RWFI E-NOTE MONTHLY

REGIONAL WORKFORCE INITIATIVE • MAY 2021

Welcome Message

Greetings NETL RWFI stakeholders,

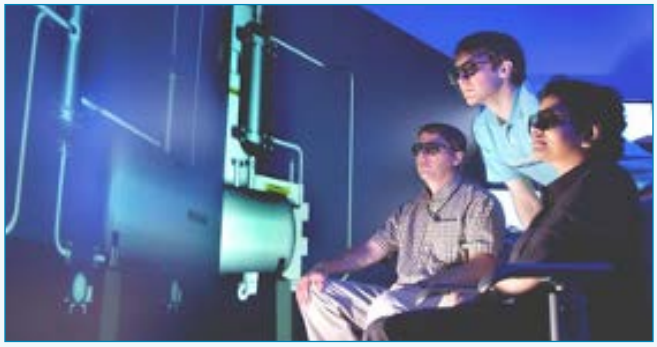
This month's funding in focus is from the National Science Foundation, specifically targeting the Appalachian and Delta Regions, through their *Workforce Opportunity for Rural Communities Initiative* funding opportunity.

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.

– Sincerely, The NETL Regional Workforce Initiative Team

Workforce Funding Announcements

FUNDING SPOTLIGHT



Workforce Opportunity for Rural Communities (WORC)

U.S. Department of Labor, Deadline, July 21, 2021

This announcement solicits applications for the WORC Initiative for grants serving the Appalachian and Delta regions. The purpose of this program is to demonstrate the alignment of regionally driven, comprehensive approaches to addressing economic distress and the necessary workforce development activities to ensure dislocated and other workers in the regions are capable of succeeding in current and future job opportunities. Successful long-term economic growth strategies build upon bottom-up, community-led plans that promote economic resilience and maximize regional strengths. The WORC Initiative grants take a long-term view toward assisting eligible communities, including those energy communities that currently or historically have had a high concentration of employment in energy extraction and related industries, in diversifying their economies by investing in developing a skilled workforce through training and other approaches that aligns with local strategies developed by regional partners. This long-term view also acknowledges the impact of the opioid crisis and the significant challenges it presents to a community's workforce. To address these challenges, the Employment and Training Administration encourages applicants to include within their applications strategies to address the employment and training needs of individuals affected by substance use disorder in their communities.

Industry-University Cooperative Research Centers (IUCRC) Program

National Science Foundation, Deadline, June 9, 2021

The IUCRC program catalyzes breakthrough pre-competitive research by enabling close and sustained engagement between industry innovators, world-class academic teams, and government agencies. IUCRCs help industry partners and government agencies connect directly and efficiently with university researchers to achieve three primary objectives: 1) conduct high-impact research to meet shared and critical industrial needs in companies of all sizes; 2) enhance U.S. global leadership in driving innovative technology development; and 3) identify, mentor, and develop a diverse, highly skilled science and engineering workforce.

Traineeship in Isotope Research & Development and Production

U.S. Department of Energy, Deadline, June 14, 2021

The U.S. DOE Office of Science program in Isotope Research and Development (R&D) and Production announced its interest in receiving applications from domestic entities seeking to assist in coordinating and supporting the nationwide U.S. DOE traineeship in isotope R&D and production. This pilot program is intended to provide support for participants from domestic institutions and is envisioned to support training and research and/or production experiences for students pursuing undergraduate and graduate level degrees in fields related to isotope science to develop the next generation workforce in isotope production and processing.

Office of Postsecondary Education: Higher Education Programs (HEP): Hispanic-Serving Institutions (HSI) STEM and Articulation Program Assistance Listing Number 84.031C

U.S. Department of Education, Deadline, June 14, 2021

The HSI STEM and Articulation program supports eligible HSIs, as defined in section 502 of the Higher Education Act of 1965, as amended (HEA) (20 U.S.C. 1101a), in developing and carrying out activities described in section 503(b) of the Higher Education Act (20 U.S.C. 1101b (b)) to increase the number of Hispanic and low-income students attaining degrees in the fields of STEM; and to develop model transfer and articulation agreements between two-year HSIs and four-year institutions in such fields.

