

# RWFI E-NOTE MONTHLY

REGIONAL WORKFORCE INITIATIVE • JANUARY 2020

## Welcome Message

Greetings NETL RWFI stakeholders,

This month's funding spotlight highlights the Appalachian Regional Commission POWER Grant Program (with a deadline of February 28, 2020, for a letter of intent to file and application). You will also find in this month's E-note a link to a report on the ever changing landscape of the manufacturing workforce from the Georgetown University Center on Education and the Workforce.

As always, feel free to reach out to us at [NETL.RWFI@netl.doe.gov](mailto: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

#### *Appalachian Regional Commission (ARC) Partnerships for Opportunity and Workforce and Economic Revitalization (POWER) 2020 Request for Proposals (RFP)*

Appalachian Regional Commission

ARC is accepting applications in response to the *POWER 2020 RFP*. Strong POWER projects are regional, strategic, and transformational in their approach to the economic revitalization of coal-impacted communities. POWER is a congressionally funded initiative that makes federal resources available to help communities and regions that have been affected by job losses in coal mining, coal power plant operations, and coal-related supply chain industries due to the changing economics of America's energy production.

- **February 28, 2020**, 5:00 p.m. ET: POWER 2020 Letter of Intent Submission deadline (Submit to [power@arc.gov](mailto:power@arc.gov))
- **March 27, 2020**, 5:00 p.m. ET: POWER 2020 Final Applications deadline (Submit to [POWER Portal](https://www.powerportal.gov))



#### *Centers of Research Excellence in Science and Technology (CREST) and Historically Black Colleges and Universities (HBCU) Research Infrastructure for Science and Engineering (HBCU-RISE)*

National Science Foundation, **Deadline, February 13, 2020**

The 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 STEM disciplines. CREST Postdoctoral Research Fellowship 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.

#### *Improving Undergraduate STEM Education (IUSE): Pathways into the Earth, Ocean, Polar, and Atmospheric & Geospace Sciences*

National Science Foundation, **Deadline, February 14, 2020**

The National Science Foundation's (NSF) IUSE Initiative is a Foundation-wide effort to accelerate improvements in the quality and effectiveness of undergraduate education in all STEM fields including the learning, social, behavioral, and economic sciences. Undergraduate STEM education is critical for preparing both a diverse STEM workforce and a STEM-literate public that is ready to support and benefit from the progress of science. The IUSE initiative provides a Foundation-wide framework of investments to support the agency's commitment to the highest caliber undergraduate STEM education. By improving the quality and effectiveness of undergraduate education in all STEM fields, IUSE investments enable NSF to lead national progress toward a diverse and innovative workforce and a STEM-literate public.

### *Women and Minorities in STEM Fields (WAMS)*

U.S. Department of Agriculture, National Institute of Food and Agriculture, **Deadline, February 24, 2020**

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 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.

### *Education and Human Resources Core Research (ECR): Building Capacity in STEM Education Research*

National Science Foundation, **Deadline, February 28, 2020**

ECR's Building Capacity for STEM Education Research solicitation supports projects that build individuals' capacity to carry out high quality STEM education research that will enhance the Nation's STEM education enterprise and broaden the pool of researchers that can conduct fundamental research in STEM learning and learning environments, broadening participation in STEM fields and STEM workforce development.

### *Future of Work at the Human-Technology Frontier: Core Research*

National Science Foundation, **Deadline, March 9, 2020**

The specific objectives of the Future of Work at the Human-Technology Frontier program are to (1) facilitate convergent research that employs the joint perspectives, methods, and knowledge of computer science, design, engineering, learning sciences, research on education and workforce training, and social, behavioral, and economic sciences; (2) encourage the development of a research community dedicated to designing intelligent technologies and work organization and modes inspired by their positive impact on individual workers, the work at hand, the way people learn and adapt to technological change, creative and supportive workplaces (including remote locations, homes, classrooms, or virtual spaces), and benefits for social, economic, educational, and environmental systems at different scales; (3) promote deeper basic understanding of the interdependent human-technology partnership to advance societal needs by advancing design of intelligent work technologies that operate in harmony with human workers, including consideration of how adults learn the new skills needed to interact with these technologies in the workplace and by enabling broad workforce participation, including improving accessibility for those challenged by physical or cognitive impairment; and (4) understand, anticipate, and explore ways of mitigating potential risks arising from future work at the human-technology frontier.

