

RWFI E-NOTE MONTHLY

REGIONAL WORKFORCE INITIATIVE • MARCH 2020

Welcome Message

Greetings NETL RWFI stakeholders,

The funding in focus this month is a released funding opportunity from the U.S. DOE entitled Workforce Development in Emerging Fields, with a deadline of April 13, 2020. It is of note that a number of funding opportunities have begun to change their due dates, so it is advised that you check with each of the funding opportunities listed here as well as those that you may be thinking of proposing to as deadlines may have changed. The NETL RWFI will also have a webinar on April 7, 2020, from 11:00 a.m.–12:00 p.m. as part of our Energy 101 Webinar Series, this time focusing on NETL's world leading High Performance and Advanced Materials program. *Please sign up here!*

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



Workforce Development in Emerging Fields

Department of Energy, **Deadline, April 13, 2020**

The Office of Energy Efficiency and Renewable Energy (EERE) is issuing Funding Opportunity Announcement (FOA) DE-FOA-0002283 entitled “Workforce Development in Emerging Fields.” Workforce development in emerging technical fields is a critical issue for the United States. The Federal government has a key role to play in helping develop models and frameworks to provide interdisciplinary depth and to speed the training in important fields. The White House Office of Science and Technology Policy (roadmap, “Charting a Course for Success: American’s Strategy for STEM Education,” points to four pathways representing a cross-cutting set of approaches to accomplish STEM education goals, among which is the preparation of the STEM workforce for the future: Develop and Enrich Strategic Partnerships, Engage Students where Disciplines Converge, Build Computations Literacy, and Operate with Transparency and Accountability.

National Ocean Sciences Competition for High School Students

Department of Commerce, **Deadline, April 21, 2020**

The goal of this funding opportunity is to expose high school students in the U.S. and its territories to the excitement of ocean sciences and related fields as well as careers in those fields through an academic competition and related activities. Proposed projects must address at least one of the goals of the National Oceanic and Atmospheric Administration’s (NOAA) Education Strategic Plan listed in section I.A.1 and incorporate relevant NOAA assets. To achieve project goals, applicants should partner with NOAA offices and programs; academic institutions; other nonprofit organizations (including free-choice learning venues and nongovernmental organizations); state, local, and Indian tribal governments in the U.S.; and other U.S. federal agencies. Although it is expected that the project’s focal point will be a tiered academic competition with regional- and national-level events involving approximately 2000 students annually, it should also provide additional learning experiences for student participants, their peers, and their teachers (such as internships and field and/or laboratory research experiences).

National Science Foundation (NSF) Scholarships in STEM Program

National Science Foundation, **Deadline, April 22, 2020**

A well-educated STEM workforce is a significant contributor to maintaining the competitiveness of the U.S. in the global economy. The NSF Scholarships in STEM (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 STEM.

Tribal Colleges Extension Program (TCEP): Special Emphasis

Department of Agriculture, **Deadline, April 30, 2020**

The purpose of the TCEP is to enable 1994 institutions to deliver science-based, culturally relevant extension education programs designed to address public needs and improve quality of life. TCEP is intended to be a component of the applicant 1994 institution’s land-grant roadmap or strategic planning process. To the extent practicable, priorities should reflect The National Institute of Food and Agriculture’s national critical needs areas: 1) Development of sustainable energy, 2) Increased global food security, 3) Adaptation of agriculture and natural resources to global climate change, 4) Reduction of childhood and adolescent obesity, and 5) Improved food safety.

Mid-Scale Innovations Program (MSIP) in Astronomical Sciences

National Science Foundation, **Deadline, May 6, 2020**

A vigorous MSIP was recommended by the 2010 Astronomy and Astrophysics Decadal Survey, citing “many highly promising projects for achieving diverse and timely science.” As described in this solicitation, the Division of Astronomical Sciences conducts a mid-scale program to support a variety of astronomical activities within a cost range up to \$30M. This program is formally divided into four subcategories: 1) limited term, self-contained science projects; 2) longer term mid-scale facilities; 3) development investments for future mid-scale and large-scale projects; and 4) community open access capabilities. The MSIP will emphasize both strong scientific merit and a well-developed plan for student training and involvement of a diverse workforce in instrumentation, facility development, or data management.

