

RWFI E-NOTE MONTHLY

REGIONAL WORKFORCE INITIATIVE • FEBRUARY 2021

Welcome Message

Greetings NETL RWFI stakeholders,

In this month's funding in focus is an announcement from the U.S. Economic Development Agency for their National Technical Assistance program, *Economic Development Agency (EDA) Research and National Technical Assistance (NTA) FY18–FY20*, which is meant to help "leverage existing regional assets and support the implementation of economic development strategies that advance new ideas and creative approaches to advance economic prosperity in distressed communities." The deadline is April 30, 2021.

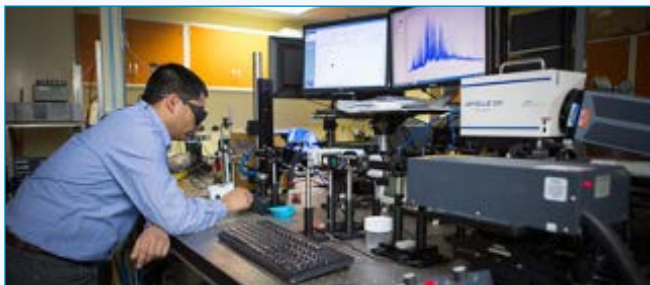
The NETL RWFI will also be hosting a webinar on Tuesday, March 9, 2021, from 10:00–11:30 a.m. "*Predicting Future Regional and National Energy Workforce Needs*" will be a joint presentation with the Tri-State Energy and Advanced Manufacturing Consortium and with collaboration by the Energy Futures Initiative. Trends in energy and manufacturing workforce jobs data will be discussed. *Registration is free but limited and filling fast! Click here to register today.*

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



Economic Development Agency (EDA) Research and National Technical Assistance (NTA) Fiscal Year (FY) 18–FY20

Economic Development Agency, Deadline, April 30, 2021

EDA provides strategic investments on a competitive merit basis to support economic development, foster job creation, and attract private investment in economically distressed areas of the U.S. Under this Notice of Funding Opportunity, EDA solicits applications from applicants in order to provide investments that support research and technical assistance projects under EDA's Research & Evaluation and NTA programs. Grants and cooperative agreements made under these programs are designed to leverage existing regional assets and support the implementation of economic development strategies that advance new ideas and creative approaches to advance economic prosperity in distressed communities. EDA reserves the right to determine if an award will be structured as a grant or a cooperative agreement.

FY21 Conservation Innovation Grants (CIG) Pennsylvania State Program National Funding Opportunity

U.S. Department of Agriculture, Deadline, March 15, 2021

Applications are accepted from eligible entities for projects carried out in the state of Pennsylvania. A total of up to \$225,000 is available for the Pennsylvania CIG competition in FY21. All non-federal entities (NFEs) and individuals are invited to apply, with the sole exception of federal agencies. Projects may be between one and three years in duration. The maximum award amount for a single award in FY21 is \$75,000.

FY21 CIGs Maryland State Program National Funding Opportunity

U.S. Department of Agriculture, Deadline, March 15, 2021

Applications are accepted from eligible entities for projects carried out in the state of Maryland. A total of up to \$150,000 is available for the Maryland CIG competition in FY21. All NFEs and individuals are invited to apply, with the sole exception of federal agencies. Projects may be between one and three years in duration. The maximum award amount for a single award in FY21 is \$75,000.

Hollings Manufacturing Extension Partnership (MEP) State Partnership Support Program

U.S. Department of Commerce, Deadline, March 17, 2021

The National Institute of Standards and Technology (NIST) Hollings MEP is seeking applications from eligible applicants to provide in-depth collaborative support in developing and advancing collaborative relationships between the NIST/MEP, MEP Centers, States and other stakeholders. This effort will help the MEP National Network to align programs and support systems to improve the competitiveness of the nation's manufacturers and to support the continuous improvement, growth, sustainability, supply chains, and innovation and technology acceleration in manufacturing.

Higher Education Challenge (HEC) Grants Program

U.S. Department of Agriculture, Deadline, March 18, 2021

Projects supported by the HEC Grants Program will address a state, regional, national, or international educational need; involve a creative or non-traditional approach toward addressing that need that can serve as a model to others; encourage and facilitate better working relationships in the university science and education community, as well as between universities and the private sector, to enhance program quality and supplement available resources; and result in benefits that will likely transcend the project duration and U.S. Department of Agriculture support.