Defense Manufacturing Communities Support Program

U.S. Department of Defense, June 15, 2021

The Defense Manufacturing Community Support program, authorized under Section 846 of the FY19 National Defense Authorization Act (PL 115-232), is designed to undertake long-term investments in critical skills, facilities, research and development, and small business support in order to strengthen the national security innovation and manufacturing base. The program also seeks to ensure complementarity of those communities so designated with existing defense manufacturing institutes. Defense manufacturing institutes are manufacturing ecosystems established since 2014, with common manufacturing and design challenges revolving around specific technologies. To date, the Department of Defense has established nine manufacturing Institutes, listed *here*. (For complete roster of all existing manufacturing institutes, see *this link*.)

Agriculture and Food Research Initiative Competitive Grants Program Education and Workforce Development (EWD) Program

U.S. Department of Agriculture, Deadline, July 1, 2021

The Agriculture and Food Research Initiative EWD program focuses on developing the next generation of research, education, and extension professionals in the food and agricultural sciences. In FY21, EWD invites applications in five areas: professional development for agricultural literacy, training of undergraduate students in research and extension, fellowships for predoctoral candidates, fellowships for postdoctoral scholars, and a brand-new program for agricultural workforce training.

Racial Equity in STEM Education

National Science Foundation, Deadline, July 13, 2021

Persistent racial injustices and inequalities in the United States have led to renewed concern and interest in addressing systemic racism. The National Science Foundation (NSF) Directorate for Education and Human Resources (EHR) seeks to support bold, ground-breaking, and potentially transformative projects addressing systemic racism in STEM. Proposals should advance racial equity in STEM education and workforce development through research (both fundamental and applied) and practice.

Improving Undergraduate STEM Education: Education and Human Resources (IUSE: EHR)

National Science Foundation, Deadline, July 21, 2021

The IUSE: EHR is a core NSF STEM education program that seeks to promote novel, creative, and transformative approaches to generating and using new knowledge about STEM teaching and learning to improve STEM education for undergraduate students. The program is open to application from all institutions of higher education and associated organizations. NSF places high value on educating students to be leaders and innovators in emerging and rapidly changing STEM fields as well as educating a scientifically literate public. In pursuit of this goal, IUSE: EHR supports projects that seek to bring recent advances in STEM knowledge into undergraduate education, that adapt, improve, and incorporate evidence-based practices into STEM teaching and learning and that lay the groundwork for institutional improvement in STEM education. In addition to innovative work at the frontier of STEM education, this program also encourages replication of research studies at different types of institutions and with different student bodies to produce deeper knowledge about the effectiveness and transferability of findings.

CyberCorps: Scholarship for Service (SFS)

National Science Foundation, Deadline, July 28, 2021

The goals of the CyberCorps: SFS program are aligned with the U.S. strategy to develop a superior cybersecurity workforce. These goals are to increase the quantity of new entrants to the government cyber workforce, to increase the national capacity for the education of cybersecurity professionals, to increase national research and development capabilities in critical information infrastructure protection, and to strengthen partnerships between institutions of higher education and relevant employment sectors. The SFS program welcomes proposals to establish or to continue scholarship programs in cybersecurity. All scholarship recipients must work after graduation for a federal, state, local, or tribal government organization in a position related to cybersecurity for a period equal to the length of the scholarship. A proposing institution must provide clearly documented evidence of a strong existing academic program in cybersecurity. Such evidence can include ABET accreditation in cybersecurity; a designation by the National Security Agency and the Department of Homeland Security as a Center of Academic Excellence in Cyber Defense Education, Cyber Operations, or Research; or equivalent evidence documenting a strong program in cybersecurity.

