

# RWFI E-NOTE MONTHLY

REGIONAL WORKFORCE INITIATIVE • AUGUST 2021

## Welcome Message

Greetings NETL RWFI stakeholders,

This month's funding in focus is the annual funding announcement for the National Science Foundation's *Advanced Technological Education (ATE) program*. With a focus on two-year institutions of higher education, the ATE program supports the education of technicians for the high-technology fields that drive our nation's economy. The ATE program is specifically designed with community colleges in mind.

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 RWFI E-notes.

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– Sincerely, The NETL RWFI TEAM

## Workforce Funding Announcements



### *Advanced Technological Education*

#### **National Science Foundation, Deadline, Oct. 14, 2021**

With a focus on two-year institutions of higher education (IHEs), the Advanced Technological Education (ATE) program supports 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), industry, and economic development agencies 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 applied research proposals that advance the knowledge base related to technician education. It is required that projects be faculty driven and that courses and programs are 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.

### *Rural Energy for America Program — Renewable Energy Systems and Energy Efficiency Improvement*

#### **Department of Agriculture, Deadline, Sept. 30, 2021**

Eligible applicants are agricultural producers and rural small businesses. All agricultural producers, including farmers and ranchers, who gain 50% or more of their gross income from the agricultural operations are eligible. Small businesses located in a rural area can also apply. Rural electric cooperatives may also be eligible to apply. To be eligible, applicants must be individuals or entities at least 51% owned by persons who are either: citizens of the United States, the Republic of Palau, the Federated States of Micronesia, the Republic of the Marshall Islands, or American Samoa; or who are legally admitted permanent residents residing in the United States. The project must be to conduct a feasibility study for a renewable energy system. Eligible technologies include projects that produce energy from wind, solar, biomass, geothermal, hydro power and hydrogen-based sources. All projects must be located in a rural area and must be owned by the applicant. Each applicant must have (or obtain) the legal authority necessary to carry out the purpose of the grant.

### *Scientists in Parks (SIP) Internship Program — Natural Resource Stewardship*

#### **Department of the Interior, National Parks Service, Deadline, Oct. 1, 2021**

The SIP Internship Program provides opportunities for college students, recent graduates, and early career professionals to complete paid internship projects designed to apply the best available science, resource management principles, and interpretation techniques to natural resource stewardship needs in national parks. For more information and the full announcement contact Steve Livingston, Awarding Officer, at [steve\\_livingston@nps.gov](mailto:steve_livingston@nps.gov).

### *FY 21 Department of Navy (DON) STEM Education and Workforce Program*

#### **Department of Defense, Office of Naval Research, Deadline, Oct. 8, 2021**

The Office of Naval Research (ONR) is interested in receiving a broad range of proposals for augmenting existing and/or developing innovative solutions that directly maintain, and/or cultivate a diverse, world-class STEM workforce to maintain the U.S. Navy and Marine Corps' technological superiority. The goal of proposed efforts must provide solutions that establish, build, and/or maintain STEM educational pathways of U.S. citizens directly relevant to the needs of DON's current and future workforce.

### *Campus Cyberinfrastructure*

#### **National Science Foundation, Deadline, Oct. 11, 2021**

The Campus Cyberinfrastructure program invests in coordinated campus-level networking and cyberinfrastructure improvements, innovation, integration, and engineering for science applications and distributed research projects. Learning and workforce development in cyberinfrastructure is explicitly addressed in the program. Science-driven requirements are the primary motivation for any proposed activity.

