

RWFI E-NOTE MONTHLY

REGIONAL WORKFORCE INITIATIVE • JANUARY 2019

Welcome Message

Greetings NETL RWFI stakeholders,

Happy New Year!

The January 2019 E-note features new funding opportunities from the National Science Foundation, on the future of work, and the announcement of the latest round of Appalachian Regional Commission's (ARC) 45-million-dollar POWER grant program solicitation. You will also find information on how to register for the POWER workshops around the Appalachian area, meant to help those who are considering applying for this program.

Additionally, The National Energy Technology Laboratory Regional Workforce Initiative (NETL RWFI) team invites you to join us on *Friday, February 8th for a one-hour webinar* on how you and your organizations can work and partner with NETL to support your economic development and workforce missions. NETL presenters will provide information on the various collaborative and funding mechanisms in place to partner with others as well as provide information on other tools and resources available through the lab and background on the research mission of NETL. Please feel free to share/forward the invitation below, however registration is limited and space is filling fast. You are encouraged to *register now and secure your spot today*. More information can be found within this month's E-Note, as well as upon registration for the event. Feel free to forward the invitation to others you think may benefit from the webinar.

The NETL RWFI team looks forward to 2019 and working with you and your stakeholders in advancing energy and manufacturing workforce within the region.

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



Appalachian Regional Commission POWER grants

Appalachian Regional Commission, **Deadline, April 10, 2019**

The *Request for Proposals* for POWER 2019 is now available. ARC will begin accepting applications for funding on **February 1, 2019**, and are due April 10, 2019, 5:00pm (EDT). **Approximately \$45 million will be awarded through a competitive granting process.** In Fiscal Year 2019, ARC's POWER Initiative will continue focusing on investments that are regional, strategic, transformational, and maximize economic revitalization in Appalachia's coal-impacted communities. POWER investment priorities include:

- Building a competitive workforce;
- Enhancing access to and use of broadband services;
- Fostering entrepreneurial activities; and
- Developing industry clusters in communities; and
- Strengthening substance abuse response.

National Science Foundation Research Traineeship (NRT) Program

National Science Foundation, **Deadline: February 6, 2019**

The NSF Research Traineeship (NRT) program is designed to encourage the development and implementation of bold, new, and potentially transformative models for science, technology, engineering and mathematics (STEM) graduate education training. The NRT program seeks proposals that explore ways for graduate students in research-based master's and doctoral degree programs to develop the skills, knowledge, and competencies needed to pursue a range of STEM careers. The program is dedicated to effective training of STEM graduate students in high priority interdisciplinary or convergent research areas, through the use of a comprehensive traineeship model that is innovative, evidence-based, and aligned with changing workforce and research needs.

Training-based Workforce Development for Advanced Cyberinfrastructure

National Science Foundation, **Deadline: February 6, 2019**

This program seeks to prepare, nurture, and grow the national scientific research workforce for creating, utilizing, and supporting advanced cyberinfrastructure (CI) to enable and potentially transform fundamental science and engineering research and contribute to the Nation's overall economic competitiveness and security. The goals of this solicitation are to (i) ensure broad adoption of CI tools, methods, and resources by the research community in order to catalyze major research advances and to enhance researchers' abilities to lead the development of new CI; and (ii) integrate core literacy and discipline-appropriate advanced skills in advanced CI as well as computational and data-driven science and engineering into the Nation's educational curriculum/instructional material fabric spanning undergraduate and graduate courses for advancing fundamental research.

Fiscal Year 2019 Consolidated Innovative Nuclear Research

Department of Energy, **Deadline: February 12, 2019**

This FOA addresses the competitive portion of NE's R&D portfolio as executed through the Nuclear Energy University Program (NEUP), Nuclear Energy Enabling Technologies (NEET) Crosscutting Technology Development (CTD), and the Nuclear Science User Facilities (NSUF). NEUP utilizes up to 20% of funds appropriated to NE's R&D program for university-based infrastructure support and R&D in key NE program-related areas: Fuel Cycle Research and Development (FC R&D), Reactor Concepts Research, Development and Demonstration (RC RD&D), and Nuclear Energy Advanced Modeling and Simulation (NEAMS). NEET CTD supports national laboratory- and university-led crosscutting research. By establishing the NSUF in 2007, DOE-NE opened up the world of material test reactors, beam lines, and post-irradiation examination facilities to researchers from U.S. universities, industry and national laboratories by granting no-cost access to world-class nuclear research facilities.

