

RWFI E-NOTE MONTHLY

REGIONAL WORKFORCE INITIATIVE • OCTOBER 2021

Welcome Message

Greetings NETL RWFI stakeholders,

This month's funding in focus is a funding opportunity from NETL with a focus on *cybersecurity*, establishing a network of university-based regional electric power cybersecurity centers. In the reports and resources section of this month's E-Note you will find the newly released Appalachian Regional Commission's 2022-2026 Strategic Plan report, *Appalachia Envisioned: A New Era of Opportunity*. And finally, the RWFI will host a webinar briefing of the annual, Department of Energy's *U.S. Energy and Employment Report* on Tuesday, Nov. 2, with a focus on energy jobs data from the region. More information can be found in the meetings section of this month's E-Note, and you can register by [clicking here](#). Please feel free to share the registration information.

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 Regional Workforce Initiative Team

Workforce Funding Announcements

FUNDING SPOTLIGHT



University Based Cybersecurity Centers

National Energy Technology Laboratory, Deadline, Dec. 8, 2021

This funding opportunity announcement (FOA) seeks to establish a network of university-based, regional electric power cybersecurity centers. These centers should address interrelated research and development challenges of cybersecurity and critical energy infrastructure, while considering the distinctive characteristics of each region's electricity system, network of infrastructure, and workforce expertise. NETL envisions that this initiative will result in multiple new tools and training for the energy sector.

Science & Technology for Advanced Manufacturing Projects

Department of Defense, Office of Naval Research, Deadline, Oct. 30, 2021

The U.S. Department of Defense Manufacturing Technology Program is the Defense Department's investment mechanism for staying at the forefront of defense-essential manufacturing capability. The program develops technologies and processes for the affordable and timely production and sustainment of defense systems. The program impacts all phases of acquisition. It aids in achieving reduced acquisition and total ownership costs by developing, maturing, and transitioning key manufacturing technologies. The Office of Naval Research will focus investments on those that have the most benefit to the warfighter and include quick-hitting, rapid response projects to address immediate manufacturing needs.

FY21 ARPA Statewide Planning, Research, and Networks

Department of Commerce, Deadline, Oct. 31, 2021

The ARPA Statewide Planning, Research, and Networks Notice of Funding Opportunity is part of EDA's multi-phase effort to respond to the coronavirus pandemic as directed by the American Rescue Plan Act of 2021. Specifically, this NOFO seeks to build regional economies for the future through two primary avenues: a) Statewide Planning, and b) Research and Networks. Subject to the availability of funds, awards made under this NOFO will help develop coordinated state-wide plans for economic development and data, tools, and institutional capacity to evaluate and scale evidence-based economic development efforts.

Workforce System Technical Assistance Collaborative

Department of Labor, Deadline, Nov. 8, 2021

This Announcement solicits applications to establish and operate a Workforce System Technical Assistance (TA) Collaborative over a threeyear (36-month) period of performance from an anticipated start date of February 2022. The Workforce System TA Collaborative is an entity or consortium of partners that, in close coordination with the U.S. Department of Labor (DOL), will plan, develop and deliver TA to the public workforce system, considered here as primarily Workforce Innovation and Opportunity Act (WIOA) Title I and Wagner-Peyser Act Employment Service grantees and required partners of the one stop delivery system, where TA to a broader range of partners improves WIOA Title I and Wagner-Peyser Act service delivery. "

Professional Formation of Engineers (PFE): Research Initiation in Engineering Formation (RIEF)

National Science Foundation, Deadline, Nov. 9, 2021

The PFE: RIEF program has two goals: 1) Support research in the PFE, and 2) Increase the community of researchers conducting PFE research. Pls are expected to have little or no experience conducting

social science or education research. PFE: RIEF is not intended for established researchers in engineering education or other social science fields to initiate new projects.

Capacity Building Grants for Non-Land Grant Colleges of Agriculture (NLGCA) Program

Department of Agriculture, Deadline Nov. 22, 2021

NLGCA Institutions may use the funds: (a) to successfully compete for funds from Federal grants and other sources to carry out educational, research, and outreach activities that address priority concerns of national, regional, State, and local interest; (b) to disseminate information relating to priority concerns to interested members of the agriculture, renewable resources, and other relevant communities, the public, and any other interested entity; (c) to encourage members of the agriculture, renewable resources, and other relevant communities to participate in priority education, research, and outreach activities by providing matching funding to leverage grant funds; and (d) through: (1) the purchase or other acquisition of equipment and other infrastructure (not including alteration, repair, renovation, or construction of buildings); (2) the professional growth and development of the faculty of the NLGCA Institution; and (3) the development of graduate assistantships.

