RWFI E-NOTE MONTHLY

REGIONAL WORKFORCE INITIATIVE • SEPTEMBER 2021

Welcome Message

Greetings NETL RWFI stakeholders,

This month's funding in focus is from the American Rescue Plan Act, via the Department of Commerce, Economic Development Agency. The *Build Back Better Regional Challenge* aims to assist communities and regions impacted by the coronavirus pandemic. In the reports and resources section you will find a report entitled *Energy Sector Workforce Diversity, Access, Inclusion, and the Policy Case for Investment* by the National Association of State Energy Offices. This report examines ways in which State Energy Offices can work with partners in academia and the private sector to advance diversity, access, and inclusion in energy careers. And finally, a new program from DOE has been announced that will target 24-36 communities to create Local Energy Action Plans providing technical assistance and funding to create plans for jobs, workforce and economic development involved in clean energy transitions. More information can be found in the Special Announcement section of this month's E-note.

With this September version of the E-note and moving forward, we have altered the distribution of the E-Note slightly, so as to be able to deliver it towards the middle of each month. 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.

Attached to this email is a hyperlinked PDF version of this note. If you would like to unsubscribe, please reply "unsubscribe" to this email.

– Sincerely, The NETL RWFI TEAM

Special Announcement: Local Energy Action Program

On September 15, Secretary Granholm introduced Communities LEAP (Local Energy Action Program) – a new pilot initiative that will help environmental justice and fossil fuel communities develop actions plans to transition to a clean energy future. This program will award up to $16 million in technical assistance to help 24 – 36 communities across the country realize different clean energy oriented economic development pathways. Plans will emphasize energy jobs and workforce skills, and promote minority-owned and small- to mid-size businesses wherever possible. Communities LEAP is offered jointly by DOE's Offices of Energy Efficiency and Renewable Energy, Electricity, Policy, Fossil Energy and Carbon Management, and Economic Impact and Diversity. More information is available on the Communities LEAP website: *https://www.energy.gov/communitiesLEAP.*

Additionally, DOE will be hosting an informational webinar on Communities LEAP for the public on September 28th at 3:30PM EST. Registration for the webinar can be found here: *https://www.zoomgov.com/webinar/register/WN_FHq4LbcHShm-_ySJMJ0E1A*

Workforce Funding Announcements

FUNDING SPOTLIGHT

FY21 American Rescue Plan Act (ARPA) Build Back Better Regional Challenge (BBBRC)

Economic Development Agency, Deadline, Oct. 19, 2021

Through this ARPA BBRC Notice of Funding Opportunity (NOFO), the Economic Development Administration (EDA) aims to assist communities and regions impacted by the coronavirus pandemic. The coronavirus pandemic has caused, and continues to cause, economic injury to U.S. communities and regions in devastating and unprecedented ways. This ARPA BBBRC NOFO is designed as a two-phase competition to 1) help regions develop transformational economic development strategies, and 2) fund the implementation of those strategies that will create and stimulate regional growth clusters. Such efforts will help regional economies recover from the pandemic and build economic diversity and resiliency to mitigate impacts during any future economic challenges.

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 rural areas, as well as rural electric cooperatives, can also apply. To be eligible, applicants must be individuals or entities at least 51 percent 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, American Samoa, or who are legally admitted permanent residents in the United States. The project must include conducting a feasibility study for a renewable energy system. Eligible technologies include projects that produce energy from wind, solar,

biomass, geothermal, hydro power or hydrogen-based sources. All projects must be located in rural areas 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.*

FY22 Brownfields Job Training Grants

Environmental Protection Agency, Deadline, Oct. 5, 2021

This notice announces the availability of funds and solicits applications from eligible entities, including nonprofit organizations, to deliver Brownfields Job Training programs that recruit, train, and place local, unemployed, and under-employed residents with the skills needed to secure full-time employment in the environmental field. While Brownfields Job Training Grants require training in brownfield assessment and/or cleanup activities, these grants also require that Hazardous Waste Operations and Emergency Response training be provided to all individuals being trained. EPA encourages applicants to develop their curricula based on local labor market assessments and employers' hiring needs, while also delivering comprehensive training that results in graduates securing multiple certifications.