### *NSF Scholarships in STEM (S-STEM) Program*

National Science Foundation, **Deadline, March 25, 2020**

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 advance the adaptation, implementation, and study of effective evidence-based curricular and co-curricular activities that support recruitment, retention, transfer (if appropriate), student success, academic/career pathways, and graduation in STEM. The S-STEM program encourages collaborations among different types of participating groups including but not limited to partnerships among different types of institutions; collaborations of STEM faculty and institutional, educational, and social science researchers; and partnerships among institutions of higher education and business, industry, local community organizations, national labs, or other federal or state government organizations, if appropriate.

### NETL News



### *Ohio State University (OSU) Researchers Demonstrate REE Recovery Process*

Innovations by researchers at OSU have shown potential to deliver a supply of strategically and economically vital rare earth elements (REEs). REEs are used in everything from green energy applications and personal electronics to defense technology and smart car systems. Important as these elements are, China controls the lion's share of the world market. DOE has been tasked with helping secure a domestic supply. NETL's research has demonstrated methods by which REEs can be extracted from the Nation's coal by-products such as acid mine drainage and fly ash generated at power generation facilities, with OSU refining this process even further. OSU researchers demonstrated that a conceptual three-stage trap-extract-precipitate (TEP) process can successfully extract REEs from coal mine drainage. The TEP process relies on the use of environmentally benign industrial by-products to trap the REEs and an organic chelating agent to recover the REEs from the mine drainage.



***K-12 STEM Education & Outreach Team Supports West Virginia Regional Science Bowl (WWSB) Competitions in December 2019***

NETL's K-12 STEM Education & Outreach team provided support services during three WWSB Regional Education Service Agency qualifying competitions in December. The competitions determined which middle and high school teams will compete in the main WWSB event, to be held February 8–9, 2020, at West Virginia University in Morgantown. The winning teams from the WWSB will win an all-expenses-paid trip to Washington, D.C., to compete in the annual National Science Bowl in April. During Science Bowl competitions, middle and high school students compete as teams in an action-packed quiz bowl format to answer questions on science, math and engineering. The events test students' STEM knowledge while promoting and demonstrating the value of science and technology in education.



***DOE Announces Nearly \$6.3 Million for University Training and Research for Fossil Energy Applications***

DOE's Office of Fossil Energy and NETL have announced approximately \$6.3 million in federal funding for research and development projects under the funding opportunity announcement (FOA) DE-FOA-0002193, University Training and Research for Fossil Energy Applications. This FOA will encompass two separate university programs, each with its own requirements and restricted eligibility. The two programs are the University Coal Research Program and the HBCU/MSI Program. Projects under this FOA will support early-stage, fundamental research that advances the science of coal technologies, while also helping to train the next generation of energy researchers, scientists, and engineers at U.S. colleges and universities. The HBCU and Other Minority Institutions program aims to increase the participation of underrepresented students in such research.

**Upcoming Workforce Conferences, Meetings, and Summits**



***2020 National Association of Development Organizations (NADO) and the Development District Association of Appalachia (DDAA) Washington Conference***

The Crystal Gateway Marriott, Arlington, VA, March 15–18, 2020

Join NADO and DDAA for a series of workshops, meetings, and discussions focused on regional development, the federal landscape, and the programs and policies that matter most to Regional Development Organizations and their stakeholders.

***American Association of Community Colleges Annual Conference***

Gaylord National Resort & Convention Center, National Harbor, MD, March 28–30, 2020

The Nation's only gathering focused squarely on trends and issues facing America's community college system. With representatives from nearly all of the U.S. states every year, this conference is a unique opportunity to network and engage with community college staff and organizations focusing on community colleges from across the U.S.

