

RWFI E-NOTE MONTHLY

REGIONAL WORKFORCE INITIATIVE • MARCH 2022

Welcome Message

Greetings NETL RWFI stakeholders,

This month's funding in focus is a funding opportunity from the U.S. Department of Labor focused on *strengthening community colleges*, with a deadline of June 2, 2022, to apply.

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.

Attached to this email is a hyperlinked PDF version of this note. If you would like to unsubscribe, please reply "unsubscribe" to this email.

— Sincerely, The NETL Regional Workforce Initiative Team

Workforce Funding Announcements

FUNDING SPOTLIGHT



Strengthening Community Colleges Training Grants

Department of Labor, Deadline, June 2, 2022

This Funding Opportunity Announcement (FOA) solicits applications for the second round of Strengthening Community Colleges Training Grants (or SCC2). For the purposes of this FOA, this training initiative has two parts: the standard program grants will be referred to as SCC2 Program Grants, and the additional evaluation funds will be referred to as Additional SCC2 Evaluation Funding. The purpose of this program is to address two inter-related needs: 1) to increase the capacity and responsiveness of community colleges to address identified equity gaps, and 2) to meet the skill development needs of employers in in-demand industries and career pathways, as well as the skill development needs of underserved and underrepresented workers.

Minority Serving Institutions Partnership Program (MSIPP) and Tribal Education Program

U.S. Department of Energy, Deadline, April 1, 2022

The Minority Serving Institutions Partnership Program (MSIPP) and the MSIPP Tribal Education Partnership Program (TEPP) are vital programs within the DOE/National Nuclear Security Administration (NNSA) Management and Budget, Learning and Career Management that award grants to Minority Serving Institutions (MSI) and Tribal College and Universities (TCUs) to prepare NNSA's next-generation technical workforce. MSIPP aligns investments in university capacity and workforce development with DOE/NNSA mission areas to develop

the needed skills and talent for DOE/NNSA's enduring technical workforce and to enhance research and education at MSIs. The program's primary mission is to create and foster a sustainable STEM-pipeline that prepares a diverse workforce of world class talent through strategic partnerships between MSIs, TCUs and the DOE/NNSA Enterprise. To execute this mission, MSIPP builds a network of NSE-ready students through enrichment activities from K-20 to post-doctoral level. Through university-lab consortia partnerships, students are exposed to cutting-edge research and activities in their relevant fields.

Tribal Colleges and Universities Program

National Science Foundation, Deadline, April 1, 2022

The Tribal Colleges and Universities Program (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.

The Established Program to Stimulate Competitive Research (EPSCoR) Research Infrastructure Improvement Program: Bridging EPSCoR Communities

National Science Foundation, Deadline, April 4, 2022

EPSCoR is designed to fulfill the mandate of the National Science Foundation (NSF) to promote scientific progress nationwide. Jurisdictions are eligible to participate in the NSF EPSCoR Research Infrastructure Improvement (RII) Program based on their level of total NSF support over their most recent five years. Through this program, NSF facilitates the establishment of partnerships among academic institutions and organizations in governmental, non-profit, and commercial or industrial sectors that are designed to effect sustainable improvements in a jurisdiction's research infrastructure, research and development (R&D) capacity, and hence, its R&D competitiveness.

Accelerating Innovations in Biomanufacturing Approaches through Collaboration Between NSF and the DOE Bioenergy Technologies Office (BETO) funded Agile BioFoundry

National Science Foundation, Deadline, April 4, 2022

The National Science Foundation (NSF) and the DOE BETO recognize the critical roles that synthetic and engineering biology play in advancing the U.S. bioeconomy. To translate advances in synthetic and engineering biology into products and processes that will impact the U.S. bioeconomy, there is a need to accelerate innovation and adopt new biomanufacturing approaches. The integrated Design-

Build-Test-Learn (DBTL) capabilities of the DOE BETO funded Agile BioFoundry (ABF) offer a unique resource to the academic community to develop and implement innovative biodesign and biomanufacturing technologies and practices. To help advance the U.S. bioeconomy, these agencies invite proposals from researchers at institutions of higher education and non-profit organizations. The proposals must leverage the unique DBTL capabilities available at the ABF to translate the latest advances in synthetic biology and engineering biology basic research into testable prototype processes and products that are potentially scalable and manufacturable and can be appropriately validated.