Science and Technology Projects Related to Coal Mining and Reclamation; Applied Science Projects

Department of Interior, Deadline, Oct. 7, 2021

The United States Department of the Interior, Office of Surface Mining Reclamation and Enforcement (OSMRE) is requesting Applied Science proposals for projects that develop and demonstrate improved science and technologies related to the mining of coal and the reclamation of the land after mining. Funded projects will help address important OSMRE issues related to implementation of the Surface Mining Control and Reclamation Act. Applicants may request funding up to $200,000. The award will be by cooperative agreement (or as an interagency agreement if another federal agency is involved). Each cooperative agreement will be for a period of time consistent with the proposal but not to exceed two years from date of award. Each cooperative agreement grantee may apply for and be granted non-funded extensions of time only as necessary to complete the project. OSMRE will only grant extensions if the delays are beyond the control of the principal investigator (PI). Included in this document are instructions for preparing the proposal including a list of eligible issues and a description of the proposal review process. OSMRE will only accept proposals that address the specific list of eligible issues.

Directorate for Education and Human Resources (EHR) Core Research

National Science Foundation, Deadline, Oct. 7, 2021

The EHR Core Research (ECR:Core) program offers this ECR:Core solicitation and invites proposals for fundamental research (curiosity-driven basic research and use-inspired basic research) that contributes to the general, explanatory knowledge that underlies STEM education in one or more of the three broadly conceived Research Areas: Research on Stem Learning and Learning Environments, Research on Broadening Participation in STEM fields, and Research on STEM Workforce Development. Within this framework, the ECR program supports a wide range of fundamental STEM education research activities which are aimed at learners of all groups and ages in formal and informal settings.

FY21 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.

Racial Equity in STEM Education

National Science Foundation, Deadline, Oct. 12, 2021

Persistent racial injustices and inequalities in the United States have led to renewed concern and interest in addressing systemic racism. The National Science Foundation (NSF) EHR seeks to support bold, ground-breaking, and potentially transformative projects addressing systemic racism in STEM. Proposals should advance racial equity in STEM education and workforce development through research (both fundamental and applied) and practice.

FY21 STEM Talent Challenge Program

Economic Development Agency, Deadline, Oct. 12, 2021

EDA is seeking applications from eligible applicants to create and implement innovative STEM apprenticeship models that complement their respective region's innovation economy. The STEM Talent Challenge seeks to develop or expand regional workforce capacity to

support high-growth, high-wage entrepreneurial ventures, industries of the future (which usually includes industries that leverage emerging technologies), and other innovation-driven businesses that have a high likelihood of accelerating economic competitiveness and job creation in their respective regions and throughout the United States.

Advanced Technological Education (ATE)

National Science Foundation, Deadline, Oct. 14, 2021

With a focus on two-year Institutions of Higher Education (IHEs), the 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.

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.

FY21 ARPA Statewide Planning, Research, and Networks

Department of Commerce, Deadline, Oct. 31, 2021

The ARPA Statewide Planning, Research, and Networks NOFO is part of 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.

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

National Science Foundation, Deadline, Nov. 9, 2021

The PFE: RIEF program has two goals: 1) Support research in the PFE, and 2) Increase the community of researchers conducting PFE research. PIs 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 (LSAMP)

National Science Foundation, Deadline, Nov. 5, 2021

The 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 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, found here.

NETL News

Talent Blossoms When NETL Research Associates, Mentors Team Up

This quarter's Research Associate Spotlight and Mentor Profile illustrates how pairing an experienced NETL researcher with an up-and-coming scientist can open new roads to discovery and facilitate faster technology development at lower cost. Research associate Fei Xue, a participant in the NETL Post Graduate Research Program administered by the Oak Ridge Institute for Science and Education,

explains how working with his mentor, Youhai Wen, and interacting with other NETL experts using the Lab's Joule 2.0 supercomputer is advancing important research in the field of computational science and engineering. Through science-based simulations, multiscale modeling and data analytics, Xue is making meaningful contributions to NETL's efforts to analyze and predict performance of materials used in a diverse set of energy research projects while accelerating development of clean energy technologies.