### *Tribal Colleges and Universities Program (TCUP)*

#### **National Science Foundation, Deadline, Oct. 15, 2021**

The TCUP provides awards to federally recognized Tribal Colleges and Universities, Alaska Native-serving institutions, and Native Hawaiian-serving institutions to promote high-quality science, STEM education, research, and outreach. Support is available to TCUP-eligible institutions for transformative capacity-building or community engagement projects through Instructional Capacity Excellence in TCUP Institutions; Targeted STEM Infusion Projects; TCUP for Secondary and Elementary Teachers in STEM; Tribal Colleges and Universities Enterprise Advancement Centers; Cyberinfrastructure Health, Assistance, and Improvements; and Preparing for TCUP Implementation. Collaborations led by TCUP institutions that involve non-TCUP institutions of higher education are supported through TCUP Partnerships, with the participation of other NSF programs to support the work of non-TCUP institutions. Finally, research studies that further the scholarly activity of individual faculty members are supported through Small Grants for Research.

### *Science & Technology for Advanced Manufacturing Projects*

#### **Department of Defense, Office of Naval Research, Deadline, Oct. 30, 2021**

The Department of Defense Manufacturing Technology Program is the Defense Department's investment mechanism for staying at the forefront of defense-essential manufacturing capability. The program develops technologies and processes for the affordable and timely production and sustainment of defense systems. The program impacts all phases of acquisition. It aids in achieving reduced acquisition and total ownership costs by developing, maturing, and transitioning key manufacturing technologies. ONR will focus investments on those that have the most benefit to the warfighter and include quick-hitting, rapid-response projects to address immediate manufacturing needs.

### *FY 2021 American Rescue Plan Act (ARPA) Statewide Planning, Research, and Networks*

#### **Department of Commerce, Deadline, Oct. 31, 2021**

The ARPA Statewide Planning, Research, and Networks Notice of Funding Opportunity (NOFO) is part of the Economic Development Administration's (EDA's) multi-phase effort to respond to the coronavirus pandemic as directed by the American Rescue Plan Act of 2021. Specifically, this NOFO seeks to build regional economies for the future through two primary avenues: a) Statewide Planning and b) Research and Networks. Subject to the availability of funds, awards made under this NOFO will help develop coordinated state-wide plans for economic development and data, tools, and institutional capacity to evaluate and scale evidence-based economic development efforts,

including through communities of practice and provision of technical assistance among existing and new EDA grantees.

### *Professional Formation of Engineers (PFE): Research Initiation in Engineering Formation (RIEF)*

#### **National Science Foundation, Deadline, Nov. 9, 2021**

The PFE: Research Initiation in Engineering Formation (PFE: RIEF) program has two goals: 1) Support research in the Professional Formation of Engineers (PFE), and 2) Increase the community of researchers conducting PFE research. Primary investigators are expected to have little or no experience conducting social science or education research. PFE: RIEF is not intended for established researchers in engineering education or other social science fields to initiate new projects.

### *Louis Stokes Alliances for Minority Participation*

#### **National Science Foundation, Deadline, Nov. 19, 2021**

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 referenced in the 2005 LSAMP program evaluation. The overall goal of the program is to assist universities and colleges in diversifying the nation's science, technology, engineering and mathematics (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. LSAMP's efforts to increase diversity in STEM are aligned with the goals of the Federal Government's five-year strategic plan for STEM education, *Charting a Course for Success: America's Strategy for STEM Education*.

## NETL News



### *NETL Partners Develop a more Resilient Solid Oxide Fuel Cell Component*

Three years into their formal research partnership, NETL and NETL is collaborating with a team of researchers from UES Services Inc., the University of Connecticut and the Pacific Northwest National Laboratory to explore a novel class of advanced materials called high-entropy alloys (HEAs) that have the potential to overcome long-standing technical barriers for the manufacture of more resilient solid oxide fuel cells (SOFCs). SOFCs are devices that can chemically convert the energy of a fuel and oxidant directly into electrical energy. Since they produce electricity through an electrochemical reaction and not through a multi-step (e.g., combustion to heat to generator power) process, they are much more efficient and better for the environment than conventional electric power generation processes. These characteristics make SOFCs uniquely valuable to achieving the U.S. Department of Energy's decarbonization goals.