Biosystems Design to Enable Safe Production of Next-Generation Biofuels, Bioproducts and Biomaterials

U.S. Department of Energy, Deadline, April 6, 2022

Biological and Environmental Research (BER) supports fundamental, interdisciplinary research to achieve a predictive systems-level understanding of Earth, environmental and biological systems. The overarching goal of the BER Program is to support transformative science to solve critical challenges in energy security and environmental stewardship. As part of its mission, BER invests in crosscutting technologies and programs to enable multiscale, systems-level research to achieve a predictive understanding of systems biology, biological community function, and environmental behavior. Biological Systems Science Division (BSSD) within BER aims to provide the necessary fundamental science to understand, predict, manipulate, and design biological processes that underpin innovations for bioenergy and bioproduct research and to enhance our understanding of natural environmental processes relevant to DOE. BSSD supports fundamental research to understand the systems biology of plants and microbes through the Genomic Science Program (GSP). The GSP's portfolio includes systems biology research that builds on a foundation of multi-omics data and integrates multidisciplinary experimental and computational approaches. Within this framework, one of the objectives of the GSP is to develop the next generation of genome engineering technologies to unlock the potential of plants and microorganisms for the safe and efficient conversion of renewable biomass, captured CO₂ from the atmosphere, and/or petroleum-derived polymers into fuels, valuable chemicals, and materials with novel properties, advancing towards a sustainable and secure bioeconomy.

Resident Instruction Grants for Institutions of Higher Education in Insular Areas

National Institute of Food and Agriculture, Deadline, April 11, 2022

The purpose of these programs is to promote and strengthen the ability of eligible institutions in the Insular Areas to carry out education within the food, agricultural and natural resource sciences. Resident Instruction Grants Program for Institutions of Higher Education in Insular Areas projects strengthen institutional educational capacities, including libraries, curriculum, faculty, scientific instrumentation, instruction delivery systems, and student recruitment and retention, in order to respond to education needs in the food and agricultural sciences. Agriculture And Food Sciences Facilities and Equipment projects support activities to acquire or renovate facilities and relevant equipment necessary for conducting agricultural research to support tropical and subtropical agricultural research, including pest and disease research.

Rural Innovation Stronger Economy (RISE) Grants

United States Department of Agriculture Rural Development, Rural Development Service, Deadline, April 19, 2022

The primary objective of the RISE program is to support job accelerator partnerships to improve the ability of distressed rural and energy communities to create high wage jobs, accelerate the formation of new businesses, and help rural communities identify and maximize local assets. Grants are awarded on a competitive basis. The minimum award per grant is \$500K, and the maximum award amount per grant is \$2M. Grant funds may be used to pay for up to 80% of eligible project costs. Grant funds may be used to pay for: costs directly related to the purchase or construction of an innovation center located in a rural area; costs directly related to operations of an innovation center including purchase of equipment, office supplies, and administrative costs including salaries directly related to the project; costs directly associated with support programs to be carried out at or in direct partnership with job accelerators; reasonable and customary travel expenses directly related to job accelerators and at rates in compliance with [2 CFR 200.474](#); utilities, operating expenses of the innovation center and job accelerator programs and associated programs; and administrative costs of the grantee not exceeding 10% of the grant amount for the duration of the project.

Apprenticeship Building America (ABA) Grant Program — FOA-ETA-22-06

Department of Labor, Deadline, April 25, 2022

This Funding Opportunity Announcement solicits applications for the ABA grant program. This FOA supports a coordinated, national investment strategy that aims to strengthen and modernize the Registered Apprenticeship Program (RAP) system. Centered on equity, the RAP system promotes registered apprenticeship as a workforce development solution. Applicants have the opportunity to apply for funding across four grant categories: (1) State Apprenticeship System Building and Modernization, (2) Expansion of RAP Opportunities for Youth, (3) Ensuring Equitable RAP Pathways Through Pre-Apprenticeship Leading to RAP Enrollment and Equity Partnerships, and (4) Registered Apprenticeship Hubs.