Historically Black Colleges and Universities (HBCU) Research Center of Excellence

Department of Housing and Urban Development, Deadline, July 29, 2021

Eligible organizations include all HBCU as defined in Section 322 of the Higher Education Act of 1965. Only HBCU are eligible to compete for, or receive, awards made under this announcement. The Higher Education Act of 1965, as amended, defines an HBCU as any historically black college or university that was established prior to 1964, whose principal mission was, and is, the education of Black Americans, and that is accredited by a nationally recognized accrediting agency or association determined by the Secretary of Education to be a reliable authority as to the quality of training offered or is, according to such an agency or association, making reasonable progress toward accreditation. Individuals, foreign entities, and sole proprietorship organizations are not eligible to compete for, or receive, awards made under this announcement.

Alliances for Graduate Education and the Professoriat (AGEP)

National Science Foundation, Deadline, August 24, 2021

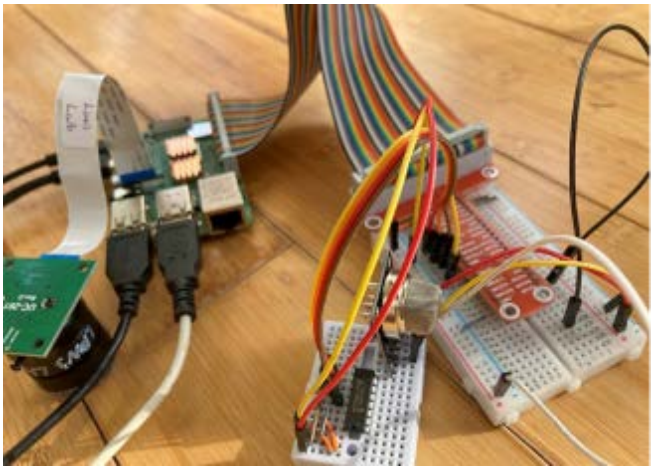
Improving equity and inclusion is critical to advancing STEM faculty, educating America's future STEM workforce, fostering individual opportunity, and contributing to a thriving U.S. economy. The NSF AGEP program, therefore, seeks to fund grants that advance and enhance the systemic factors that support equity and inclusion and, consequently, mitigate the systemic inequities in the academic profession and workplace. The AGEP program goal to increase the number of historically underrepresented minority faculty is bolstered by the National Science Board's "Vision 2030: Vision for the Future."

Improving Undergraduate STEM Education: HSI

National Science Foundation, Deadline, August 25, 2021

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 fundamental research (1) on engaged student learning, (2) about what it takes to diversify and increase participation in STEM effectively, and (3) 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.

NETL News



Morgan State University Collaboration Developing Ultra-High Temperature Thermocouples

In support of NETL's HBCU and Other Minority Institutions (HBCU-OMI) program, the lab consistently engages new organizations such as Morgan State University (MSU), which is developing robust high-temperature sensors that will unlock higher power plant efficiencies as part of their first ever collaboration with NETL. "Higher efficiencies are key to reducing carbon emissions," said Maria Reidpath, who manages the MSU project. "As a result, accurate temperature monitoring is critical to achieving these goals. That is why the MSU work is so important — the team is developing much-needed temperature sensors and making sure they will survive in the extreme environments of advanced power generation systems." The sensors under development at MSU are ceramic-based, super-high temperature thermocouples that are corrosion resistant and erosion resistant up to 1800 degrees Celsius and 1,000 psi. The ceramic thermocouples are as economical as traditional metal-based thermocouples while providing the ability to work under extreme conditions in the same ways as more expensive optical and acoustic sensors.