FY22 Guidelines for Brownfield Assessment Grants

Environmental Protection Agency, Deadline, Dec. 1, 2021

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), as amended by the Brownfields Utilization, Investment, and Local Development (BUILD) Act (P.L. 115-141), requires the U.S. Environmental Protection Agency (EPA) to publish guidance for grants to assess and clean up brownfield sites. EPA's Brownfields Program provides funds to empower states, communities, tribes, and nonprofit organizations to prevent, inventory, assess, clean up, and reuse brownfield sites. This guidance provides information on applying for Assessment Grants.

FY22 Guidelines for Brownfield Revolving Loan Fund Grants

Environmental Protection Agency, Deadline, Dec. 1, 2021.

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), as amended by the Brownfields Utilization, Investment, and Local Development (BUILD) Act (P.L. 115-141), requires the U.S. Environmental Protection Agency (EPA) to publish guidance for grants to assess and clean up brownfield sites. EPA's Brownfields Program provides funds to empower states, communities, tribes, and nonprofit organizations to prevent, inventory, assess, clean up, and reuse brownfield sites. This guidance provides information on applying for Revolving Loan Fund (RLF) Grants. Only eligible entities who do not have, or are not a part of (i.e., a coalition member), an open cooperative agreement for a Brownfields RLF at the time of application may apply for funding under this solicitation

FY22 Guidelines for Brownfield Cleanup Grants

Environmental Protection Agency, Deadline, Dec. 1, 2021

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), as amended by the Brownfields Utilization, Investment, and Local Development (BUILD) Act (P.L. 115-141), requires the U.S. Environmental Protection Agency (EPA) to publish

guidance for grants to assess and clean up brownfield sites. EPA's Brownfields Program provides funds to empower states, communities, tribes, and nonprofit organizations to prevent, inventory, assess, clean up, and reuse brownfield sites. This guidance provides information on applying for Cleanup Grants. Entities applying for a Fiscal Year 2022 (FY22) Cleanup Grant may not apply for an FY22 Revolving Loan Fund (RLF) Grant (EPA-OLEM-OBLR-21-05).

Centers of Research Excellence in Science and Technology (CREST) and HBCU Research Infrastructure for Science and Engineering (HBCU-RISE)

National Science Foundation, Deadline, Dec. 1, 2021

The Centers of Research Excellence in Science and Technology (CREST) program provides support to enhance the research capabilities of minority-serving institutions (MSI) through the establishment of centers that effectively integrate education and research. MSIs of higher education denote institutions that have undergraduate enrollments of 50% or more (based on total student enrollment) of members of minority groups underrepresented among those holding advanced degrees in science and engineering fields: African Americans, Alaska Natives, American Indians, Hispanic Americans, Native Hawaiians, and Native Pacific Islanders. CREST promotes the development of new knowledge, enhancements of the research productivity of individual faculty, and an expanded presence of students historically underrepresented in science, technology, engineering, and mathematics (STEM) disciplines. CREST Postdoctoral Research Fellowship (PRF) awards provide research experience and training for early career scientists at active CREST Centers. HBCU-RISE awards specifically target HBCUs to support the expansion of institutional research capacity as well as the production of doctoral students, especially those from groups underrepresented in STEM, at those institutions.

Industry-University Cooperative Research Centers Program

National Science Foundation, Deadline, Dec. 8, 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.

NETL News



NETL to Join Collaboration on Clean Hydrogen Production

NETL will leverage its wide range of hydrogen research and development (R&D) capabilities to support a collaborative clean

hydrogen production and utilization project recently awarded \$20 million in federal funding by the U.S. Department of Energy (DOE). NETL will join a consortium led by PNW Hydrogen LLC to produce clean hydrogen from nuclear power at the Palo Verde Nuclear Generating Station in Phoenix, Arizona. Six tonnes of stored hydrogen will be used to produce approximately 200 megawatt-hours of electricity during times of high demand, and may be also used to make chemicals and other fuels. The project will provide insights about integrating nuclear energy with hydrogen production technologies and inform future clean hydrogen production deployments at scale. "We look forward to supporting this clean hydrogen project and the decarbonization pathways that it could open," said NETL Director Brian Anderson, Ph.D. "Our Lab has the unique facilities, and our researchers have broad expertise to help this team achieve success."