NETL Achieves Technological Milestones in REE Supply Chain Research

NETL's Research & Innovation Center's (RIC) work to develop domestic supply chains of CMs and REEs from unconventional sources such as carbon ore ash, acid mine drainage and other sources has resulted in several milestones in technological applications of sensors and geoscience. REE's are essential to the energy, defense, medical and consumer technology manufacturing industries. Supply and access to those elements are critical for the U.S. economy. However, a majority of the world's REE sources are controlled by other countries, which is why NETL is pursuing alternative sources closer to home. The RIC has identified the United States' rich deposits of carbon ore, along with acid mine drainage from prior and current mining operations, as potential sources of REEs and other critical minerals. In collaboration with partners in academia and industry across the country, RIC has had three goals throughout its research efforts: 1) develop methods to locate promising unconventional CM reserves; 2) develop and test technologies to extract and concentrate CMs from carbon ore sources, with a focus on environmentally beneficial pathways that address legacy energy production impacts or reduce waste; and 3) increase the potential for technology commercialization through the use of modeling and analysis for rapid process optimization and scale-up, identifying process bottlenecks and guiding commercialization efforts.

NETL Innovation Primed to Reduce Nation's Reliance on Foreign Supplies of Critical Minerals

NETL's Mary Anne Alvin sees a brighter future ahead for the nation's energy communities that have powered the nation for more than a century as the U.S. undergoes a historic transformation to clean energy. Alvin's optimism is rooted in the fact that residual and waste byproducts, such as power plant ash and acid mine drainage, are prime sources to obtain REEs and CMs. These vital materials can be used to manufacture consumer products such as smartphones, batteries for hybrid and electric vehicles, computer monitors and hard drives, high-performance optics and lasers, powerful magnets and components for defense systems. REEs and CMs from those sources also are needed to produce key components for windmills, solar panels and other green energy equipment to achieve the Biden Administration's goal of a net-zero carbon emission electricity sector by 2035 and the broader economy by 2050.

DOE Invests Nearly $1M for Projects to Create A Sustainable Supply Chain of Critical Minerals

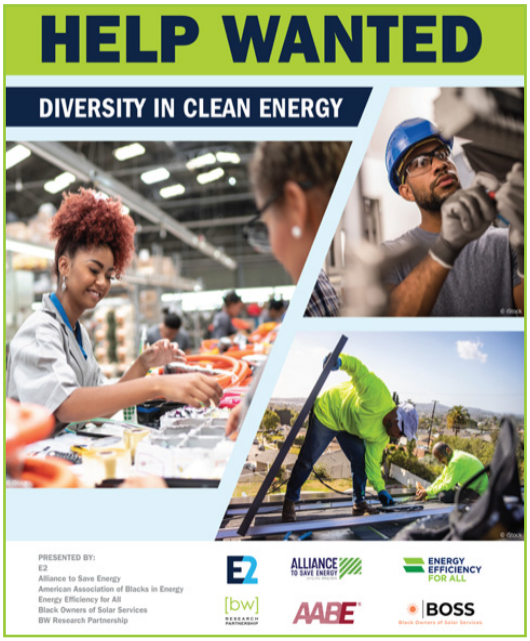
The U.S. DOE's Office of Fossil Energy and Carbon Management announced the selection of six projects to receive a total of nearly $1M in federal funding for cost-shared research and development (R&D) under funding opportunity announcement 2404, Advanced Processing of Rare Earth Elements and Critical Minerals for Industrial and Manufacturing Applications. CMs are necessary to manufacture high-tech devices, especially technologies for national defense applications and green growth-related industries. However, the United States does not domestically produce fourteen of these CMs and imports more than 50 percent of many others. This dearth of domestic production leaves the nation dependent on imports to meet its demand. CMs include REEs, which are used to manufacture cell phones, LED screens, solar panels, energy infrastructure, defense technologies and other essential high-tech applications. The United States imports 80 percent of its REEs from China, with portions of the remainder indirectly sourced from China through other countries.