High School Teams Compete in National Science Bowl

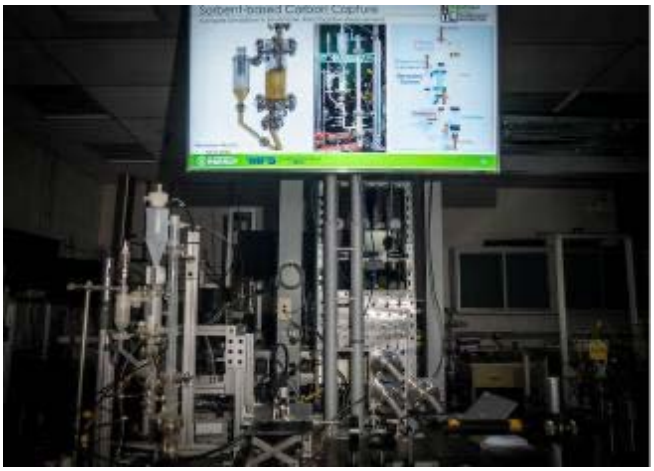
After taking first place in their respective regional Science Bowl competitions, Princeton Senior High School (Princeton, West Virginia) and Franklin Regional High School (Murrysville, Pennsylvania) competed in the U.S. DOE National Science Bowl high school preliminary rounds May 22, 2021. Unfortunately, neither team advanced to the elimination rounds. The National Science Bowl is a nationwide competition held annually to promote science and technology in education. High school students compete as teams in an action-packed quiz bowl format to answer questions on science, math and engineering. Across the country, 5,740 high school students competed on 1,184 teams from 796 schools over the weekend. First-place winners of regional competitions competed in three preliminary rounds, with the top 32 teams advancing to the elimination rounds. All events were held virtually due to the ongoing COVID-19 pandemic..

NETL Director Anderson Delivers Keynote Address at Carbon and Coal Virtual Forum

NETL Director Brian Anderson, Ph.D., delivered the keynote address and connected with national and state energy experts this week at a virtual forum hosted by Discover the Real West Virginia Foundation, Inc. The forum, titled "The Value of Carbon and Coal in West Virginia's Energy Future," discussed how West Virginia can be an integral part of the solution in reducing the nation's carbon emissions and identified the challenges and opportunities surrounding the advancement of carbon reduction technologies in the Mountain State. Notable speakers included Senator Joe Manchin (D-W.Va.), who leads the foundation, and U.S. Secretary of Energy Jennifer Granholm. Granholm highlighted the importance of carbon capture, utilization and storage (CCUS) and carbon dioxide (CO_2) removal technologies while sharing the U.S. DOE's commitment to revitalizing the nation's manufacturing base and working toward a net-zero carbon future.

U.S. DOE Funds Projects to Recycle, Treat Water at Power Plants

Today, the U.S. DOE's Office of Fossil Energy and Carbon Management selected two projects to receive nearly $2M in federal funding for cost-shared research and development under funding opportunity announcement DE-FOA-0002399, Water Management for Thermal Power Generation. In the U.S., a power generation energy transition toward lower carbon intensity technologies is underway. This decarbonization may come in many forms, including CCUS or optimizing asset utilization through water treatment and heat rate improvements. To enable a low-carbon future that minimizes environmental impacts, additional innovation is needed to reduce the freshwater intensity of power generators. Other innovations can provide additional treated non-traditional water (for example, brackish groundwater) for low-carbon purposes such as hydrogen production and carbon capture and storage.



Collaborations with Minority Serving Institutions Bolster NETL Modeling Capabilities

NETL's HBCU and Other Minority Institutions (HBCU-OMI) program has enabled more than 40 groundbreaking energy research projects since 2010. Two such projects, which were selected under the most recent university training and research funding opportunity announcement, have the potential to bolster NETL's world-renowned Multiphase Flow with Interphase eXchanges (MFiX) software suite through the development of machine learning (ML) and artificial intelligence (AI) techniques for computational fluid dynamics code. "MFiX is the world's leading open-source design software for multiphase flow systems," said Sydni Credle, NETL's technology manager for University Training and Research. "The software is continuously being updated, and emerging ML and AI techniques hold the promise of enabling more accurate simulations and faster development of clean energy technologies."

