

RWFI E-NOTE MONTHLY

REGIONAL WORKFORCE INITIATIVE • NOVEMBER 2020

Welcome Message

Greetings NETL RWFI stakeholders,

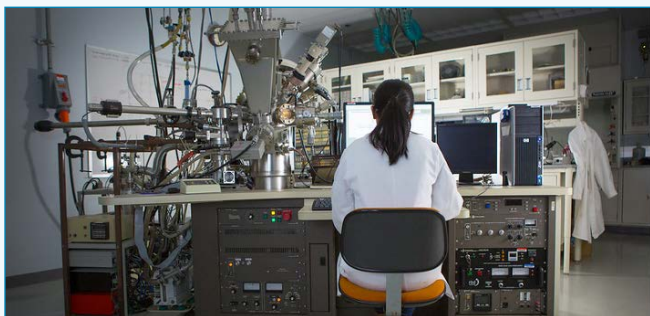
In this month's funding in focus is a Funding Opportunity Announcement from the Department of Energy on the topic of the carbon ore, rare earth, and critical minerals workforce (*CORE-CM Initiatives*). In the "Reports and Resources" section of this E-Note is a report released by the Appalachian Regional Commission that surveys the industrial makeup, employment, and earnings data in the Appalachian Region entitled *Industrial Make-Up of the Appalachian Region: Employment and Earnings, 2002–2017*.

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



Carbon Ore, Rare Earth and Critical Minerals (CORE-CM) Initiative for U.S. Basins

U.S. Department of Energy, Deadline, January 5, 2021

The Funding Opportunity Announcement (FOA) titled "Carbon Ore, Rare Earth and Critical Minerals (CORE-CM) Initiative for U.S. Basins" seeks to solicit applications focused on the anticipated development and implementation of U.S. regional strategies through recipient-developed and coalition-led efforts for multiple U.S. basins that will enable the realization of the full economic potential of producing Rare Earth Elements, Critical Minerals, and high-value, nonfuel, Carbon-Based Products from coal. Coalitions will be multi-faceted and include coal mining companies, regional private industries, universities, training and workforce development organizations, National Laboratories, state, local and federal agencies, and non-profit/non-governmental stakeholders to facilitate the establishment of public-private innovation centers to incubate innovated mining, beneficiation, processing, and purification technologies. Each project is anticipated to provide a foundation for educating the next generation of technicians, skilled workers, and STEM professionals needed to implement each basin's strategy.

Alliances for Graduate Education and the Professoriate (AGEP)

National Science Foundation, Deadline, December 11, 2020

AGEP addresses academic workforce development in a broadening participation and institutional capacity building context. Strategic collaborations are encouraged with multiple academic partners, the private sector, non-governmental organizations, professional organizations, government agencies, national laboratories, field stations, teaching and learning centers, informal science centers, and other relevant STEM and/or STEM education research organizations. The AGEP program encourages project leadership by, and partnerships with, all types of minority serving institutions, such as majority minority serving institutions; historically black colleges and universities; high Hispanic enrollment institutions; tribal colleges and universities; and institutions serving native Hawaiians, native Pacific Islanders, and/or Alaskan natives.

Economic Development Research and National Technical Assistance FY18–FY20

Economic Development Agency, Deadline, December 11, 2020

FY18–20 Notice of Funding Opportunity announcement publishing the Economic Development Agency's application submission requirements and review procedures for applications received under EDA's R&E and NTA programs, authorized under the Public Works and Economic Development Act of 1965, as amended (42 U.S.C. § 3121 et seq.).

Industry-University Cooperative Research Centers (IUCRC) Program

National Science Foundation, Deadline, December 16, 2020

IUCRCs are formed around research areas of strategic interest to U.S. industry. Industry is defined very broadly to include companies (large and small), startups and non-profit organizations. Principal Investigators form a center around emerging research topics of current research interest, in a pre-competitive space but with clear pathways to applied research and commercial development. Industry partners join at inception, as an existing center grows or they inspire the creation of a new center by recruiting university partners to leverage National Science Foundation (NSF) support. Government agencies participate in IUCRCs as members or by partnering directly with NSF at the strategic level.

Minority Serving Institutions (MSI) Partnership Program (MSIPP) — Tribal Education Partnership Program

Department of Energy, Deadline, December 18, 2020

MSIPP is a vital program within DOE/National Nuclear Security Administration (NNSA) Management & Budget, Learning & Career Management that awards grants to Minority Serving Institutions (MSI) 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 and the DOE/NNSA Enterprise. To execute this mission, MSIPP builds a network of nuclear science and engineering ready students through enrichment activities, from K-12 to post-doctoral level. Through university-lab consortia partnerships, students are exposed to cutting-edge research and activities in their relevant fields. Within this, the Tribal Education Partnership Program is a sub-program within MSIPP that specifically awards grants to Tribal College and Universities in support of MSIPP's mission. For more information, search the above link under Reference # DE-FOA-0002368.