NETL's Nor Farida Harun Recognized at 2021 Women of Color in STEM Conference

NETL research scientist Nor Farida Harun, Ph.D., received a Special Recognition Award for her work toward developing a smart electrical grid during the Women of Color (WOC) in STEM Conference — Digital Twin Experience (DTX), held in a virtual setting Oct. 7-9. The theme for WOC DTX 2021, "Reset to Rise: It's a New Day!", reflected the global push to overcome the challenges of 2021 and move forward. For more than two decades, awards presented at this leading conference served the dual purpose of showcasing outstanding achievements in science, technology, engineering and mathematics (STEM) and highlighting the significant barriers for women in the workforce. Recognition is more critical than ever as representation of women among the STEM occupational clusters has not changed markedly since 2016.



NETL Leadership Reviews University Coalition Successes

NETL leadership and experts, including NETL Director Brian Anderson, Ph.D., joined representatives from 11 universities as they gathered virtually to discuss project successes during the 2021 University Coalition for Fossil Energy Research (UCFER) Annual Technical Review Meeting this week. NETL Deputy Director and Chief Technology Officer Sean Plasynski, Ph.D., kicked off the second day of the meeting with opening remarks, proceeded by an administrative update from UCFER

DOE Project Officer Omer Bakshi. "UCFER has provided significant results since its inception six years ago," Bakshi said. "To date, 18 of the 43 funded projects have been completed, and 25 are ongoing. The presentations we saw this week confirmed that the research of our partner universities will continue to lead to important breakthroughs for the decarbonization of the economy."



DOE Invests \$45 Million to Decarbonize the Natural Gas Power and Industrial Sectors Using Carbon Capture and Storage

Point-Source Carbon Capture Can Filter At Least 95% of Emissions from Natural Gas and Industrial Operations, Help Meet Biden Administration Climate Goals

The U.S. Department of Energy (DOE) today announced \$45 million in funding for 12 projects to advance point-source carbon capture and storage technologies that can capture at least 95% of carbon dioxide (CO₂) emissions generated from natural gas power and industrial facilities that produce commodities such as cement and steel. These research and development, front-end engineering design and engineering-scale projects are a part of DOE's efforts to deploy a portfolio of innovative solutions to help achieve the Biden-Harris Administration's goals of net-zero carbon emissions by 2050 and a 100% clean electricity sector by 2035.



DOE Invests Nearly \$7 Million to Put Coal Wastes to Work, Creating Products for a Clean Energy Economy

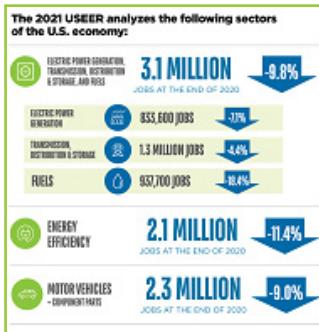
Today, the U.S. Department of Energy's (DOE) Office of Fossil Energy and Carbon Management (FECM) announced nearly \$7 million in funding for seven projects that will develop coal-based filaments or resins for additive manufacturing and advance research and development (R&D) of coal-derived graphite. This investment supports the development of new and safe uses for coal-wastes, which in turn will spur the creation of good-paying jobs in frontline communities as the nation transitions to 100 percent clean electricity by 2035. In order to extract the full economic value from coal wastes in a sustainable way, innovation is needed. The National Energy Technology Laboratory's (NETL) Carbon Ore Processing Program seeks to address and deliver solutions to this challenge by supporting novel technologies that produce valuable products from coal waste-derived sources through laboratory- and pilot-scale R&D.