Advancing Innovation and Impact in Undergraduate STEM Education at Two-year Institutions of Higher Education

National Science Foundation, Deadline, May 2, 2022

NSF's Education and Human Resources Directorate seeks to significantly enhance its support for research, development, implementation, and assessment to improve STEM education at the nation's two-year colleges. NSF encourages bold, potentially transformative projects that address immediate challenges facing STEM education at two-year colleges and/or anticipate new structures and functions of the STEM learning and teaching enterprise. This program description is a targeted approach for advancing innovative and evidence-based practices in undergraduate STEM education at two-year colleges. It also seeks to support systemic approaches to advance inclusive and equitable STEM education practices. Projects will be expected to build on prior fundamental and/or applied research in STEM education and provide theoretical and empirical justification for proposed projects as needed. Projects will also be expected to be research-informed and to result in field-tested outcomes and products that enhance STEM teaching and learning at two-year colleges. Potential Outcomes of Interest: NSF is interested in projects

with potential outcomes that include but are not limited to: making systemic improvements in STEM education; promoting diversity, equity, and inclusion; and/or mitigating the disproportionate impact of the COVID-19 pandemic on two-year colleges.

Training-based Workforce Development for Advanced Cyberinfrastructure (CI)

National Science Foundation, Deadline, May 16, 2022

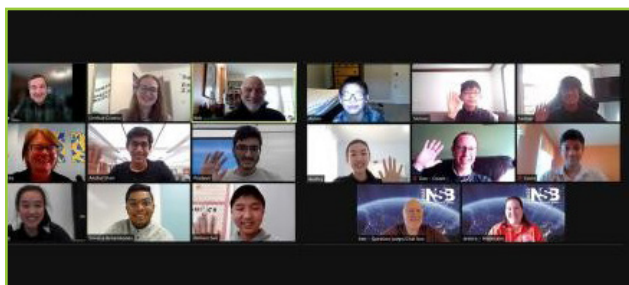
This solicitation calls for innovative, scalable training, education, and curriculum/instructional materials, along with deeper incorporation of CI professionals into the research enterprise — targeting one or more of the solicitation goals — to address emerging needs and unresolved bottlenecks in S&E research workforce development, from the postsecondary level to active researchers to CI professionals. The funded activities, spanning targeted, multidisciplinary communities, should lead to transformative changes in the state of research workforce preparedness for advanced CI-enabled research in the short- and long-term. This solicitation also seeks to broaden CI access and adoption by increasing adoption of advanced CI and of computational and data-driven methods to a broader range of S&E disciplines and institutions, enhancing the incorporation of CI professionals into the research enterprise (highlighting the value of those professionals in S&E research), and effectively utilizing the capabilities of individuals from a diverse set of underrepresented groups.



NETL Releases New Carbon Ore Resources Database (CORD) to Support Sustainable Extraction Research

Example and screenshot of CORD datasets used within the “CORD Platform” dashboard web application. The map (top center) displays coal delivery pathways extending from mine (black squares) to power plants (blue triangles and light blue highlighted circles) associated with the Powder River (Basin) coal source region (purple area on map). Datasets are summarized around the map within charts, lists, and graphs accordingly. CORD is a valuable online tool to enable the recovery of high-value carbons and critical minerals from U.S. mining and industrial waste streams needed to support innovative manufacturing while lowering the environmental footprint of using domestic resources

NETL News



North Allegheny Senior High School and Marshall Middle School Win Western Pennsylvania Science Bowl Competition

North Allegheny Senior High School Team One and Marshall Middle School Team One, both from Wexford, PA, claimed victory at the 31st annual Western Pa. Bowl (WPASB), held Feb. 26 and March 5, 2022, in a virtual setting. Forty-one teams from 27 high schools and 30 teams representing 17 middle schools throughout Western Pennsylvania participated in the competition, sponsored by the U.S. DOE's NETL. The winners of the 2022 WPASB competition will represent Western Pennsylvania in DOE's National Science Bowl scheduled for April 29–May 3, 2022, which will also be in a virtual format. The WPASB tested students' knowledge of math and science topics. High school teams competed Saturday, Feb. 26, 2022, followed by middle school students a week later. This year's Science Bowl continued with the altered format that went into effect last year; teams competed individually instead of head-to-head with the highest-scoring teams moving up. The final winning teams in the two events will compete in the 2022 National Science Bowl.