Technical Assistance to Brownfield Communities

Environmental Protection Agency, Deadline, December 22, 2020

The total estimated funding for the solicitation is \$11,000,000. EPA anticipates award of up to 11 cooperative agreement(s). The maximum value of each agreement will be based on the technical assistance being provided but the funding for no geographical area will exceed \$1,000,000 under this competitive opportunity. If a single entity is selected for multiple geographical areas, those applications may be combined into a single award so the total award may exceed \$1,000,000. Cooperative agreements awarded will be funded incrementally. Additional funds may be added in each subsequent year of the agreement, subject to satisfactory performance, agency priorities, and the availability of funds.

FY19 FOA for the Office of Naval Research (ONR) Navy Reserve Officers' Training Corps (ROTC) Cybersecurity Training Program

Office of Naval Research, Deadline, December 31, 2020

The ONR seeks a broad range of applications for augmenting existing or developing innovative solutions that directly maintain, or cultivate a diverse, world-class STEM workforce in order to maintain the U.S. Navy and Marine Corps' technological superiority. The goal of any proposed effort must provide solutions that will grow a capable and trained workforce with the skills to defend against emergent cyber and electronic warfare threats. Funding efforts will be targeted primarily toward projects addressing the technical skills taught to university students enrolled in ROTC programs; these ROTC programs are not restricted to any particular service. While this effort is targeted primarily toward students enrolled in ROTC programs, it can also include civilian students.

Technical Assistance and Training Grant Program

U.S. Department of Agriculture, Deadline, December 31, 2020

The Technical Assistance and Training (TAT) Grant Program has been established to assist communities with water or wastewater systems through free technical assistance and/or training provided by the grant recipients. Qualified private non-profit organizations will receive TAT grant funds to identify and evaluate solutions to water and waste disposal problems in rural areas, assist applicants in preparing applications for water and waste grants made at the State level offices, and improve operation and maintenance of existing water and waste disposal facilities in rural areas.

Research on the Science and Technology Enterprise: Statistics and Surveys — R&D, U.S. Science and Technology (S&T) Competitiveness, STEM Education, S&T Workforce

National Science Foundation, Deadline, January 15, 2021

The Center would like to enhance its efforts to support analytic and methodological research in support of its surveys, and to engage in the education and training of researchers in the use of large-scale nationally representative datasets. The National Center for Science and Engineering Statistics (NCSES) of the NSF welcomes efforts by the research community to use NCSES data for research on the science and technology enterprise, to develop improved survey methodologies for NCSES surveys, to create and improve indicators of S&T activities and resources, and strengthen methodologies to analyze and disseminate S&T statistical data. To that end, NCSES invites proposals for individual or multi-investigator research projects, doctoral dissertation improvement awards, workshops, experimental research, survey research and data collection and dissemination projects under its program for Research on the Science and Technology Enterprise: Statistics and Surveys.

Training-based Workforce Development for Advanced Cyberinfrastructure (CI)

National Science Foundation, Deadline, January 20, 2021

This solicitation calls for innovative, scalable training, education, and curriculum/instructional materials — targeting one or both of the solicitation goals — to address the emerging needs and unresolved bottlenecks in scientific and engineering research workforce development, from the postsecondary level to active researchers. The funded activities, spanning targeted, multidisciplinary communities, will lead to transformative changes in the state of research workforce preparedness for advanced CI-enabled research in the short- and long-terms. As part of this investment, this solicitation also seeks to broaden CI access and adoption by increasing or deepening accessibility of methods and resources of advanced CI and of computational and data-driven science and engineering by a wide range of scientific disciplines and institutions with lower levels of CI adoption to date and harnessing the capabilities of larger segments of diverse underrepresented groups. Proposals from, and in partnership with, the aforementioned communities are especially encouraged.

Buildings Energy Efficiency Frontiers & Innovation Technologies

U.S. Department of Energy, Deadline, January 20, 2021

The objective of this Funding Opportunity Announcement is to research and develop next-generation building technologies that have the potential for significant energy savings and improved demand flexibility, affordability, and occupant comfort. An additional goal is to advance building construction, remodeling, and retrofit practices and associated workforces.