***68<sup>th</sup> Annual National Conference on Science Education***

Boston Convention & Exhibition Center, Boston, MA, April 2–5, 2020

National Science Teachers Association (NSTA) conferences offer the latest in science content, teaching strategy, and research to enhance and expand your professional growth. Take advantage of this unique opportunity to collaborate with science education leaders and your peers. Each year, NSTA hosts a national conference on science education (in the spring), three area conferences (in autumn), and a STEM Forum & Expo.

***Partners for Education — Rural College Access & Success Summit***

Talking Stick Resort, Scottsdale, AZ, April 26–28, 2020

As one of the few national convenings to focus on rural America, the summit brings together teachers, principals, superintendents, higher education leaders, legislators, and non-profit leaders to share ideas and strategies for ensuring that rural youth have the opportunity to successfully transition from high school to college and career. We hope you'll consider sharing your expertise and ideas with fellow professionals and submit a breakout session proposal.

Reports and Resources



*LinkedIn December*

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 December findings:

- Gross hiring nationally in the U.S. was 7.6% higher than in November 2018, and seasonally-adjusted national hiring was 0.7% higher in November 2019 from October 2019.
- The Software & IT Services saw notable gains in November, up 10.7% year-to-year (y/y) and up 1% month-to-month (m/m), and Agriculture also posted significant gains, up 10.4% y/y and up 2.3% m/m.
- Industries that saw notable dips in hiring include: Retail (down 3.6% y/y and down 3.4% m/m), Manufacturing (down 3.5% y/y and up 1% m/m), and Construction (down 0.5% y/y and 0% m/m).
- Austin, TX; Nashville, TN, and Charlotte, NC, gained the most workers in November 2019.

*Report: Upskilling and Downsizing in American Manufacturing*

Center on Education and the Workforce, Georgetown University

Manufacturing was once the powerhouse of the industrial economy. Following decades of upskilling and downsizing, it now plays a smaller, less central role in an economy dominated by services. In 1947, manufacturing was responsible for 25% of all value added in the economy — more than any other industry. By 2017, it had fallen to just 12% of all value added. Over the same period, professional and business services jumped from just 3% of value added 12% and finance rose from 10% to 21%.

DOE STEM Rising



*Inspiring STEM Careers Through a Hands-on Everglades Microbiome Study*

The Florida Everglades evokes images of fan boats skimming over swamps, while alligators peer through the waters and clouds of insects hover just above. Described as a “river of grass” that stretches some 580,000 square miles across southern Florida, they encompass a wide range of ecosystems ranging from wetlands to tree islands to cattails. In 2018, DOE’s Joint Genome Institute, a DOE Office of Science User Facility located at Lawrence Berkeley National Laboratory, embarked on a *pilot project* with *biology students* from Boca Raton Community High School in Palm Beach County, Florida. The class sought to apply the latest molecular techniques to learn more about the microbial communities in the Arthur R. Marshall Loxahatchee National Wildlife Refuge, a 226-square mile area of the northern Everglades in Palm Beach County, and particularly about the microbes that play roles in the methane cycle. Their data report, which provides the only known reference microbiome data sets for the Loxahatchee Refuge, was published in the journal *Environmental Microbiome*.



*Juliette Ugirumurera: Solving Real-World Computational Problems Between Two Worlds*

She grew up almost 8,600 miles from the National Renewable Energy Laboratory, in the African nation of Rwanda, but her exceptional aptitude and a passion for problem-solving opened the door for Juliette Ugirumurera to make her way to Golden, Colorado, where she works proudly as an accomplished simulation and optimization scientist in the lab’s Computational Science Center.



**Building the Future Bioeconomy**

In order to create the fuels and bioproducts of tomorrow that are derived from plants and biomass, we must attract and train the workforce of the future to lead the way in energy innovation. That's one of the key topics at hand as DOE hosts the *InnovationXLab Summit on Biomanufacturing* January 28–29, 2020, in Berkeley, California, gathering researchers, industry, and academia gather to discuss ways to partner on the transformative area of biomanufacturing.

**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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