**Latest Edition of the SSAE Newsletter Released**

The July 2021 edition of the SSAE Newsletter is filled with updates on the latest research activities undertaken by researchers within NETL’s Strategic Systems Analysis and Engineering (SSAE) directorate. Click here for updates about various SSAE initiatives that are providing the decision science and analysis capabilities necessary to evaluate complex energy systems.



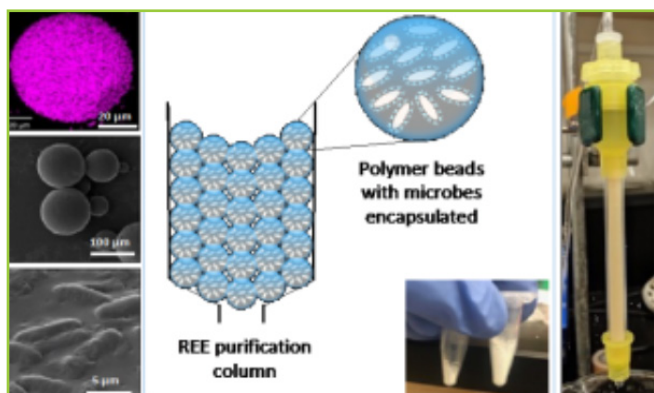
**NETL’s Leadership and Innovations Displayed During 45<sup>th</sup> Clearwater Clean Energy Conference**

The contributions of NETL and its partner organizations toward realizing a clean, decarbonized power sector were detailed throughout the 45<sup>th</sup> Clearwater Clean Energy Conference, held July 26-29 in an all-virtual setting in which NETL associate laboratory director for Research & Innovation Bryan Morreale delivered the keynote address. The Lab took an active role in the conference, with NETL Thermal Science Team supervisor Ronald Breault serving as Clearwater Clean Energy Conference Committee Co-Chair in addition to delivering opening remarks for the event. He was also presented with the Percy Nichols Award for 2020 for notable scientific or industrial achievement in the field of solid fuels. “Ron’s recognition is great for NETL and demonstrates the top-tier scientists and engineers hard at work every day to address our country’s greatest energy challenges,” said Bryan Morreale, NETL associate laboratory director for Research & Innovation.



**NETL Releases Third-Quarter Edition of the Water-Energy Nexus Newsletter**

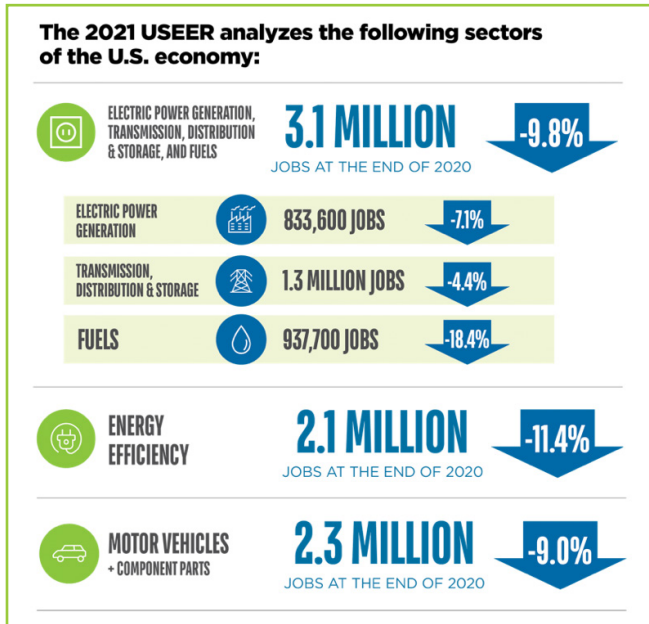
The summer 2021 edition of the Water-Energy Nexus Newsletter is filled with updates concerning NETL’s ongoing water-energy research and related activities. The newsletter highlights the Lab’s recent virtual Water Management Research and Development (R&D) review meeting, which focused on the progress being made on cooperative research and technology developments to reduce water use in energy production. A portfolio of in-house and extramural research projects was discussed, including a presentation by NETL’s Tim Skone and Erik Schuster on the impact of water use from power systems. The review meeting was attended by scientists, engineers and researchers from academia, industry, and the public working in the water-energy space.