FY19 FOA for the Office of Naval Research (ONR) Navy ROTC Cybersecurity Training Program

Office of Naval Research, **Deadline, June 3, 2020**

The ONR seeks a broad range of applications for augmenting existing or developing innovative solutions that directly maintain, or cultivate a diverse, world-class STEM workforce in order to maintain the U.S. Navy and Marine Corps’ technological superiority. The goal of any proposed effort must provide solutions that will grow a capable and trained workforce with the skills to defend against emergent cyber and electronic warfare threats. Funding efforts will be targeted primarily toward projects addressing the technical skills taught to university students enrolled in Reserve Officers’ Training Corps (ROTC) programs; these ROTC programs are not restricted to any particular service. While this effort is targeted primarily toward students enrolled in ROTC programs, it can also include civilian students.

main sponsors are Penn State and Pratt & Whitney, a division of United Technologies. To generate electricity, gas turbines combust a mixture of air and fuel — such as natural gas — at high temperatures and pressures. This high-temperature and high-pressure gas is expanded through a series of nozzles and blade-like airfoils, causing the turbine shaft to spin. The spinning shaft, in turn, drives a generator that produces electricity. Gas turbines also can be used in combination with steam turbines — in a combined-cycle power plant — to create power.

Brian Anderson Shares NETL’s Decarbonization Work at MIT Energy Initiative

NETL Director Brian Anderson shared the Lab’s contributions in addressing America’s long-term energy challenges while retaining environmental integrity at a gathering of the Massachusetts Institute of Technology’s (MIT) Energy Initiative. Anderson highlighted NETL’s advances in cost-effective implementation of carbon capture, utilization, and storage (CCUS) technologies throughout the power-generation sector to ensure Americans continue to have access to clean, affordable and reliable energy. He also explained how NETL’s core competencies can be applied to many fields beyond fossil fuels. “If you’re a good geoscientist, you can apply your skills in geothermal, carbon sequestration, oil & gas recovery, nuclear waste storage or even seismic predictions. We do the same,” Anderson said. “The message I wanted to get across is that we’re more than just a fossil energy laboratory. Yes, we’re the fossil energy laboratory, but we’re applying our expertise across many energy sectors.” Anderson’s presentation at MIT focused on the Lab’s efforts to lower the nation’s costs of addressing carbon emissions with the right techniques and technologies.

NETL News



NETL and Partners Team Up to Advance Turbine Technology

A cooperative partnership with NETL is advancing the development of next-generation gas turbines to perform with greater efficiency and at higher temperatures to meet the nation’s energy needs while generating cleaner power. Since 2011, the Steady Thermal Aero Research Turbine Lab at Penn State University has progressed from a floor plan into a world-class testing facility capable of simulating realistic turbine operating conditions, thanks in large measure to support from NETL and the U.S. DOE’s Office of Fossil Energy. Other



K-12 STEM Education & Outreach Team Assist Science Bowl, Community Events in February

The K-12 STEM Education and Outreach Team at NETL led several Science Bowl competitions in West Virginia and Pennsylvania and facilitated collaboration between organizations and community partners in February. Also during the month, several of the Lab’s STEM Ambassadors visited career fairs and other science-themed events to share information about a career in energy, encourage students to explore science learning and bridge the gap between students and researchers at NETL.

