

RWFI E-NOTE MONTHLY

REGIONAL WORKFORCE INITIATIVE • SEPTEMBER 2019

Welcome Message

Greetings NETL RWFI stakeholders,

This month's funding spotlight highlights the final announcement for the National Science Foundation (NSF) Advanced Technological Education Funding Opportunity with a deadline of October 3, 2019, as well as another NSF grant "Advancing Informal STEM learning" with a deadline of November 6, 2019.

In addition, registration information is provided for the National Council for Workforce Education (NCEE)'s annual meeting set to occur October 8 and 9, 2019, in San Antonio, Texas. The NCEE is an affiliate council of the American Association of Community Colleges. This year, the conference will have an energy workforce track.

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

Advanced Technological Education Program

National Science Foundation, **Deadline, October 3, 2019**

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 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, with:

- The National Institute of Standards and Technology (NIST) Manufacturing Extension Partnerships (MEPs) (<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
- NSF Industry University Cooperative Research Centers Program (I/UCRC) awardees (<http://www.nsf.gov/eng/iip/iucrc/>).

Advancing Informal STEM Learning

National Science Foundation, **Deadline, November 6, 2019**

The Advancing Informal STEM Learning (AISL) program seeks to advance new approaches to and evidence-based understanding of the design and development of STEM learning opportunities for the public in informal environments, provide multiple pathways for broadening access to and engagement in STEM learning experiences, advance innovative research on and assessment of STEM learning in informal environments, and engage the public of all ages in learning STEM in informal environments. The AISL program supports six types of projects: (1) Pilots and Feasibility Studies, (2) Research in Service to Practice, (3) Innovations in Development, (4) Broad Implementation, (5) Literature Reviews, Syntheses, or Meta-Analyses, and (6) Conferences.

FUNDING SPOTLIGHT



Minority Education, Workforce and Training (MEWT) Program

U.S. Department of Energy, **Deadline, October 7, 2019**

The MEWT Program is designed to foster collaboration amongst minority-serving institutions, minority business enterprises, DOE program offices, industry, state, and local government agencies and other federal agencies to increase engagement and capabilities of underserved communities within STEM and energy fields. For more information contact Grant Specialist Obiajulum Diei-Anene 202-287-1885 obiajulum.diei-anene@hq.doe.gov or look up opportunity at Grants.gov.

FY2020 Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) Phase I Release 1

U.S. Department of Energy — Office of Science,
Deadline, October 15, 2019

The objectives of the SBIR/STTR programs include increasing private sector commercialization of technology developed through DOE-supported R&D, stimulating technological innovation in the private sector, encouraging participation by women-owned and minority-owned small businesses, and improving the return on investment from federally-funded research for economic and social benefits to the nation. DOE will support high-quality research or R&D on innovative concepts concerning important mission-related scientific or engineering problems and opportunities that have high potential for commercialization. The DOE SBIR/STTR Programs do not support either basic science or demonstration projects.

Brownfields Training, Research, and Technical Assistance Grants and Cooperative Agreements

Environmental Protection Agency, **Deadline, October 21, 2019**

This notice announces the availability of funds and solicits proposals from eligible entities to conduct research and provide technical assistance to new, existing, and/or prospective EPA Environmental Workforce Development and Job Training (EWDJT) grantees. In addition to providing on-going technical assistance throughout the project period, the successful applicant will be responsible for developing an annual meeting to facilitate peer-to-peer networking and provide training to the EWDJT grantees.

FY20 and FY21 SBIR Phase I Request For Applications

U.S. Department of Agriculture, **Deadline, October 23, 2019**

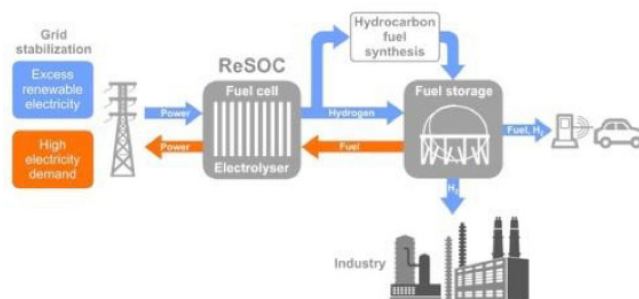
Funds may be awarded up to \$100,000 for a Phase I project. Proposed Phase I projects should prove the scientific or technical feasibility of the approach or concept. Projects dealing with agriculturally related manufacturing and alternative and renewable energy technologies are encouraged across all SBIR topic areas. The U.S. Department of Agriculture (USDA) SBIR's flexible research areas ensure innovative projects consistent with USDA's vision of a healthy and productive nation in harmony with the land, air, and water. USDA SBIR Program has awarded over 2000 research and development projects since 1983, allowing hundreds of small businesses to explore their technological potential, and providing an incentive to profit from the commercialization of innovative ideas.