**NETL Helps Develop a Rare Earth Element Biosorption Reactor**

The National Energy Technology Laboratory (NETL) is partnering with Lawrence Livermore National Laboratory (LLNL), Duke University and the University of Arizona to develop a reactor that will selectively concentrate rare earth elements (REEs) in an environmentally benign way. REEs are extracted from coal waste and used in various industries—such as energy, defense and medical—to perform vital functions in order for products to function. Making use of this coal waste, to recover REEs will continue to perform clean energy functions and create jobs for workers in coal communities. The U.S. Department of Energy (DOE) and NETL, with partners and collaborators at national laboratories, academia and other industries, are working on projects to develop a domestic supply of these resources, which are abundant in carbon ore and their by-products.

Reports and Resources



*U.S. Energy and Employment Report 2021*

**U.S. Department of Energy**

The U.S. Energy Employment Report (USEER) began in 2016 at the recommendation of the first Department of Energy Quadrennial Energy Review to better track and understand employment within key energy sectors that have been difficult or impossible to follow using other publicly available data sources. The study combines surveys of businesses with public labor data to produce estimates of employment and workforce characteristics. Since 2016, when DOE first began tracking energy employment in the United States, the sector grew more than 6% by the end of 2019, responsible for 8.4 million jobs. Prior to the COVID-19 pandemic, the energy sector had been one of the country's fastest growing job markets. From 2015 to 2019, the annual growth rate for energy employment in the United States was 3%—double compared to 1.5% in the general economy.

*Wages, Benefits, and Change*

**National Association of State Energy Offices & the Energy Futures Initiative**

The *National Association of State Energy Officials*, the *Energy Futures Initiative*, and *BW Research Partnership* are pleased to release *Wages, Benefits, and Change, A Supplemental Report to the Annual U.S. Energy & Employment Report (Wage Report)*. The Wage Report adds new data and analysis to the portfolio of annual U.S. Energy & Employment Reports and the 5-Year Energy & Employment Report. This supplemental report focuses on wages and benefits for U.S. energy jobs, as well as the impacts of COVID-19 on energy sector employment. Hiring is up but gains smaller than May. Across all industries, national hiring in the United States was 3.7% higher in June 2021 compared to last month. This is certainly a step in the right direction, but slower than May's 7.7% gain. National hiring this June was 67.8% higher compared to June 2020.

DOE STEM Rising



*Training Program Boosts Workforce Readiness in Oak Ridge*

A new chapter of cleanup is underway at the Y-12 *National Security Complex* (Y-12) and *Oak Ridge National Laboratory* (ORNL), a massive endeavor requiring EM to maintain its existing workforce while preparing new skilled workers for the challenges ahead. *EM Oak Ridge* cleanup contractor UCOR is ensuring employees are trained to advance cleanup. Most recently, the contractor administered training to workers who will provide radiation protection support to numerous projects in the field.

*Women of Quantum Computing Go Tiny in Big Ways*

A In the Computational Chemistry, Materials, and Climate (CCMC) Group at Lawrence Berkeley National Laboratory (Berkeley Lab), the future of quantum information science is being driven in part by a group of women scientists who see that future — and theirs along with it — as quite bright. Early in their careers and coming from a variety of academic fields, these women comprise more than half of the postdoctoral researchers in the group, a rarity in computing science. But if they have their way, gender parity in their field won't be an oddity much longer.



*Bolingbrook High School students build positive connections with Argonne's collaborative STEM community through the Exemplary Student Research Program (ESRP)*

The U.S. DOE's Argonne National Laboratory is a place where great collaboration happens each day — not only between different areas of STEM research, but also with the numerous students involved in the lab's educational programs. For one of these educational programs, the *ESRP*, Bolingbrook High School has actively participated and created long-lasting partnerships between students, their teacher and the lab's STEM research community.

## 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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