

RWFI E-NOTE MONTHLY

REGIONAL WORKFORCE INITIATIVE • SEPTEMBER 2018

Welcome Message

Greetings NETL RWFI stakeholders,

This month's E-Note contains information about new funding opportunities from the National Science Foundation and the Appalachian Regional Commission. From the ARC comes the opportunity for regional stakeholders to conceptualize what an *Appalachian Leadership Institute* leadership development program could look like. This will be included in their request for proposals, due October 19, 2018. The NSF also announces a funding opportunity around the Geosciences with their *Improving Undergraduate STEM Education: Pathways into Geoscience* funding opportunity. You can learn more about both these funding announcements in this month's RWFI E-Note.

Additionally, in our upcoming conferences meetings and summits section of this month's E-note is information on two regional meetings, occurring in October — the 2018 TransTech Conference and the Annual West Virginia Energy Summit.

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



Advanced Technological Education Program

National Science Foundation, **Deadline: October 15, 2018**

With an emphasis on two-year Institutions of Higher Education (IHEs), the Advanced Technological Education (ATE) program focuses on the education of technicians for the high-technology fields that drive our nation's economy. The program involves partnerships between academic institutions (grades 7–12, IHEs) and industry to promote improvement in the education of science and engineering technicians at the undergraduate and secondary institution school levels. The ATE program supports curriculum development, professional development of college faculty and secondary school teachers, career pathways, and

other activities. The program invites research proposals that advance the knowledge base related to technician education. It is expected that projects will be faculty driven and that courses and programs will be credit bearing, although materials developed may also be used for incumbent worker education. The ATE program encourages partnerships with other entities that may impact technician education.

For example,

- The National Institute of Standards and Technology Manufacturing Extension Partnerships (<http://www.nist.gov/mep/index.cfm>) as applicable to support technician education programs and the industries they serve;
- Manufacturing USA Institutes (<https://manufacturing.gov/>) and Investing in Manufacturing Communities of Practice (IMCPs) (<https://www.eda.gov/imcp/addressing> workforce development issues (also see DCL NSF 16-007); and
- National Science Foundation Industry University Cooperative Research Centers Program (IUCRC) awardees (<http://www.nsf.gov/eng/iip/iucrc/>).

The ATE program encourages proposals from Minority Serving Institutions and other institutions that support the recruitment, retention, and completion (certificate, degree, program) of students underrepresented in STEM in technician education programs that award associate degrees. The ATE program is particularly interested in proposals from all types of Minority Serving Institutions (including Hispanic Serving Institutions, Historically Black Colleges and Universities, Tribal Colleges and Universities, and Alaska Native and Native Hawaiian Serving Institutions) where the proportion of underrepresented students interested in advanced technology careers is growing.

Scaling Apprenticeship Through Sector-Based Strategies

U.S. Department of Labor, Employment and Training Administration, **Deadline, October 16, 2018**

The purpose of this grant program is to support sector-based approaches to expanding efforts to develop and implement apprenticeships on a national scale in key industry sectors. The overarching goals of this grant program are threefold: (1) to accelerate the expansion of apprenticeships to new industry sectors reliant on H-1B visas, (2) to promote the large-scale expansion of apprenticeships across the nation, and (3) to increase apprenticeship opportunities for all Americans. Grant funds will be awarded to institutions of higher education in partnership with national industry associations, which together seek to develop, implement, and take to a national scale a new apprenticeship model; or expand an existing apprenticeship program to a new industry sector or occupation or a new population, on a national scale.

Appalachian Leadership Institute

Appalachian Regional Commission,
Deadline, October 19, 2018

The Appalachian Regional Commission (ARC) is soliciting proposals from organizations within the Appalachian Region, including nonprofits, institutions of higher education, and other stakeholders, as partners in creating the Appalachian Leadership Institute, a nationally recognized leadership development program that will prepare state and local leaders to work for future improvements in the region by “thinking and acting regionally.” ARC encourages responders to bring forth innovative ideas that will train local leadership through substantive exercises and learning modules, and empower Institute participants to take action towards positively impacting the future of Appalachia with collaborative solutions to our region’s greatest challenges. Proposals are due on or before 5:00 p.m. October 19, 2018.