Reports and Resources

Energy Sector Workforce Diversity, Access, Inclusion, and the Policy Case for Investment

National Association of State Energy Offices

The National Association of State Energy Offices has released a new report examining ways State Energy Offices can work with partners in academia and the private sector to advance diversity, access, and inclusion in energy careers. Drawing on program and policy examples from State Energy Offices across the country, *Energy Sector Workforce Diversity, Access, Inclusion, and the Policy Case for Investment: Recommendations for State Energy Office Action* finds that a diverse, qualified, and supported workforce is important in achieving state energy, economic development, and climate goals. Additionally, a diverse workforce is critical to reaching historically underserved markets.



Help Wanted: Diversity in Clean Energy

E2 Business Leaders for a Better Environment, Stronger Economy

About 61 percent of clean energy workers across the United States are white non-Hispanics. Black and Hispanic/Latino workers are more poorly represented in clean energy than they are across the rest of the economy, with Black people composing 8 percent of the clean energy workforce (compared with 13 percent economy-wide) and Hispanic/Latinos making up 16.5 percent (versus 18 percent economy-wide). Women represent less than 30 percent of all workers in the sector despite accounting for nearly half (48 percent) of the U.S. labor force as a whole.

U.S. Energy and Employment Report (USEER) 2021

U.S. Department of Energy

The 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 to 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 six percent by the end of 2019, responsible for 8.4 million jobs. Prior to the coronavirus 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.

DOE STEM Rising

Northern New Mexico Math Teachers Earn New Specialty Degree

This fall, six Northern New Mexico teachers are returning to their classrooms and raising the bar for K–8 math teaching at public schools in Abiquiu, Cuba, Los Alamos, and Pojoaque. Richard Armentrout, Travis Gibson, April Grant–Torrez, Brett Hawkins, Daniela Romero, and Beth Ziomek comprise the first-ever cohort to graduate with the new master's degree in Educational Leadership with an Emphasis in K-8 Mathematics Teacher Leadership from New Mexico Highlands University. The degree is a collaboration between the teachers, the university, and the Math & Science Academy at Los Alamos National Laboratory, a professional-development program supporting the teaching of math and science in the region.

The Office of Energy Efficiency and Renewable Energy Celebrates STEMtember

Under the Biden-Harris administration's climate goals, renewable energy will power a carbon-free economy by 2050 — but to realize that vision, the U.S. needs to accelerate its development and deployment of clean energy technologies. To expand the U.S. energy portfolio and ensure continued leadership as innovators in the race for clean energy solutions, the country must maintain focus and investment in STEM as a vital national priority. Students and professionals from STEM fields are at the forefront of making a clean energy future a reality. An emerging generation of scientists, technicians, engineers, and mathematicians will take the reins in combatting the climate crisis by advancing clean energy technologies and reimagining more sustainable ways of powering a modern society.

Princeton Plasma Physics Laboratory (PPPL) Physicist Erik Gilson Joins Secretary of Energy in Panel Discussion on DOE Internships

Science Undergraduate Laboratory Internships and Community College Internships students at the U.S. DOE's PPPL and other national laboratories are taking part in a crucial program that will shape their future careers and give them skills that will help them solve the critical scientific challenges the world faces.

Katie Sautter: Building Materials for a Quantum Future

Katie Sautter is an architect of exquisite, invisible structures. Built one atomic layer at a time, her team's atomically engineered samples are the starting points for new materials that could one day enable a *quantum network*. A postdoctoral researcher at the U.S. DOE's Argonne National Laboratory, Sautter researches quantum materials as part of *Q-NEXT*, a DOE National Quantum Information Science Research Center established in 2020.

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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