

# RWFI E-NOTE MONTHLY

REGIONAL WORKFORCE INITIATIVE • APRIL 2021

## Welcome Message

Greetings NETL RWFI stakeholders,

This month's funding in focus is from the U.S. Economic Development Agency (EDA) announcing a call for applications to its *University Center Competition*. The purpose of EDA's University Center Economic Development program (also referred to in this announcement as the University Center program) is to enable institutions of higher education and consortia of institutions of higher education to establish and operate University Centers specifically focused on using their assets to build regional economic ecosystems that support innovation and high-growth entrepreneurship. In NETL news, the Director of NETL, Dr. Brian Anderson, has been named Executive Director of the Biden Administration's Interagency Working Group (IWG) on Coal and Power Plant Communities and Economic Revitalization. The IWG was established by Executive Order 14008, Sec. 218 on January 27, 2021, to ensure the shift to a clean energy economy creates well-paid union jobs; spurs economic revitalization; remediates environmental degradation; and supports energy workers in coal, oil and gas and power plant communities across the country. The report can be found in the Reports and Resources section of this month's E-note or by [clicking here](#).

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 E-notes.

– Sincerely, The NETL Regional Workforce Initiative Team

## Workforce Funding Announcements

FUNDING SPOTLIGHT



### *FY21 Economic Development Agency (EDA) University Center Competition*

U.S. Economic Development Agency, Deadline June 4, 2021

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regional economic ecosystems that support innovation and high-growth entrepreneurship. University Centers collaborate with other EDA partners by providing expertise and technical assistance to develop, implement and support regional strategies which result in job creation, high-skilled regional talent pools, and business expansion in a region's innovation clusters. Expertise and technical assistance may address, for example, applied research centers, technology commercialization, feasibility studies, market research, economic impact analyses training, and other technical assistance to help communities foster vibrant economic ecosystems. Since FY04, EDA has administered the University Center program as a competitive multiyear program. In FY21, EDA is holding the competition in its Chicago and Philadelphia Regional Offices.

### *Environmental Convergence Opportunities in Chemical, Bioengineering, Environmental, and Transport (CBET) Systems*

National Science Foundation, Deadline, May 7, 2021

Teams should be constructed such that expertise is both complementary and distinct, drawing inspiration from the Chemical, Bioengineering, Environmental, and Transport (CBET) Systems supported research communities. Creative collaborations between research communities that do not typically intersect are highly encouraged. At least three named investigators must be identified, each of whom must possess a unique perspective or skillset that motivates the proposed approach(es). Teams may also wish to consider other sciences (especially social, behavioral, and economic sciences) to extend the impact of the work. While this solicitation is not restricted to a specific environmental engineering and sustainability research topic, the current solicitation emphasizes research topics related to to: 1) greenhouse gas mitigation; 2) managing the nitrogen cycle; and 3) sustainable water purification and resource recovery systems. Assuming sufficient funding is provided in the National Science foundation (NSF) budget, it is anticipated this competition will continue annually. Research topic priorities are subject to change in subsequent years. Awards are expected to range from \$1.5M and \$1.7M over four years. Budgets should be commensurate with the scope of the proposed research.

### *Future Manufacturing*

National Science Foundation, Deadline, May 14, 2021

The goal of Future Manufacturing is to support fundamental research and education of a future workforce to overcome scientific, technological, educational, economic, and social barriers in order to enable new manufacturing capabilities that do not exist today. Future Manufacturing will require major advances in technologies and algorithms for the synthesis and production of new materials,

chemicals, devices, components, and systems of assured quality with high yield at reasonable cost. It will require new advances in artificial intelligence and machine learning, new cyber infrastructure, new approaches for mathematical and computational modeling, new dynamics and control methodologies, new ways to integrate systems biology, synthetic biology and bioprocessing, and new ways to influence the economy, workforce, human behavior, and society. Future Manufacturing requires creative convergence approaches in science, technology and innovation, empirical validation, and education and workforce development to address pressing challenges for manufacturing. There is only one track for Future Manufacturing Research Grants (FMRG) with a maximum award amount of \$3M over four years.