Reports and Resources

FACT SHEET: Biden Administration Accelerates Efforts to Create Jobs Making American Buildings More Affordable, Cleaner, and Resilient

The U.S. DOE, General Services Administration, and Environmental Protection Agency announce new programs to electrify buildings, invest $30M in America's workforce, and save consumers money.

Rewiring Communities: A Plan to Accelerate Climate Action and Environmental Justice by Investing in Household Electrification at the Local Level

Rewiring Communities is a new, innovative proposal focused on delivering the climate, economic and health benefits of household electrification to low-to-moderate income families by bringing together the capabilities of local communities and the financial resources and administrative flexibility of the proposed Clean Energy & Sustainability Accelerator.

LinkedIn May 2021 Workforce Report

The LinkedIn Workforce Report is a monthly report on employment trends in the U.S. workforce. It is divided into two sections: a national section that provides insights into hiring, skills gaps, and migration trends across the country and a city section that provides insights into localized employment trends in 20 of the largest U.S. metro areas.

Key Insights:

- Nationally, across all industries, U.S. hiring continued its gradual recovery and increased 3.5% in April 2021 compared to the previous month, reaching pre-COVID highs experienced in February 2020. National hiring was 69.4% higher in April 2021 compared to April 2020, and these large year-over-year increases are expected as the anniversaries of hiring drops at the beginning of the pandemic are reached.
- The industries with the most notable hiring shifts month-to-month in April were Recreation & Travel (10.3% higher); Entertainment (5.2% higher); and Software & IT Services (3.9% higher). Recreation & Travel and Entertainment in particular were industries hit hard by the pandemic as in-person services were limited. With these significantincreases, thirteen industries are now hiring at or above their pre-COVID level.
- Twelve metro areas out of the 20 tracked are now hiring at or above their pre-COVID level. The metro areas with the most notable hiring shifts month-to-month in April were New York City (5.8% higher); Boston (4.8% higher), and St. Louis (0.9% higher).

DOE STEM Rising

DOE Makes Major Steps Toward Reducing the Carbon Footprint of Buildings, Which Use 40% of the Nation's Energy; Invests $30M in New Workforce Training Initiatives

"America's path to a net-zero carbon economy runs straight through our buildings, which means we need to help households and commercial buildings across the nation reduce their emissions and convert to cheaper, cleaner energy," said U.S. Secretary of Energy Jennifer Granholm. "These new DOE investments and initiatives will help unlock new innovation for cleaner buildings, while preparing a strong, skilled, diverse American workforce to seize good-paying job opportunities right here at home."

Oak Ridge National Laboratory (ORNL) Partners on Science Kits for STEM Schools

ORNL, the U.S. DOE, the *Center of Science and Industry* and the *Tennessee STEM Innovation Network* have partnered to deliver hundreds of free science kits called Learning Lunchboxes to STEM-designated schools in East Tennessee. The program, named the Tennessee Distance Learning Initiative, provides engaging, hands-on activities aligned with *Next Generation Science Standards*.

$5M U.S. DOE Grant to Boost Future Workforce at Savannah River Site

A $5M grant that U.S. DOE recently awarded to a local nonprofit will strengthen the workforce pool needed to support the *Environmental Management (EM)* and *National Nuclear Security Administration* missions, particularly at the *Savannah River Site*. "EM will need a talent pipeline to continue forward with progress tackling the environmental cleanup legacy. Continuing our partnership with the Savannah River Site Community Reuse Organization and the regional academic community is a great resource to accomplish that goal," said Kristen Ellis, EM senior advisor for STEM and talent acquisition.

Oak Ridge Contractor Awards $30K in Grants to 30 Area Schools

Oak Ridge cleanup contractor UCOR is awarding $30K in grants for STEM projects to benefit 30 schools across a nine-county region. Since 2012, UCOR has given more than $230K in grants to local schools to support STEM education and help develop the next-generation workforce.

ABOUT NETL

NATIONAL ENERGY TECHNOLOGY LABORATORY

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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