Tribal Colleges Research Grants Program

U.S. Department of Agriculture, **Deadline, November 1, 2019**

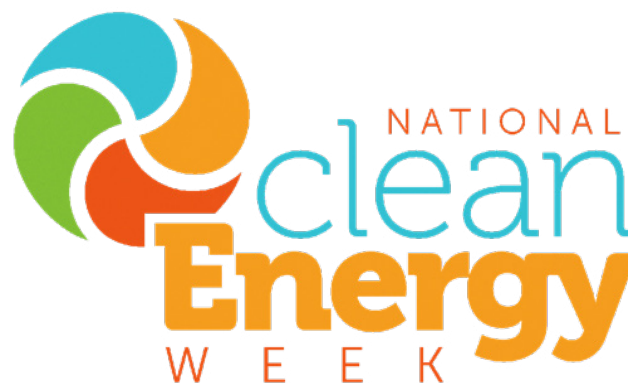
This program was designed to assist 1994 Land-Grant Institutions (Tribal Colleges) in building institutional research capacity through applied projects that address student educational needs and meet community, reservation or regional challenges. Awards are to be made on the basis of a competitive review process. Collaboration with 1862 or 1890 Land-Grant Institutions, the USDA Agricultural Research Service, a Non-Land-Grant College of Agriculture, or at least one forestry school funded under the McIntire-Stennis Cooperative Forestry Research Program is a requirement. Eligible institutions may propose projects in any discipline of the food, agricultural or natural resource sciences.

NETL News



NETL Researchers Advance Promising Alternative Energy Technology

NETL's work with solid oxide fuel cells is enhancing the Nation's electric grid by generating combustion-free power with minimal environmental impact. The lab is now extending its research vision to develop reversible solid oxide cells, which can alternately either generate power or produce clean-burning fuel. Solid oxide cells operate in two modes: fuel cell mode and electrolysis mode. Solid oxide cells operating in fuel cell mode are known as solid oxide fuel cells (SOFCs) while solid oxide cells operating in electrolysis mode are known as solid oxide electrolysis cells (SOECs). SOFCs convert chemical energy from a fuel directly into electrical energy. A fuel source (such as hydrogen, natural gas, or syngas) is fed into the cell, and electricity, water and/or CO₂ are produced as byproducts. Since SOFCs produce electricity through an electrochemical reaction and not through a combustion process, they are much more environmentally friendly than conventional electric power generation methods due to higher efficiencies, reduced water usage and reduced CO₂ emissions.



Welcome National Clean Energy Week With NETL

Recognized from Sept. 23–27, 2019, this year, National Clean Energy Week celebrates advancements in technology that mitigate negative environmental impacts while enhancing the nation's energy foundation. NETL's ongoing energy research exemplifies this message by providing technological solutions to the nation's energy challenges and supporting common-sense solutions that address America's current and future economic and energy needs. The lab's groundbreaking research focuses on developing commercially viable technologies that address a range of energy challenges, including effective resource development, efficiency energy conversion, and results-oriented environmental sustainability.



New Chemistry Solver Enables Major Improvement in Computational Fluid Dynamics Modeling

With the newest release of NETL’s carbonaceous chemistry for computational modeling, or C3M, software, researchers have leveraged machine learning approaches to overcome one of the biggest drains to computational resources when modeling advanced energy systems. Version 19.1 of C3M introduces the Machine Learning Accelerated Stabilized Explicit Variable Load (MLA-STEV) software that solves complex chemical reaction equations much faster than previous iterations, drastically shortening design time and significantly reducing research and development costs. “The MLA-STEV solver could be used to help accelerate the design of cleaner and more efficient energy systems like gasifiers,” said Dirk Van Essendelft, Ph.D., referring to an energy technology that converts organic material such as coal into useful fuels and chemicals.

2019 West Virginia Women & Technology Conference

Embassy Suites Hotel, Charleston, West Virginia, Monday, October 21, 2019

This year’s Women & Technology Conference, to be held October 21, 2019, will feature inspiring women speakers on the cutting edge of technology, value-added panel discussions, quality networking and more. Technology touches all aspects of life, and the information shared at the conference will be relevant to all industry sectors and educational institutions.

Community Colleges of Appalachia 2019 Conference — Community Colleges: Creating Success in Appalachia

Hazard Community and Technical College, Hazard, Kentucky, October 30–November 1, 2019

Hazard Community and Technical College is pleased to host the Community Colleges of Appalachia Fall 2019 Conference. The conference will begin with breakfast on Thursday morning, October 31, 2019, and continue through Friday, November 1, 2019, until noon. The fall conference will focus on creating success in Appalachia.

Upcoming Workforce Conferences, Meetings, and Summits



Mission Possible: Preparing a Future-Ready Workforce

Grand Hyatt — San Antonio, Texas, October 8–9, 2019

The National Council for Workforce Education (NCWE) is committed to promoting excellence and growth in workforce education. As an affiliate council of the American Association of Community Colleges, NCWE provides a national forum for administrators and faculty in workforce education and basic skills, as well as representatives of business, labor, military, and government, to affect and direct the future role of two-year and other post-secondary institutions in workforce education and economic development. NCWE provides the link between policy and workforce education and economic development by providing support, research, and critical information to members on current and future trends and policies.