Women and Minorities in STEM Fields Program (WAMS)

U.S. Department of Agriculture, Deadline, January 21, 2021

The purpose of this program is to support research, education/teaching, and extension projects that increase participation by women and underrepresented minorities from rural areas in STEM. The U.S. Department of Agriculture's National Institute of Food and Agriculture intends this program to address educational needs within broadly defined areas of food, agriculture, natural resources, and human (FANH) sciences. Applications recommended for funding must highlight and emphasize the development of a competent and qualified workforce in the FANH sciences. WAMS-funded projects improve the economic health and viability of rural communities by developing research and extension initiatives that focus on new and emerging employment opportunities in STEM occupations. Projects that contribute to the economic viability of rural communities are also encouraged.

Inclusion across the Nation of Communities of Learners of Underrepresented Discoverers in Engineering and Science (INCLUDES)

National Science Foundation, Deadline, January 26, 2021

NSF INCLUDES is a comprehensive national initiative to enhance U.S. leadership STEM discoveries and innovations focused on NSF's commitment to diversity, inclusion, and broadening participation in these fields. The vision of NSF INCLUDES is to catalyze the STEM enterprise to work collaboratively for inclusive change, resulting in a STEM workforce that reflects the population of the nation. More specifically, NSF INCLUDES seeks to improve collaborative efforts aimed at enhancing the preparation, increasing the participation, and ensuring the contributions of individuals from groups that have been historically underrepresented and underserved in the STEM enterprise such as African Americans, Alaska Natives, Hispanics, Native Americans, Native Hawaiians, Native Pacific Islanders, persons with disabilities, persons from economically disadvantaged backgrounds, and women and girls. Significant advancement in the inclusion of underrepresented groups in STEM will result in a new generation of STEM talent and leadership to secure our nation's future and long-term economic competitiveness.

Hispanic-Serving Institutions (HSI) Education Grants Program

U.S. Department of Agriculture, Deadline, January 28, 2021

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.

Improving Undergraduate STEM Education: HSIs

National Science Foundation, Deadline, February 10, 2021

The goals of the HSI program are to enhance the quality of 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 that (i) is on engaged student learning, (ii) is about what it takes to diversify and increase participation in STEM effectively, and (iii) 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



NETL Positions America as World Leader to Convert Natural Gas into Valuable Products

NETL talent and expertise can strengthen U.S. capabilities to serve as a world leader in the conversion of natural gas and its liquid components into the chemical feedstocks to manufacture an extensive list of commodities and consumer products used daily. To maximize growing investment in R&D, NETL is prioritizing the Lab's efforts to support projects focused on converting natural gas into the chemical building blocks needed to manufacture higher value products and positioning its multidisciplinary teams to support innovative technologies to transform the petrochemical sector. U.S. energy security is predicated on increasing natural gas usage. The chemicals marketplace also relies predominantly on natural gas, and the petrochemical industry is actively seeking to identify more uses for natural gas as a product feedstock and exploring ways to deliver those products to market faster, at lower cost, and with less environmental impact.

TECHCONNECT BUSINESS

VIRTUAL SUMMIT & SHOWCASE

NETL Pitches Innovations with Commercial Potential at TechConnect Virtual Summit

NETL researchers joined other innovators and industry experts from around the globe as they pitched cutting-edge technologies with commercial potential at the 2020 TechConnect Business Virtual Summit and Showcase, held virtually November 19–20, 2020. The TechConnect Innovation Showcase provides a unique and vetted pipeline for corporate, federal and venture capitalist prospectors to discover and connect with emerging technologies. During a pre-recorded Thursday session, NETL researchers pitched a technology for removing carbon dioxide from flue gas and a technology for removing dyes from water sources. Both of these technology pitches were recognized with *TechConnect Innovation Awards*.



NETL Supercomputer Ranks Among the Most Powerful in the World

According to the latest rankings by TOP500, NETL's Joule 2.0 supercomputer remains among the most powerful in the world, securing a position of 11th among DOE national labs, 26th in the U.S. and 82nd in the world. Supercomputing is essential in achieving NETL's mission to discover, integrate and mature technology solutions that enhance the nation's energy foundation and protect the environment for future generations. By expediting technology development through computational science and engineering, Joule 2.0 helps NETL cut costs, save time, and spur valuable economic investments with a global impact. A \$16.5 million upgrade in 2019 boosted Joule's computational power to 5.767 PFLOPS, meaning that it can perform more than 5 quadrillion calculations per second. That's equivalent to roughly 54,658 desktop computers.