FY20 Federal Aviation Administration (FAA) Aviation Workforce Development Grant Program — Aviation Maintenance

U.S. Department of Transportation, Deadline, March 22, 2021

Through the award of these grants, the U.S. Department of Transportation and the FAA will support the education and recruitment of aviation maintenance technical workers and the development of the aviation maintenance workforce. The program aims to provide meaningful educational experiences to stimulate interest and encourage students throughout the nation to prepare to enter this career field. The program also supports activities to facilitate the transition to careers in aviation maintenance, including members of the armed forces. Congress authorized the program through the end of FY23. A federal register notice was published to open a period of public comment that closed on Sept. 23, 2020.

Innovative Water Infrastructure Workforce Development Grant Program

Environmental Protection Agency, Deadline, March 26, 2021

The U.S. Environmental Protection Agency is soliciting applications from eligible applicants to assist in the development and use of innovative activities relating to water workforce development and career opportunities in the drinking water and wastewater utility sector and expand public awareness about drinking water and wastewater utilities and to connect individuals to careers in the drinking water and wastewater utility sector.

National Science Foundation Scholarships in STEM Program

National Science Foundation, Deadline, April 7, 2021

The main goal of the S-STEM program is to enable low-income, talented domestic students to pursue successful careers in promising STEM fields. Ultimately, the S-STEM program wants to increase the number of low-income students who graduate and contribute to the American innovation economy with their STEM knowledge. Recognizing that financial aid alone cannot increase retention and graduation in STEM, the program provides awards to institutions of higher education to fund scholarships and to adapt, implement, and study effective evidence-based curricular and co-curricular activities that support recruitment, retention, transfer (if appropriate), student success, academic/career pathways, and graduation in STEM.

Funding Opportunity Announcement for the Department of Defense (DoD) National Defense Education Program (NDEP) for STEM, and Biotechnology Education, Outreach, and Workforce Initiative Programs and Enhanced Civics Education

U.S. Department of Defense, Deadline, April 19, 2021

The DoD NDEP seeks innovative applications on mechanisms to implement STEM education, outreach, and/or workforce initiative programs, here onto referred as STEM activities. NDEP also seeks innovative applications on mechanisms to specifically implement Biotechnology outreach and workforce development. Additional NDEP efforts also includes a pilot program in enhanced civics education.

Future Manufacturing

National Science Foundation, Deadline, May 14, 2021

Future Manufacturing requires creative convergence approaches in science, technology and innovation, empirical validation, and education and workforce development to address pressing challenges for manufacturing. At the same time, Future Manufacturing can leverage highly integrated physical, digital and social frameworks that underpin society to enable manufacturing that addresses urgent social challenges such as global health disparities, economic and social divides, infrastructure deficits of marginalized populations and communities, and environmental sustainability. Cross-disciplinary partnerships among scientists, engineers, social and behavioral economists, and experts in arts and humanities may be required to provide solutions that are equitable and inclusive.

Louis Stokes Alliances for Minority Participation

National Science Foundation, Deadline, June 1, 2021

The LSAMP program is an alliance-based program. The program's theory is based on the Tinto model for student retention referenced in the 2005 LSAMP program evaluation. The overall goal of the program is to assist universities and college in diversifying the nation's STEM workforce by increasing the number of STEM baccalaureate and graduate degrees awarded to populations historically underrepresented in these disciplines: African Americans, Hispanic Americans, American Indians, Alaska Natives, Native Hawaiians, and Native Pacific Islanders. LSAMP's efforts to increase diversity in STEM are aligned with the goals of the federal government's five-year strategic plan for STEM education, *Charting a Course for Success: America's Strategy for STEM Education*.

NETL News



NETL's STEM Education & Outreach Team Facilitates Virtual STEM Learning

NETL's STEM Education & Outreach Team supports all types of STEM learning — even if that learning takes place through a screen. Throughout the coronavirus pandemic of 2020 and into 2021, team members have stayed busy by preparing virtual activities and participating in online events that continue to bring STEM education, information on science career paths and more to students and science professionals during a time of great uncertainty. In the last year, NETL developed the first in a series of virtual Meet A Scientist events to increase the accessibility of the lab's research and directly engage

with K-12 students in Pennsylvania, West Virginia, and rural Oregon. Interested participants submitted questions through NETL's social media accounts, with researchers addressing selected questions through a live virtual event. Researchers were able to speak about their career pathways and exciting research roles during the event. Future Meet a Scientist events are slated to occur, so check NETL's social media to learn about future dates and topics.



