience Through Office of Environmental Management (EM) Assignment*

Officials from EM and Ohio University recently joined a class at Ohio’s Western High School to celebrate the 11<sup>th</sup> cohort of students to complete an EM Annual Site Environmental Report (ASER) Summary project. As part of a grant administered by EM’s Portsmouth/Paducah Project Office (PPPO) — and in coordination with PPPO’s Portsmouth Site staff and contractors and Ohio University — the project assigns a group of science students to summarize the highly technical ASER to make it more concise and readable for the public.

“The ASER student summary is one of our most valuable outreach

programs here,” said Jeremy Davis, PPPO’s acting Portsmouth Site lead. “At the end of the school year, these students often will have become some of the most knowledgeable stakeholders regarding site activities, monitoring and history. We appreciate every student who participated this year and hope they found this information valuable.”



*Office of Environmental Management Intern Finds Balance Between Work and Outdoor Pursuits in Idaho*

Tired of big cities, Justin Arena exercised his own version of Manifest Destiny and headed west to begin an internship at the DOE Idaho National Laboratory site, supporting one of EM’s highest-priority projects. Arena, a senior chemical engineering student at Louisiana State University, applied at an online jobsite and landed a summer job with EM contractor Idaho Environmental Coalition (IEC) supporting the Integrated Waste Treatment Unit (IWTU).

EM is currently executing a confirmatory run for IWTU using a liquid waste simulant prior to beginning radiological operations this fall to convert 900,000 gallons of sodium-bearing liquid waste to a granular solid. IWTU is one of three liquid-waste treatment facilities within the EM complex designed to address the radioactive byproducts of historic spent nuclear fuel reprocessing.

“The field itself — nuclear science and nuclear waste — interested me,” Arena said. “It’s something I could see myself doing for a career.”

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.

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