U.S. Department of Agriculture Small Business Administration Phase One Grants

U.S. Department of Agriculture, **Deadline, October 25, 2018**

The Small Business Innovation Research (SBIR) program at the U.S. Department of Agriculture (USDA) offers competitively awarded grants to qualified small businesses to support high quality research related to important scientific problems and opportunities in agriculture that could lead to significant public benefits. The program stimulates technological innovations in the private sector and strengthens the role of federal research and development in support of small businesses. The SBIR program also fosters and encourages participation by women-owned and socially or economically disadvantaged small businesses.

USDA SBIR Topics

- Forests and Related Resources
- Plant Production and Protection — Biology
- Animal Production and Protection
- Air, Water, and Soils
- Food Science and Nutrition
- Rural Development
- Aquaculture
- Biofuels and Biobased Products
- Small and Mid-Size Farms
- Plant Production and Protection — Engineering

State of Pennsylvania, Business Education Partnership Grant

State of Pennsylvania, Department of Labor & Industry,
Deadline, October 31st

The purpose of this Notice of Grant Availability (NGA) is to solicit grant applications to implement Business-Education Partnerships programs that provide opportunities to connect local businesses with school districts to promote job opportunities and career pathways. These programs increase awareness of in-demand technical careers for students, parents, guardians, teachers and school faculty. The grant funding is available to applicants in Pennsylvania through the Department of Labor & Industry (L&I) to Local Workforce Development Boards.

Louis Stokes Alliances for Minority Participation

National Science Foundation, **Deadline, November 16, 2018**

The Louis Stokes Alliances for Minority Participation (LSAMP) program is an alliance-based program. The program’s theory is based on the Tinto model for student retention. The overall goal of the program is to assist universities and colleges 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. The LSAMP program takes a comprehensive approach to student development and retention. Particular emphasis is placed on transforming undergraduate STEM education through innovative, evidence-based recruitment and retention strategies, and relevant educational experiences in support of racial and ethnic groups historically underrepresented in STEM disciplines.

Improving Undergraduate STEM Education: Pathways into Geoscience

National Science Foundation, **Deadline, November 19, 2018**

A well-prepared, innovative STEM workforce is crucial to the nation’s health and economy. Indeed, recent policy actions and reports have drawn attention to the opportunities and challenges inherent in increasing the number of highly qualified STEM graduates, including STEM teachers. Priorities include educating students to be leaders and innovators in emerging and rapidly changing STEM fields as well as educating a scientifically literate populace. Both priorities depend on the nature and quality of the undergraduate education experience. In addressing these STEM challenges and priorities, the National Science Foundation invests in evidence-based and evidence-generating approaches to understanding STEM learning; to designing, testing, and studying instruction and curricular change; to wide dissemination and implementation of best practices; and to broadening participation of individuals and institutions in STEM fields.

Recap of Recent NETL Meetings and Regional Events



NETL RWFI Participates in Annual ARC Summit

This year's summit *Appalachia Works: Expanding Opportunities for Our Region's Future*, was hosted by the state of Mississippi and took place in Tupelo Mississippi, September 12–14, 2018. The program highlighted best practices, emerging ideas, and lasting strategies for economic development across Appalachia, including in the Tri-State Region (Pennsylvania, Ohio, and West Virginia). Jobs and Workforce development were key themes throughout the event which attracted hundreds of stakeholders from across the Appalachian Region. Energy and advanced manufacturing were discussed as components to increasing economic development opportunities for the Appalachian region.



Ensuring Sustainable Energy Production Through Environmental Monitoring

Responsible stewardship of the environment is a top priority for the U.S. Department of Energy and a key tenet of NETL's mission. As NETL works to produce technological solutions for America's energy challenges, environmental sustainability remains a driving factor. That's why our research — from developing innovations for highly efficient energy production, to advancing technologies that enhance the extraction and transmission of domestic resources — is underpinned by innovations that monitor the environment to safeguard our air and water and ensure the safety and health of all Americans.



NETL works to locate Natural Gas Gathering Lines and Quantify Methane Emissions

As NETL strives to develop technology solutions to the nation's energy challenges, which includes improving the health, safety and security of all Americans, the Lab is working to locate and quantify methane leaks in the natural gas infrastructure. A vast pipeline network spanning more than 3 million miles delivers over 24 trillion cubic feet of natural gas to 70 million-plus consumers in the United States each year. This infrastructure includes three categories of pipelines: gathering lines, which transport raw natural gas from wells for processing; transmission lines, which move processed natural gas to distribution centers and storage facilities across the country; and distribution lines, which deliver natural gas to customers.