NETL, DOE Laboratories Developing New Air Separation Technologies for Hydrogen Production

NETL researchers, and project partners at Los Alamos National Laboratory, Pacific Northwest National Laboratory and Idaho National Laboratory, are developing advanced air separation technologies that produce oxygen, a valuable gas that can be used to make hydrogen fuel, a much-needed commodity for transitioning to a clean power sector. Air separation technologies separate atmospheric air into its primary components, nitrogen and oxygen, which can be used for valuable commercial supplies, industrial applications, manufacturing and more. The projects NETL and its collaborators are advancing are actively addressing climate change by reducing CO₂ emissions via clean hydrogen generation in oxygen-blown, gasification-based plants with carbon capture and storage. Clean hydrogen can be generated from biomass and coal wastes in this manner with zero carbon emissions. The hydrogen can be used as a clean fuel in turbine applications."

Upcoming Workforce Conferences and Meetings



NETL RWFI U.S. Energy and Employment Report Webinar Briefing

Webinar, Tuesday, Nov. 2, 2021

The National Energy Technology Laboratory's Regional Workforce Initiative (NETL RWFI) invites you to attend the 2021 U.S. Energy Jobs and Employment Report (USEER) Briefing webinar, where you will learn about the current state of the energy and advanced manufacturing workforce for the tri-state (Pennsylvania, Ohio, and West Virginia) area and the broader Appalachian region. There will also be discussions on emerging national trends and national energy jobs data. The webinar will also touch on how the COVID-19 pandemic has affected employment in the short and long term in energy and manufacturing. "The U.S. Energy and Employment Report (USEER) was first published in 2016 by the U.S. Department of Energy, and the 2021 report represents the sixth installment of the series. The purpose of the USEER series is to provide a comprehensive overview of the energy labor market, informing policymakers and stakeholders on the importance of the energy sector as a job creation engine in the U.S. economy. The USEER offers unique insights into the individuals who meet the nation's energy needs, identifies important trends and

skillsets for the 21st century energy workforce, and provides longitudinal data on employment trends in five major energy sectors — Electric Power Generation; Transmission, Distribution, and Storage; Fuels; Energy Efficiency; and Motor Vehicles. In addition to employment data, the reports provide details on energy sector demographics, industry composition, employer projections, occupational distribution, and some key wage statistics." – USEER 2021 *Registration is free but limited.*

Reports and Resources



Appalachia Envisioned: A New Era of Opportunity

Appalachian Regional Commission (ARC)

Throughout 2021, ARC hosted community conversations, focus groups, and a public survey to gather input and affirm an investment framework to meet Appalachia's economic needs. Approximately 2,000 participants shared insights on the strengths, challenges, and opportunities facing communities, along with ideas to advance economic prosperity. This feedback has been transformed into ARC's new strategic plan, *Appalachia Envisioned: A New Era of Opportunity*, and will guide ARC's work to innovate, partner, and invest in the Appalachian Region.

U.S. Energy and Employment Report (USEER) 2021

Department of Energy

The USEER began in 2016 at the 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. Since 2016, when DOE first began tracking energy employment in the United States, the sector grew more than six percent by the end of 2019, responsible for 8.4 million jobs. Prior to the coronavirus pandemic, the energy sector had been one of the country's fastest growing job markets. From 2015 to 2019, the annual growth rate for energy employment in the United States was 3% — double compared to 1.5% in the general economy.

DOE STEM Rising

PPPL hosts its first Minority Educational Institution Student Partnership Program intern

The Princeton Plasma Physics Laboratory welcomed its first intern who is part of the U.S. Department of Energy's (DOE) Minority Educational Institution Student Partnership Program (MEISPP) this past summer. Morgan Jones, a senior at Towson University in Maryland majoring in information technology and minoring in business administration, started remotely interning at the Lab this past June.

Argonne Invites Local Hispanic and Latino Students to Imagine Future Careers in Science

How does a young student learn the language of scientific discovery, the joy of viewing the universe in a different light, and the pathways to widely varying careers in science, technology, engineering and math (STEM)? Sometimes it's through school, but more often that message is reinforced at home, in the local community, and in the network of people and role models surrounding that young person. For many Hispanic and Latino students, seeing STEM career role models and gaining exposure to real-world science applications and career opportunities is both important and sometimes challenging.

Women Engineers at Hanford Guide Colleagues Toward Career Success

A group of women engineers with *EM Office of River Protection* (ORP) tank operations contractor Washington River Protection Solutions (WRPS) has established a series of monthly lunchtime presentations aimed at empowering and mentoring woman engineers. The speaker series is open to men and women in other career fields, as well.

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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