Female Researchers Advance NETL's Leadership in Microwave Chemistry

NETL's Reaction Engineering Team is exploring the next breakthroughs in microwave engineering, which has the potential to create valuable chemicals from the nation's abundant energy resources. Team members Christina Wildfire, Yan Zhou, Pranjali Muley, and Candace Ellison are demonstrating the value of this promising technology through their research and serving as examples for future female scientists interested in making positive contributions to America's energy landscape. Microwave engineering offers a novel approach to developing cleaner and more efficient energy technologies. The team is studying the use of microwaves in converting fuels like coal, oil, and natural gas into marketable fuels, chemicals, and products. Microwaves offer a unique opportunity to researchers because they can provide rapid, selective heating on a molecular scale. While conventional heating works from the outside in, microwaves are able to target specific areas for heating, which can save energy and minimize startup and shutdown times compared to conventional energy processes. The team is using this method to explore a wide variety of solutions to America's current energy challenges.



NETL Hosts R-AME Innovation Group to Foster Workforce Development and Manufacturing

NETL's Regional Workforce Initiative (RWFI) continued to forge effective partnerships to increase economic impact, workforce development and technology leadership in the 3D printing and defense/energy industries as it hosted a webinar Feb. 16 with the Regional Advanced Manufacturing and Energy Innovation Group (R-AME). Strengthening, supporting, and promoting a regional ecosystem that encompasses advanced manufacturing, energy innovation and entrepreneurship is important in creating high-tech and high-earning jobs, as well as producing lasting economic growth for the region. NETL and the DOE's national laboratory network strive to serve as a bridge spanning the early stage of science and discovery to the final stage of commercial deployment by the private sector. The R-AME meeting, which focused on regional efforts, collaborations and partnerships to catalyze research innovation and commercialization of advanced manufacturing and energy technology, marked the third meeting with this group.



National Lab Collaborates on Robust Data Curation to Drive Innovations for the Energy Department

Researchers from NETL are working with data science leadership and experts from DOE's Office of the Chief Information Officer to develop powerful new cloud computing capabilities that are harnessing the power of big data to advance energy research and data computing across the Department.



The University of Kentucky Conducts Pilot-Scale Testing for REE Extraction and Recovery in NETL-Supported Initiative

A NETL-supported project at the University of Kentucky (UK) successfully conducted pilot-scale testing in their facility that was designed to extract mixed REEs from coal and coal by-products using advanced extraction technologies, achieving production of mixed rare earth oxide concentrates of up to 98% purity and exceeding original project goals. During Phase I of their first DOE-funded rare earth recovery project, which began in March 2016, UK and project partners Virginia Tech, West Virginia University, Minerals Refining Company, Blackhawk Mining, and Alliance Coal performed a feasibility study and developed a preliminary design for a pilot-scale plant to process up to one-quarter ton per hour of coarse coal refuse and recover rare earths from feedstock materials from the Central Appalachian Basin and Illinois Basin.



Four Fun Activities for Budding Engineers

As NETL turns its attention to inspiring the next generation of energy researchers this month, the Lab is presenting four fun and engaging engineering activities that parents can enjoy with their children. These classic educational experiences will help build critical thinking skills that can spur an early interest in science, technology, engineering and math. Blanket Fort Build a childhood memory! This is fun activity for both parents and children that also helps with learning about engineering through play. Is this a fort that can fit the whole family? Is this a jungle hideout or a mad scientist's lair?



Princeton Senior High School and Suncrest Middle School Win West Virginia Regional Science Bowl Competition

The West Virginia Science Bowl tested students' knowledge of math and science topics. Middle school teams competed Friday, followed by high school students on Saturday. With the shift to a virtual setting, this year's Science Bowl followed a slightly altered format; 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 National Science Bowl. Coming in at second, third and fourth place were Morgantown High School teams 1 and 2 of Monongalia County and Williamstown High School of Wood County, respectively. In the middle school division, second, third, and fourth place were awarded to Triadelphia Middle School Team 1 of Ohio County, Williamstown Middle School of Wood County, and Triadelphia Middle School Team 2 of Wood County, respectively.



Top NETL Researcher Paves the Way for Women in Science

As one of NETL's most prolific researchers, Ranjani Siriwardane is listed as co-inventor of 25 U.S. patents and has earned numerous scientific awards for discoveries that have had a profound impact on the production of clean and affordable electricity. None of those accomplishments, however, would have been possible without the support of family members, teachers, and others who recognized Siriwardane's early interest in STEM, and encouraged her to pursue her dreams and overcome obstacles she faced growing up in Sri Lanka, an island nation in South Asia.

Society to Honor Richard Dennis, NETL Turbine Expert, with Two Awards

NETL's Richard Dennis, a leader in the field of advanced turbine development, will receive two prestigious awards at this year's American Society of Mechanical Engineers (ASME) Turbomachinery Technical Conference & Exposition, also known as Turbo Expo 2021. The ASME International Gas Turbine Institute will present him with its 2021 Industrial Gas Turbine Technology Award. He also will receive the ASME Dedicated Service Award during the virtual conference and exhibition, which is set for June 7-11, 2021. "These are well-deserved honors for Rich, whose expertise has enabled NETL to advance the development of next-generation turbine technology to produce clean, affordable and reliable supplies of electricity using the nation's abundant fossil energy resources in an environmentally friendly manner," said NETL Director Brian J. Anderson, Ph.D.