Minority Serving Institutions Partnership Program

Department of Energy, **Deadline: February 15, 2019**

The Minority Serving Institutions Partnership Program (MSIPP) within the Department of Energy's (DOE), National Nuclear Security Administration (NNSA) Office of Science, Academic Alliances and Partnerships subprogram funds academic programs to develop NNSA's next-generation technical workforce. NNSA funds scientific academic programs to develop the next generation of highly trained technical workers able to support its core mission and to ensure there is a strong community of technical peers, external to the NNSA national laboratories, capable of providing peer review and scientific competition to strengthen the basic fields of research relevant to the NNSA. 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 at the laboratories and production plants, and to enhance research and education at under-represented colleges and universities. Visit Fed connect ([link](#)) for more information or Grants.gov.

National Robotics Initiative 2.0: Ubiquitous Collaborative Robot

National Science Foundation, **Deadline: February 19, 2019**

The NRI-2.0 program builds upon the original National Robotics Initiative (NRI) program to support fundamental research in the United States that will accelerate the development and use of collaborative robots (co-robots) that work beside or cooperatively with people. The focus of the NRI-2.0 program is on ubiquity, which in this context means seamless integration of co-robots to assist humans in every aspect of life. The program supports four main research thrusts that are envisioned to advance the goal of ubiquitous co-robots: scalability, customizability, lowering barriers to entry, and societal impact. Topics addressing scalability include how robots can collaborate effectively with multiple humans or other robots; how robots can perceive, plan, act, and learn in uncertain, real-world environments, especially in a distributed fashion; and how to facilitate large-scale, safe, robust and reliable operation of robots in complex environments.

Hands on the Future: A Making and Computer Coding Skill-building Program for Women

Department of State, **Deadline: February 20, 2020**

The REPS Office of the U.S. Embassy's Public Affairs Section seeks proposals for a program entitled "Hands on the Future: A Making and Computer Coding Skill-building Program for Women." This program will consist of a needs assessment of the making and computer coding ecosystems of New Delhi, Chennai, Kolkata, and Mumbai, a series of no-cost training workshops in those cities, and mentoring for young Indian women between the ages of 18-23 with demonstrated prior interest in STEM fields.

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

National Science Foundation, **Deadline: March 6, 2019**

In 2016, the National Science Foundation (NSF) unveiled a set of "Big Ideas," 10 bold, long-term research and process ideas that identify areas for future investment at the frontiers of science and engineering (see https://www.nsf.gov/news/special_reports/big_ideas/index.jsp). The Big Ideas represent unique opportunities to position our Nation at the cutting edge of global science and engineering leadership by bringing together diverse disciplinary perspectives to support convergence research. As such, when responding to this solicitation, even though proposals must be submitted to the Directorate for Engineering (ENG), Office of Emerging Frontiers and Multidisciplinary Activities (ENG/EFMA), once received the proposals will be managed by a cross-disciplinary team of NSF Program Directors. The Future of Work at the Human-Technology Frontier (FW-HTF), one of the Big Ideas, is one mechanism by which NSF is responding to the challenges and opportunities for the future of jobs and work.

NSF Scholarships in Science, Technology, Engineering, and Mathematics Program

National Science Foundation, **Deadline, March 27, 2019**

A well-educated science, technology, engineering, and mathematics (STEM) workforce is a significant contributor to maintaining the competitiveness of the U.S. in the global economy. The National Science Foundation (NSF) Scholarships in Science, Technology, Engineering, and Mathematics (S-STEM) program addresses the need for a high quality STEM workforce in STEM disciplines supported by the program and for the increased success of low-income academically talented students with demonstrated financial need who are pursuing associate, baccalaureate, or graduate degrees in science, technology, engineering, and mathematics (STEM) [6], [16]. Recognizing that financial aid alone cannot increase retention and graduation in STEM, the program provides awards to Institutions of Higher Education (IHEs) 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.



Lab Partnering Service Highlights NETL's Unique Role in Expediting Technology Transfer

Technology transfer is critical to research and development efforts at NETL and across the country, as it ensures that emerging innovations move from the laboratory to the marketplace for the greatest impact. Partnerships with businesses, entrepreneurs, universities and others facilitate technology transfer by bridging the gap between research and commercialization. The necessity for collaboration puts NETL in a key position within the U.S. Department of Energy's (DOE) Lab Partnering Service (LPS). Launched in July 2018, LPS helps potential investors/partners navigate the vast economic opportunities within the DOE complex by providing a single online access point for information from all 20 national labs and facilities. The LPS website enables users to connect with technology experts at relevant DOE national labs and facilities, learn about partnership possibilities and search technologies and patents available for licensing. Inquiries are routed to each lab's Technology Transfer Office, which assists in answering questions and/or directing them to the appropriate individual within the DOE laboratory system.