### *Department of Energy (DOE) Traineeship in Accelerator Science and Engineering*

#### **U.S. Department of Energy, Deadline, May 27, 2021**

The DOE Office of Science (SC) program in High Energy Physics (HEP) announced its interest in receiving applications for the DOE Traineeship in Accelerator Science and Engineering, which provides support to address critical, targeted workforce development in fields of interest to the DOE mission. Up to two cooperative agreements may be awarded to provide funding to universities or consortia of universities to support tuition, stipend, and travel costs for students enrolled in specific accelerator science and engineering degree programs and to provide modest support for curriculum development and program administration support. Award terms are expected to be up to five years, with the possibility of renewal for a second term. This program does not support generalized lines of research and development (R&D) separated from educational and developmental efforts; the purpose of awards resulting from this finding opportunity announcement (FOA) must be for education and training, which may be conducted through research. Support for accelerator R&D is provided through the HEP General Accelerator R&D and the Accelerator R&D and Production Accelerator Stewardship programs, through accelerator R&D programs elsewhere in DOE, and by other federal agencies.

### *Louis Stokes Alliances for Minority Participation (LSAMP) Program*

#### **National Science Foundation, Deadline, June 1, 2021**

This alliance-based 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 the following underrepresented populations: 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*.

### *Industry-University Cooperative Research Centers (IUCRC) Program*

#### **National Science Foundation, Deadline, June 9, 2021**

The IUCRC program catalyzes breakthrough pre-competitive research by enabling close and sustained engagement between industry innovators, world-class academic teams, and government agencies. IUCRCs help industry partners and government agencies connect directly and efficiently with university researchers to achieve three primary objectives: 1) conduct high-impact research to meet shared and critical industrial needs in companies of all sizes; 2) enhance U.S. global leadership in driving innovative technology development; and 3) identify, mentor, and develop a diverse, highly skilled science and engineering workforce.

### *Traineeship in Isotope Research & Development and Production*

#### **U.S. Department of Energy, Deadline, June 14, 2021**

The DOE SC program in Isotope R&D and Production announced its interest in receiving applications from domestic entities seeking to assist in coordinating and supporting the nationwide DOE Traineeship in Isotope R&D and Production. This pilot program is intended to provide support for participants from domestic institutions and is envisioned to support training and research and/or production experiences for students pursuing undergraduate and graduate level degrees in fields related to isotope science to develop the next generation workforce in isotope production and processing.

### *Defense Manufacturing Communities Support Program*

#### **U.S. Department of Defense, June 15, 2021**

The Defense Manufacturing Community Support program, authorized under Section 846 of the FY19 National Defense Authorization Act (PL 115-232), is designed to undertake long-term investments in critical skills, facilities, research and development, and small business support in order to strengthen the national security innovation and manufacturing base. The program also seeks to ensure complementarity of those communities so designated with existing Defense Manufacturing Institutes. Defense Manufacturing Institutes are manufacturing ecosystems established since 2014, with common manufacturing and design challenges revolving around specific technologies. To date, the Department of Defense has established nine Manufacturing Institutes, listed [here](#). (For complete roster of all existing manufacturing institutes, see [this link](#).)

### *Agriculture and Food Research Initiative Competitive Grants Program Education and Workforce Development (EWD) Program*

#### **U.S. Department of Agriculture, Deadline, July 1, 2021**

The Agriculture and Food Research Initiative Education and Workforce Development program focuses on developing the next generation of research, education, and extension professionals in the food and agricultural sciences. In FY21, EWD invites applications in five areas: professional development for agricultural literacy, training of undergraduate students in research and extension, fellowships for predoctoral candidates, fellowships for postdoctoral scholars, and a brand-new program for agricultural workforce training.

*Improving Undergraduate STEM Education: Education and Human Resources (IUSE: EHR)*

**National Science Foundation, Deadline, July 21, 2021**

The IUSE: EHR is a core NSF STEM education program that seeks to promote novel, creative, and transformative approaches to generating and using new knowledge about STEM teaching and learning to improve STEM education for undergraduate students. The program is open to application from all U.S. institutions of higher education and associated organizations. NSF places high value on educating students to be leaders and innovators in emerging and rapidly changing STEM fields as well as educating a scientifically literate public. In pursuit of this goal, IUSE: EHR supports projects that seek to bring recent advances in STEM knowledge into undergraduate education that adapt, improve, and incorporate evidence-based practices into STEM teaching and learning, and that lay the groundwork for institutional improvement in STEM education. In addition to innovative work at the frontier of STEM education, this program also encourages replication of research studies at different types of institutions and with different student bodies to produce deeper knowledge about the effectiveness and transferability of findings.