Reports and Resources



LinkedIn August 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 August findings:

- **Hiring-** Nationally, across all industries, gross hiring in July was 3.9% higher than it was last year. Seasonally-adjusted national hiring in July was steady with no change from June. The industries with the most notable hiring shifts year-over-year in July were Media & Communications (18.4% higher y/y); Design (17% higher y/y); and Corporate Services (13.6% higher y/y).
- **Migration-** For the 13th consecutive month, *Austin* has outpaced the rest of the country in gaining new workers — and the rate of workers moving to *Austin* is now 1.59 times greater than the next-largest gainer, *Denver*. The top cities feeding talent to *Austin* are: *San Francisco Bay Area, CA*; *Houston, TX*; and *New York City, NY*. Not surprisingly, the city *Austin* has lost the most workers in the last 12 months is *Denver*.
- **Skills Gaps-** *Philadelphia* posted the largest skills surpluses this month, with an abundance of workers with skills in: project management, manufacturing operations, healthcare management and real estate. *New York City* previously had the largest skills surpluses.

The Wind Energy Workforce in the United States: Training, Hiring, and Future Needs

National Renewable Energy Laboratory/Center for the New Energy Economy Report

A new National Renewable Energy Laboratory report assesses the national wind energy workforce and the hiring needs of the industry, along with the educational programs that are preparing students for work. Researchers interviewed educational institutions offering wind programs, as well as industry representatives, to identify gaps in the workforce and path to employment.

DOE STEM Rising



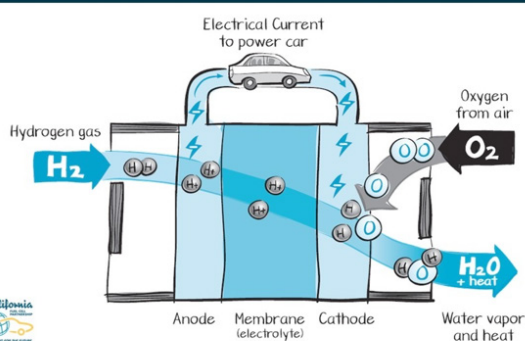
STEM Prep Students Get Hands-On Experience at Brookhaven Lab, Again

Imagine being a high school student and having the opportunity to do hands-on experiments at a national laboratory. Then, imagine you get to do it twice! That's exactly what five local high school students got to do at the DOE's Brookhaven National Laboratory this past August as participants in the STEM Prep Scholar Program, a new phase of Brookhaven's existing STEM Prep Summer Institute. The programs are coordinated by the lab's Office of Educational Programs.

What is a fuel cell?

INCREASE YOUR H₂IQ

Takes hydrogen in and puts electricity and water vapor out



U.S. DEPARTMENT OF ENERGY | OFFICE OF ENERGY EFFICIENCY & RENEWABLE ENERGY | FUEL CELL TECHNOLOGIES OFFICE

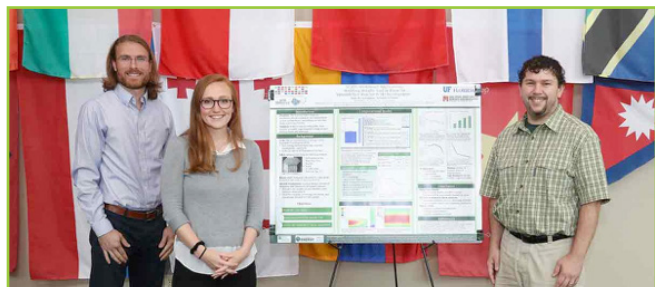
Celebrate Hydrogen and Fuel Cell Day with the Energy Department

The fifth Hydrogen and Fuel Cell Day will take place on October 8, 2019, and we hope you'll join the DOE's Office of Energy Efficiency and Renewable Energy's Fuel Cell Technologies Office in raising awareness and celebrating advances in hydrogen and fuel cells. Aptly chosen to represent hydrogen's atomic weight of 1.008, DOE and stakeholders worldwide will be commemorating Hydrogen and Fuel Cell Day on October 8 with various activities and outreach events throughout the week.



Empowering Women in the Energy Sector

The DOE's Office of International Affairs took another step toward empowering women in the energy sector. During an *Asia-Pacific Economic Cooperation*-funded workshop held in Taipei from Aug 5–6, 2019, titled "Path to an Inclusive Energy Transition in the APEC Region: How to Enhance Women's Empowerment in the Energy Field," DOE spotlighted our recent APEC-funded project to help mid-career professionals in the renewable energy sector develop necessary skills and training to advance in their careers.



Oak Ridge National Laboratory Success Story: Kaylee Cunningham

Growing up, Kaylee Cunningham had her sights set on a career in theater. All that changed during her sophomore year of high school, when classmates in her Advanced Placement physics and calculus classes encouraged her to check out the school's Academy of Engineering, a specialized program focused on engineering and computer science. She was hooked instantly.

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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