A Generational Opportunity to Maximize Appalachia's Shale Gas Boom

Across Appalachia, natural gas producers are supporting the energy security of the U.S. as they continue to tap the vast shale gas resources of the region. Shale gas is used for heating and power production, but the chemical industry also relies heavily on natural gas as a feedstock to manufacture valuable chemicals. With some of the world's most cutting-edge facilities and a roster of preeminent fossil energy researchers, the Lab has decades of experience converting carbon to higher-value products and the established infrastructure to create an innovation center capable of transforming the downstream sector. With this in mind, NETL has prioritized natural gas utilization, leveraging the Lab's capabilities and expertise to identify more uses for natural gas and bring valuable products to market faster, at lower cost and with less environmental impact. "We strive to bring national focus and coordination to technology development associated with the conversion of natural gas to high-value commodities, ultimately strengthening our national economy and national security," said NETL Director Brian J. Anderson.

Reports and Resources



Industrial Make-Up of the Appalachian Region: Employment and Earnings, 2002–2017

Appalachian Regional Commission

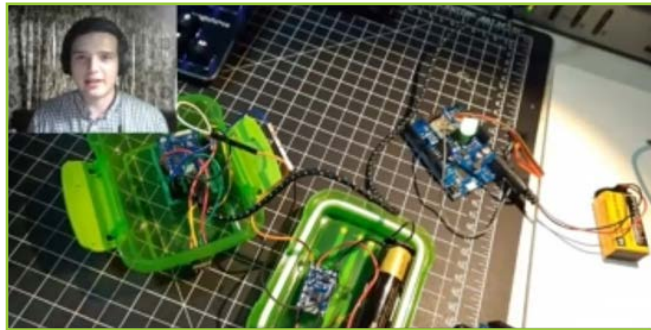
This report looks at the industrial make-up of employment and earnings in the Appalachian Region compared to the U.S. as a whole, differences found within the region, and recent changes that have taken place.

COVID-19 in Appalachia

Appalachian Regional Commission

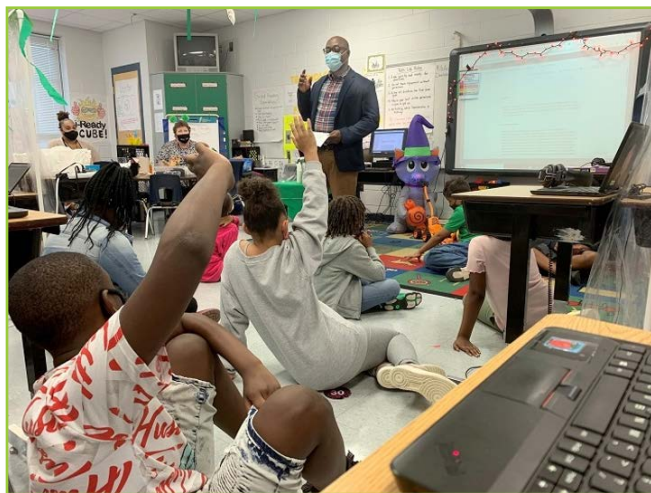
As COVID-19 continues to impact the nation, the Appalachian Regional Commission (ARC) is carefully monitoring its effects in Appalachia. ARC's goal during this crisis is to be a resource hub for the region. Explore the maps, data, and webinars collected from the federal government, the 13 Appalachian state governments, and ARC partners.

DOE STEM Rising



Spotlight on the Ohio University Voinovich School PORTSfuture Program

Between 2010 and 2020, the PORTSfuture Program has engaged more than 13,000 K-12 students and approximately 100 college students in STEM activities focused on technology, energy, environment, entrepreneurship, and water quality issues. Helping to grow a STEM environment for rural Appalachian schools is a primary activity for The Ohio University Voinovich School's PORTSfuture Program. Through a grant funded from the DOE Office Environmental Management (EM)'s Portsmouth/Paducah Project Office, PORTSfuture has been able to reach out to students in a four-county area in southern Ohio, the location of the former Portsmouth Gaseous Diffusion Plant that is currently undergoing cleanup.



Students, Savannah River Site (SRS) Experts Engage in 'STEMulating' Conversations

Students are becoming pen pals with SRS employees whose degrees and careers involve STEM in a new program called "STEMulating Conversations with SRS Experts." To date, 74 teachers and academic officials from local schools have enrolled in the pilot program in which K-12 grade students send letters via email to the SRS experts to learn about a range of STEM careers. Managed by EM contractor Savannah River Nuclear Solutions, STEMulating Conversations offers students the opportunity to develop career aspirations and interests in STEM by communicating with scientists, engineers, IT, and other STEM professionals from SRS. Through this program, they can ask SRS experts questions about STEM and their careers.

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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