March 2022 Edition of Carbon Capture Newsletter Released

Read the latest edition of the Carbon Capture Newsletter to learn about recent developments in the U.S. DOE/NETL Carbon Capture Program. The Carbon Capture Program is developing the next generation of advanced CO₂ capture technologies that can provide step-change reductions in both cost and energy requirements over currently available technologies. The Carbon Capture Program focuses on a broad portfolio of projects, including post- and pre-combustion capture to reduce carbon emissions from fossil fuel-based power generation and industrial sources. The program is also developing a wide array of approaches to remove CO₂ that has accumulated in the atmosphere, such as direct air capture with durable storage, biomass carbon removal and storage, and enhanced mineralization.



NETL Confirms Technical Feasibility of Pittsburgh International Airport Gas-to-Fuel Plant for Jet Fuel Production

A new report by NETL confirms that it would be technically feasible to produce jet fuel at the Pittsburgh International Airport by converting natural gas from wells on the property into liquid fuel using a commercially available technology — a step that could build upon the airport's already successful grid independence initiatives, insulate the airport from fuel disruptions in the marketplace, and provide a path to reduced greenhouse gas emissions.



NETL-Supported REE from Coal Ash Technology Development Attracts New Support from the Department of Defense (DOD)

Progress on a \$4M plan to pursue a technology for recovering rare earth elements (REEs) and other critical minerals from coal ash has its roots in a ground-breaking project spearheaded by NETL and private partner – Physical Sciences Inc. (PSI). The DOD's action is an example of how NETL leverages cooperative partnerships for technology development in the public and private sectors. PSI, with support from NETL, demonstrated a concept of how REE concentrates can be produced using coal ash resources from Appalachia. The goal of the project was to provide a potential domestic source of REEs along with a viable environmental remediation process for coal fly ash. REEs are crucial for a variety of economic, energy and defense applications. The current supply chain reliant on other countries. A domestic source would insulate the U.S. from disruptions in global trade of REEs.



General Electric Global Research (GEGR), Cooperative Energy Conduct Commissioning Test of First of Its Kind Transformer

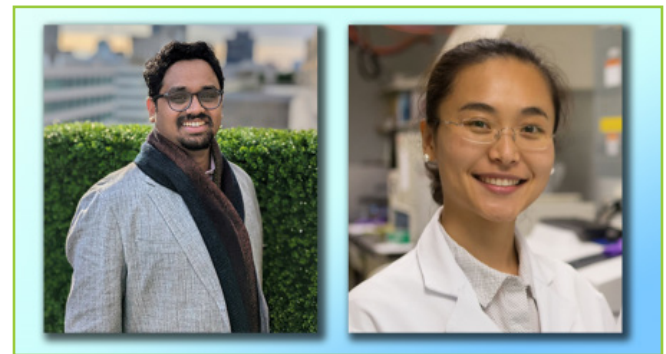
GEGR in partnership with Cooperative Energy completed commissioning tests for a first-of-its-kind full-scale prototype large power transformer (LPT), a technology that can lead to greater grid resilience during power outages. This work is being performed under a cooperative agreement awarded by the U.S. Department of

Energy Office of Electricity's Transformer Resilience and Advanced Components program (TRAC), which is managed by NETL. Now fully operational as part of the power distribution system in Columbia, MS, the Large Power Transformer (LPT) represents the world's first variable impedance flexible design transformer in its class, rated at 60 megavolt amperes. This transformer's variable impedance design advances a more flexible and adaptable LPT promoting greater standardization to increase grid resilience, such as faster recovery through greater interchangeability of components.