NETL News



Unleashing American Energy: Discovery, Innovation, and Prosperity

NETL is America's fossil energy research laboratory, and our researchers are proud to share their vital work through the Lab's annual Science and Technology Accomplishment Session. Energized by the success of last year's inaugural event, NETL researchers set ambitious new goals for themselves to further support key research priorities for the Office of Fossil Energy (FE). As we build upon NETL's history of innovation, our work continues to deliver on our mission to discover, integrate and mature technology solutions that enhance the nation's energy foundation and protect the environment for future generations.



Clean Energy Smart Manufacturing Innovation Institute Investigates NETL Collaboration Potential

NETL's work in designing transformative advanced energy systems through a partnership of academic institutions and U.S. Department of Energy national laboratories — known as the Institute for the Design of Advanced Energy Systems (IDAES) — and its innovations in the field of sensor development has drawn the attention of the Clean Energy Smart Manufacturing Innovation Institute (CESMII). Haresh Malkani, Ph.D., chief technology officer of CESMII, visited NETL in Pittsburgh Wednesday to learn more about the Laboratory's work and discuss potential areas of mutual interest like sensor development and IDAES activities. CESMII, launched in 2016, is the ninth institute in the Manufacturing USA network. Its focus is the research and development of technologies and solutions that can capture, share and process the increasing amounts of information

available at manufacturing facilities. These technologies are expected to enable dramatically improved process control and operation, and enable benefits such as improved energy efficiency, equipment reliability and productivity gains, as well as related improvements in safety and quality in manufacturing processes.

Upcoming Workforce Conferences, Meetings, and Summits



NETL Regional Workforce Initiative Webinar- Working with NETL – An Economic Development Webinar

Friday, Feb. 8th, 2018 11 AM-12 PM ET

Learn how your organization and your stakeholders can work with NETL, to advance energy and manufacturing industry innovations and breakthroughs that support the current and future economic development of the nation and Appalachian Region. Participants in this webinar will learn how to engage and work with NETL and about the Laboratory's research and development competencies and expertise. Information will also be presented outlining NETL resources available for energy and manufacturing activities and other tools available for economic development groups and their stakeholders, including the NETL Regional Workforce Initiative (RWFI), the NETL Strategic Partnerships Group and other resources. *Registration is limited so secure your spot here today!*

Tennessee Environmental Conference, Health, Industry, Environment, Economic Development

March 18 - 20, 2019; Meadowview Convention Center, Kingsport, TN

The Annual Tennessee Environmental Conference is the state's largest and most comprehensive educational opportunity and will be attended by an over 500 State, Local, and Federal Government Officials, Business and Industry Leaders, Attorneys, Consultants, Engineers, Developers, Land Owners, Architects, Agribusiness Leaders, Energy Experts, Water Planning Districts, Universities, Public Health Officials, Solid Waste and Recycling Experts, and many others. Over the two-day period, this Conference will host an elite group of environmental professionals seeking knowledge and sharing ideas around environmental concerns in Tennessee.

National Association of Development Organizations (NADO) & Development District Association of Appalachia (DDAA) Washington Conference

March 17-20, 2019; Crystal Gateway Marriott, Arlington, VA

In 2019, the Development District Association of Appalachia Annual Conference will be held in conjunction with the NADO Washington Conference. Whereas in previous years there were two separate registrations for two conferences, this year there is only a single registration process for a combined conference. The Development District Association of Appalachia (DDAA) is a membership organization of the 73 Local Development Districts (LDD's) serving the 420 counties of the Appalachia Region. The DDAA works to strengthen LDDs and their member governments and to provide leadership to support the Appalachian Regional Commission (ARC) federal-state-local partnership.

ARC POWER Initiative

ARC has invested over **\$120 million** to specifically strengthen and diversify the economy in **309 Appalachian coal-impacted communities.**

LEARN MORE: www.arc.gov/power

Appalachian Regional Commission, October 2018

Application Workshops for ARC's FY 2019 POWER Initiative: Investing in the Future of Appalachia's Coal-Impacted Communities