*Workforce Opportunity for Rural Communities (WORC)*

**U.S. Department of Labor, Deadline, July 21, 2021**

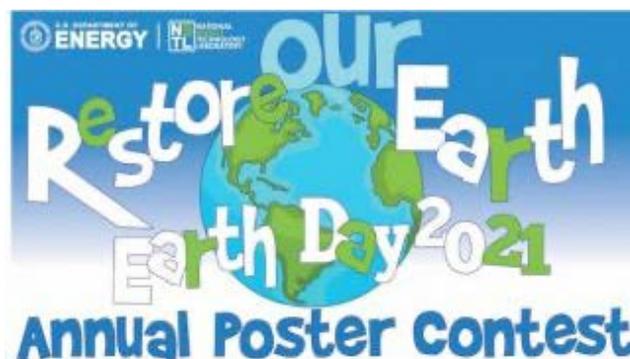
This announcement solicits applications for the WORC Initiative for grants serving the Appalachian and Delta regions. The purpose of this program is to demonstrate the alignment of regionally driven, comprehensive approaches to addressing economic distress and the necessary workforce development activities to ensure dislocated and other workers in the regions are capable of succeeding in current and future job opportunities. Successful long-term economic growth strategies build upon bottom-up, community-led plans that promote economic resilience and maximize regional strengths. The WORC Initiative grants take a long-term view toward assisting eligible communities, including those energy communities that currently or historically have had a high concentration of employment in energy extraction and related industries, in diversifying their economies by investing in developing a skilled workforce through training and other approaches that aligns with local strategies developed by regional partners. This long-term view also acknowledges the impact of the opioid crisis and the significant challenges it presents to a community's workforce. To address these challenges, the Employment and Training Administration encourages applicants to include within their applications strategies to address the employment and training needs of individuals affected by substance use disorder in their communities.

**NETL News**



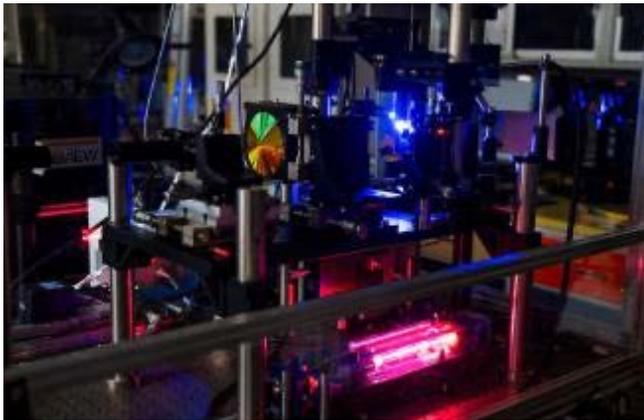
*NETL's Brian Anderson to Lead Federal Effort to Revitalize Coal and Power Plant Economies*

NETL Director Brian Anderson, Ph.D., has been named Executive Director of the Biden Administration's Interagency Working Group (IWG) on Coal and Power Plant Communities and Economic Revitalization. The IWG was established by Executive Order 14008, Sec. 218 on Jan. 27, 2021, to ensure the shift to a clean energy economy creates good-paying union jobs, spurs economic revitalization, remediates environmental degradation, and supports energy workers in coal, oil and gas and power plant communities across the country. Recently, the IWG prepared an initial report that includes recommendations to catalyze robust economic activity and support workers in America's energy sector. NETL supported the drafting of the report through energy sector analysis and as Secretariat for the IWG.