NETL News



NETL Shares Microscopes, Engineering with West Virginia Students

NETL's K–12 STEM Education & Outreach team recently spent the day visiting with about 175 first- and second-grade students at Brooke County Primary School South, in Wellsburg, West Virginia. The team shared engaging, active learning experiences — focused on microscopic discoveries and engineering challenges, as shown here — designed to excite students about STEM fields.

Upcoming Workforce Conferences, Meetings, and Summits



West Virginia Energy Summit: Energy Innovation Powering a Nation

Stonewall Resort, Roanoke, West Virginia, **October 9–11, 2018**

The West Virginia Department of Commerce and the Office of Energy welcome state residents, energy and technology industry leaders, association executives, statewide elected officials, senior government officials, college and university administrators, and other influential decision makers from around the Mountain State to discuss how West Virginia's expanding energy universe leads the nation in innovation and advanced development.

2018 TransTech Energy Conference

Hilton Garden Inn, Southpointe, Canonsburg, Pennsylvania, **October 23–24, 2018**

The Annual TTE Business Development Conferences provide a venue for TTE start-ups and commercializable projects from universities, national labs, private companies, and other innovation/entrepreneurial centers to make pitches for funding to panels of investors and industry experts. The goal is creation of new businesses and jobs in our region. The TTE conferences generate interest and excitement in the community for research-based innovative technologies and raise expectations among the general public for creation of start-up companies and new jobs based on research from universities and national labs.

Reports and Resources



August 2018 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. Nationally, across all industries, gross hiring in the U.S. was 4.6% higher than in July 2017. Seasonally-adjusted national hiring was up 0.5% in July from June 2018. The industries with the biggest year-over-year hiring increases in June were agriculture (26% higher); manufacturing (12.3% higher); and transportation & logistics (12% higher).

- **Skills Gaps | Demand for data scientists is off the charts** — In 2015, there was a national surplus of people with data science skills. Nationally, the U.S. has a shortage of 151,717 people with data science skills, with particularly acute shortages in *New York City* (34,032 people), the *San Francisco Bay Area* (31,798 people), and *Los Angeles* (12,251 people). As more industries rely on big data to make decisions, data science has become increasingly important across all industries, not just tech and finance. In that sense, it's a good proxy for how today's cutting-edge skills like artificial intelligence & machine learning may spread to other industries and geographies in the future.

Fourth Annual Emerson STEM Survey

Emerson

Despite a national targeted focus on STEM fields and education over the past decade, two out of five Americans believe the STEM worker shortage is at crisis levels, according to results from the fourth annual STEM survey by Emerson (NYSE: EMR) announced today. While the survey found students today are twice as likely to study STEM fields compared to their parents, the number of roles requiring STEM expertise is growing at a rate that exceeds current workforce capacity. In manufacturing alone, the National Association of Manufacturing and Deloitte predict the U.S. will need to fill about 3.5 million jobs by 2025; yet as many as 2 million of those jobs may go unfilled, due to difficulty finding people with the skills in demand.

DOE STEM Rising



Interns make a big difference with some very small creations at Pacific Northwest National Laboratory

Arnold Eng believes that small changes can make a big difference — especially in the world of nuclear *safeguards*. A researcher in NNSA’s *Safeguards Internship Program* at Pacific Northwest National Laboratory, Eng turned to two teams of Washington State University engineering and materials science students to design and fabricate the specialized equipment changes.

Women in STEM Posters for Classrooms: Series 2

A Hollywood star. An egg saleswoman. A corn expert. A descendant of Japanese-Americans. A suffragist. These are the backgrounds of women who went on to break barriers in STEM and are featured in the Energy Department’s latest set of the classroom poster series.



Summer computational modeling workshop enriches minority students’ education

Earlier this summer, students from Prairie View A&M University and Tennessee State University spent two weeks exploring the digital world while learning from National Laboratory scientists. Both Universities are historically black institutions equipping students with the skills and knowledge necessary for a successful career. The training included the fifth annual computational modeling workshop. This event is funded through the NNSA’s *Minority Serving Institution Partnership Program*. The 29 undergraduates in the workshop are part of the Consortium for Materials and Energy Security , which aims to enhance national security while preparing the next generation of STEM experts.

ABOUT NETL



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