NETL Receives 2020 Carnegie Science Award for Innovation

Advanced NETL technology that will enable power plants to operate at higher efficiencies and use less fuel while producing the same amount of energy has been selected to receive a prestigious award from Pittsburgh’s Carnegie Science Center. NETL researchers won in the Innovation in Energy category for their investigation of the use of single-crystal optical fibers capable of measuring numerous environmental parameters anywhere the fiber is installed — including the extreme environments of power generation systems. Award recipients were announced March 10 at a VIP reception. Awards will be presented at a May 8, 2020, celebration in Pittsburgh, PA. To run a power plant with greater efficiency, it is critical to take measurements of numerous environmental parameters, including temperature, strain, and chemical composition. However, these measurements can be extremely difficult to obtain because conventional electric sensors can’t survive long in the extremely harsh environments present in most fossil or nuclear generation facilities.



Schools Claim Victory at NETL’s Western Pennsylvania Regional Science Bowl Competition

North Allegheny Senior High School, and North Allegheny School District’s Marshall Middle School Team 1 claimed victory at the 29th annual Western Pennsylvania Regional Science Bowl (WPASB), organized and sponsored by NETL. The event was held February 22 and 29, 2020, at the Community College of Allegheny County (CCAC) South Campus in West Mifflin, Pennsylvania. Forty teams from high schools and 32 teams from middle schools throughout the state participated in the competition. The WPASB tested students’ knowledge of math and science with round-robin and double-elimination competition rounds. High school teams competed February 22, followed by middle school students February 29.

Upcoming Workforce Conferences, Meetings, and Summits



NETL RWFI — Energy 101 Webinar Invitation — High Performance & Advanced Materials

Tuesday, April 7, 2020, 11:00 a.m.–12:00 p.m.

Did you know NETL is a world leader in high performance and advanced materials research? These components are key to amassing huge energy efficiencies across a number of industries. This energy efficiency translates to real cost savings to both the industries and the U.S. consumer. But what exactly are high performance and advanced materials and how do they work to save energy while also creating new opportunities for economic growth and jobs? [Register today](#) for our webinar to learn more!

About the Energy 101 Series

The NETL RWFI Energy 101 Series provides a basic primer on the research conducted at NETL, including the challenges and potential economic and workforce opportunities that successful research into these topics and their related challenges may bring to the region and the nation. NETL researchers present information on their work in an easy to follow and thus easy to communicate fashion.

Reports and Resources



The Overlooked Value of Certificates and Associate Degrees: What Students Need to Know Before They Go to College

Center on Education and the Workforce, Georgetown University

This report examines the labor-market value of associate degrees and certificate programs, finding that field of study especially influences future earnings for these programs since they are tightly linked with specific occupations. *The Overlooked Value of Certificates and Associate's Degrees: What Students Need to Know Before They Go to College* also reveals that the combined number of certificates and associate degrees awarded by colleges is similar to the number of bachelor's degrees awarded — around 2 million per year — with certificates and associate degrees each accounting for about 1 million.

DOE STEM Rising



Life — and STEM — Elevated in Utah

Utah's motto is "Life Elevated" and the Governor's Office of Energy Development has readily applied this to their STEM outreach. The Office of Energy Efficiency and Renewable Energy funds work, via a formula grant from the State Energy Program, to support the Utah Power and Energy Career Expo and assist teachers with energy literacy and classroom activities.



Wind Energy Professionals Share Tips for Breezing into the Wind Workforce

The wind industry needs a broad range of workers, including turbine engineers, project developers, and supply chain managers, to support growth in wind. Unfortunately, employers report difficulty hiring well-qualified candidates to support this growth while graduates have also had difficulty finding jobs. That's why the U.S. DOE's *Collegiate Wind Competition* organizing team called together a panel of competition alumni and wind industry professionals to provide helpful tips and tactics for breezing into a job in wind power.



Your Digital Lab Awaits: Why You Should Check Out the Innovation Community Center

In a nation where we can take an exercise class from an app, go grocery shopping without setting foot in a store (or shoe), and video chat with a doctor in lieu of a visit, it seems like a natural step to introduce a digital hub that will serve up a collaborative laboratory workspace. Now college students can have the opportunity to jump into the virtual world of the U.S. DOE's Innovation Community Center, a place that will bring together the best minds in computing and research to tackle energy and environmental challenges with online tools.

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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