NETL Director Anderson Named Laboratory Director of the Year

The Federal Laboratory Consortium for Technology Transfer (FLC) selected NETL Director Brian Anderson, Ph.D., for its prestigious Laboratory Director of the Year award in recognition of his outstanding contributions to support technology transfer activities in the NETL organization and the communities it serves. FLC is the formally chartered, nationwide network of over 300 federal laboratories, agencies and research centers that fosters commercialization best practice strategies and opportunities for accelerating federal technologies from out of the labs and into the marketplace. Since Anderson was named NETL director in 2018, his leadership has significantly advanced the laboratory's partnerships and technology transfer. He has eagerly and effectively communicated to industry stakeholders with clear and compelling messages of NETL's vision for technology development and transfer and NETL's technical research capabilities. In addition, Director Anderson's leadership and advocacy led to increased production of NETL intellectual property and related request for licenses and other development agreements.

Events and Meetings



NETL RWFI/Tri-State Energy and Advanced Manufacturing Consortium (TEAM) and the Energy Futures Initiative (EFI), Predicting future regional and National Energy Workforce Needs

Online Webinar, March 9, 2021, 10:00a.m.–11:30 a.m., EST

The NETL RWFI will host the TEAM consortium and the EFI in a joint webinar on March 9, 2021, from 10:00–11:30 a.m., which will focus on challenges and opportunities in the regional energy and advanced manufacturing ecosystem in the short- and long-term future. Speakers from both TEAM and the EFI will present information on jobs data trends and analysis and regional workforce issues

Reports and Resources



LinkedIn January 2021 Workforce Report

The LinkedIn Workforce Report is a monthly report on employment trends in the U.S. workforce. It's 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

- Hiring growth slowed in December, inching up 0.5% from November — but it did not stop. The U.S. is now the closest it has been to full hiring recovery since COVID first hit in February (-2.3% y/y).
- It's still possible for month-over-month changes to dip into the negatives over the next few months, but overall, there is positive momentum enduring even in current extremely challenging conditions. This may continue to improve over the next 4-5 months with fiscal stimulus, the vaccine, and warmer weather.
- Nine industries showed year-over-year growth in December, the largest number since February 2020. Notable movers include:

Agriculture (+13.1% y/y), Wellness and Fitness (+3.8% y/y) and Retail (+1.9% y/y). As long as overall hiring keeps improving, it is anticipated that the share of “in the black” industries will grow.

- Workers continue to flock to cities where recovery is the strongest, but the overall the gaps in hiring recovery between places like San Francisco (-6.9% y/y) and New York City (-6.9% y/y), and Austin (-4.2% y/y) and Denver (-3.5% y/y) are getting smaller.

DOE STEM Rising



DOE Announces Teams to Compete in the 2022 Collegiate Wind Competition

Considered the country's most prominent undergraduate-level wind energy competition, the Collegiate Wind Competition challenges teams of college students to develop a wind energy project and design, build, and test a model wind turbine. “The Collegiate Wind Competition is intended to inspire students and help develop the trained, qualified workers needed for continued growth in the U.S. wind industry,” said Kelly Speakes-Backman, Acting Assistant Secretary for Energy Efficiency and Renewable Energy at the U.S. Department of Energy. “We’re excited to see what innovations these future wind workers bring to the 2022 competition.”

What Hollywood Gets Wrong (and Right!) About Protecting the Earth from Asteroids

“I would say the number one question I get when I tell people what I work on, is ‘Oh, like [the film] Armageddon?’ And it’s nothing like Armageddon,” says Lawrence Livermore National Laboratory physicist Kirsten Howley, whose day job includes defending our planet from asteroids. Howley doesn’t have an orange jumpsuit at hand, but her job is serious business. She and her team of planetary defenders specialize in how we might deflect an asteroid that poses a threat to Earth.

Accelerating Women’s Leadership in the Clean Energy Sector

C3E International, an international partnership to advance women's engagement in the clean energy sector, was launched at the first Clean Energy Ministerial in 2010. The *U.S. C3E Initiative* was born shortly thereafter, an effort that expanded to an annual symposium, network of clean energy ambassadors, and annual awards (*nominations are open now*), all run in partnership with the Massachusetts Institute of Technology Energy Initiative, Stanford Precourt Institute for Energy and Texas A&M Energy Institute. A new webinar series was added last month — you can [join the mailing list](#) to receive invitations to future events in the series.

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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