NETL Celebrates Women's History Month

March is Women's History Month, providing NETL with a prime opportunity to celebrate the achievements of women from across the Lab who are advancing research to mitigate climate change, discovering clean energy technologies and leading teams of research scientists and engineers as they contribute to the legacy of women who have served as pioneers in their fields. Throughout the month, NETL will feature some dedicated scientists and professionals and highlight the important roles they play in leading projects throughout the Lab. Watch for Women's History Month posts on NETL social media. In addition to their accomplishments, those profiled will discuss the progress that has been made to ensure women are fairly and equally represented in STEM fields. These talented individuals also will share how closing the gender gap in STEM careers builds diversity and inclusion, which are essential components to cultivate workplace environments where different viewpoints and perspectives are needed to find solutions to challenging issues.

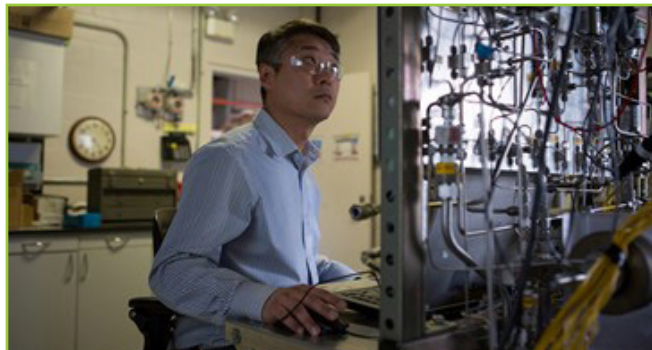


NETL Research Associate and Mentor Pursue Artificial Intelligence/Machine Learning Applications for Energy Infrastructure

The tutelage and guidance provided by NETL's Ruishu Wright as she mentors research associate Abhishek Venketeswaran demonstrates how the Lab is working to apply new concepts to the energy sector while fostering the careers of tomorrow's STEM specialists. Venketeswaran grew up in India and developed a passion for mathematics at an early age, which prompted him to pursue engineering. He earned his

bachelor's and master's degrees in aerospace engineering from the Indian Institute of Technology in Madras. Venketeswaran went on to earn his doctorate in aerospace engineering from the University at Buffalo before joining NETL's internship program in September 2019 as a post-doctoral research associate administered by the Oak Ridge Institute for Science and Education.

Reports and Resources



Help Wanted- Diversity in Clean Energy

Environmental Entrepreneurs

The emerging field of clean energy requires a more diverse and representative workforce. Despite its broad range of businesses, including construction, utilities, manufacturing, professional services, and repair and maintenance, the clean energy sector is dominated by white men. Given the incredible job growth of the energy sector over the past decade, this lack of diversity threatens to cause women, Hispanic and Latino workers, and Black workers in particular to miss out on one of America's great economic expansions.

DOE STEM Rising



All in STEM Resources Tool

Diversity and inclusion in the STEM workforce produce better results, is a moral imperative, and is a mission imperative. America's STEM needs are enormous, and we need an "all-hands-on-deck" approach to fill them.

For the sake of our energy security, our economic security, and our national security, we must draw upon all of America's available talent and ability, across every part of society. Learn about the ways the U.S. DOE is ensuring a diverse and inclusive energy workforce of today and tomorrow with this resource tool.

Workforce Development for Teachers and Scientist Resources and Programs Page

The *Workforce Development for Teachers and Scientists* (WDTs) program goal is to help ensure that DOE has a sustained pipeline for the STEM workforce. To achieve this goal, WDTs sponsors *undergraduate internships*, *faculty appointments*, and *graduate thesis research*; administration of the *Albert Einstein Distinguished Educator Fellowship* for K–12 STEM teachers for federal agencies; and annual, nationwide, middle- and high-school science competitions culminating in the *National Science Bowl* finals in Washington, D.C. These all help to encourage and develop the next generation of scientists, technologists, engineers, and mathematicians.

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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