Event dates through February and March

ARC is hosting a series of free regional workshops on how to prepare competitive applications for funding available through the FY 2019 POWER (Partnership for Opportunity and Workforce and Economic Revitalization) Initiative to help Appalachia's coal-impacted communities strengthen and diversify their economies. The day-long agenda will review funding eligibility, process, and requirements as well as information on relevant research about coal-impacted communities, case studies of ARC's current POWER investments, and extensive networking opportunities. Community officials, economic development leaders, as well as representatives from nonprofits, educational institutions, local governments, and other interested organizations are encouraged to attend. Each workshop will run from 8:30 am – 3:30 pm and will include a light breakfast and lunch. Attendance is free; however, *pre-registration is required* as space is limited. Locations are below:

- Guntersville, Alabama: Thursday, January 24
Lake Guntersville State Park Lodge
- Morehead, Kentucky: Thursday, February 7
Morehead State University
- Johnson City, Tennessee: Wednesday, February 13
ETSU Millennium Centre
- Morgantown, West Virginia: Wednesday, March 6
Morgantown Marriott at Waterfront Place

Reports and Resources



January 2019 LinkedIn Workforce Report

LinkedIn

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

- **Data mining, business development, and sales skills are in demand in SF, NYC, D.C., and LA** – The Emerging Jobs Report catalogued the top 20 emerging jobs in the United States. The skills associated with these quickly-growing roles include data mining, business development and relationship management, and sales. Learning these skills is key to obtaining a top emerging job like data scientist or customer success manager.

STEM 2.0 Report

STEMconnector.com

An Imperative for Our Future Workforce, is a collection of articles outlining and supporting STEM 2.0, an initiative of STEMconnector and its Innovation Task Force. STEM 2.0 is focused on identifying, defining and inculcating in students several new key capability platforms, or skill sets, the future workforce will need to become successful STEM professionals in tomorrow's economy. The first five articles define the core capability platforms (CPs) of the initiative: Employability Skills 2.0; Innovation Excellence; Digital Fluency; and Hard Skills. The publication continues with different viewpoints in support of STEM 2.0 ranging from the education community, industry, and other important stakeholders.

Automation and Artificial Intelligence

Brookings Institute

The power and prospect of automation and artificial intelligence (AI) initially alarmed technology experts, for fear that machine advancements would destroy jobs. Then came a correction of sorts, with a wave of reassurances minimizing

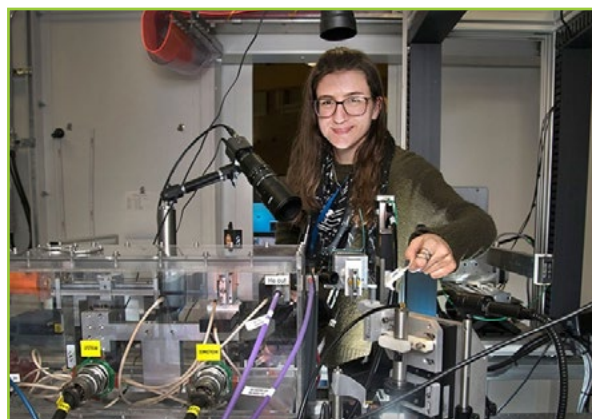
their negative impacts. Now, the discourse appears to be arriving at a more complicated, mixed understanding that suggests that automation will bring neither apocalypse nor utopia, but instead both benefits and stresses alike. Such is the ambiguous and sometimes disembodied nature of the “future of work” discussion

DOE STEM Rising



Paducah Site Workers Educate Girls About STEM Careers

More than 120 students recently took part in an interactive learning space hosted by EM's Portsmouth/Paducah Project Office (PPPO) deactivation and remediation contractor at this year's “STEM 4 Girls” event in Paducah. Female engineers, scientists, and other professionals from the Paducah Site informed the young women in the fifth through 12th grades about the variety of careers available to them in the fields of science, technology, engineering, and mathematics (STEM).



Meet Catherine Trehwella: Mapping Terrestrial Analogs for Martian Samples

Catherine Trehwella, a recent graduate from the University of Massachusetts, Amherst, and current intern at the U.S. Department of Energy's (DOE) Brookhaven National Laboratory, is taking a microscopic look at rocks at the National Synchrotron Light Source II (NSLS-II), a DOE Office of Science user facility. Her research will help prepare scientists for analyzing samples brought back from outer space, specifically Mars.



From Intern to Engineer Nick Johnson Follows the Wind to NREL

Nick Johnson, mechanical engineer and principal investigator at the National Wind Technology Center at NREL, has come a long way since his 2006 internship with the lab. According to Nick, NREL left its mark early. “Ever since my internship in ‘06, I knew this was where I wanted to work,” he said. “All these little things I’d been doing—getting my master’s degree, working at the U.S. Department of Energy, and gaining some experience in industry—were seeds to try and get back here. This is where I’ve always wanted to be.”

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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