*NETL Announces Winners of Annual Earth Day Poster Contest*

At NETL, maintaining responsible stewardship of the environment is crucial to the lab's mission of driving innovation and delivering solutions for an environmentally sustainable energy future. Earth Day, celebrated annually on April 22 since 1970, aligns closely with NETL's vision while emphasizing the importance of recycling, conserving energy and improving air and water quality. Every year, NETL hosts an annual poster contest encouraging elementary students enrolled at schools near NETL's sites in Albany, Oregon; Morgantown, West Virginia; and Pittsburgh, Pennsylvania, to showcase their favorite ways to protect the environment. This year, students were asked to design their posters around the theme, "Restore Our Earth," in recognition of this planet-centric day. We have shared the first-, second-, third- and fourth-place winning entries at each grade level here.



**University of Pittsburgh Collaboration Supports Energy Innovation at NETL for More Than a Decade**

NETL amplifies the impacts of its nationally recognized technical competencies through collaboration with a variety of organizations, including university partnerships crucial to early-stage development of energy technologies that will lead the nation to a net-zero carbon emissions economy by 2050. One prime example of these valuable partnership efforts is the work of an ongoing collaborative research team comprising NETL and University of Pittsburgh researchers who have developed and commercialized sensor technologies, won multiple Carnegie Science Awards, produced more than a dozen patents and pending patents, advanced the understanding of energy production through high-impact research papers, and most recently, applied a first-of-its-kind distributive sensing method to solid oxide fuel cells — a promising clean energy technology.



**NETL Expert Outlines Shifts in the Power Plant Workforce Landscape and Offers Path Forward**

As part of the ongoing POWERGEN+ series of presentations, NETL's Tom Sarkus provided an in-depth look at how the power plant workforce will change in both the near- and long-term, as markets shift toward renewables, new technologies and operations emerge and workplace demographics and expectations evolve. "The new Administration is committed to both decarbonization goals as well as workforce development for areas that have been hard hit by declining industries," Sarkus said. "Large-scale renewables projects have now leveled cost of energy at or below fossil energy marginal costs, and we are seeing many states setting bold renewable energy goals. All of this points toward a paradigm shift in the power plant workforce that we can leverage for maximum benefits."



**DOE to Invest \$6M Putting Coal Waste to Work Creating Products for the Clean Energy Economy**

The DOE's Office of Fossil Energy has announced \$6M in federal funding for cost-shared research and development projects under the FOA DE-FOA-0002405, *Advanced Coal Waste Processing: Production of Coal-Enhanced Filaments or Resins for Advanced Manufacturing and Research and Development of Coal-Derived Graphite*. In a shifting energy generation paradigm, innovation is needed to extract the full economic value from coal waste. The Advanced Coal Processing program at NETL seeks to address this challenge by supporting novel technologies to produce valuable products from coal waste-derived sources through laboratory- and pilot-scale R&D.



**NETL and Appalachian Regional Commission (ARC) Kick Off Program to Create the Next Generation of Welders**

NETL leaders participated in the recent kickoff meeting of the Advanced Welding Workforce Initiative to discuss how the new program will provide workers with needed technical skills to fill good-paying jobs in the energy sector and emerging industries across Appalachia. "The need for welders with advanced technical skills is critical to operate and service tomorrow's highly efficient power plants and support the region's growing automotive, aerospace and aviation industries," said NETL Director Brian Anderson, who provided opening remarks for the virtual meeting held April 13, 2021. "NETL is proud to partner with the ARC to support an initiative that will not only create needed employment opportunities but will also establish a reliable pipeline of welders critical to the U.S. economy," said Anderson.

## Reports and Resources



### *Fact Sheet: Biden Administration Outlines Key Resources to Invest in Coal and Power Plant Community Economic Revitalization*

The *White House IWG on Coal and Power Plant Communities and Economic Revitalization* released a *report* that was delivered to President Biden and included the initial recommendations from the IWG to catalyze economic revitalization, create good-paying, union jobs, and support workers in energy communities — hard-hit coal, oil and gas, and power plant communities — across the country.

The IWG identified nearly \$38B in existing federal funding that could be accessed by energy communities for infrastructure, environmental remediation, union job creation, and community revitalization efforts. This funding includes the *over \$260M in existing resources already mobilized by the Department of the Interior* to support abandoned mine land reclamation, predominantly in Appalachia. This funding will be bolstered by the historic investment in energy communities proposed by President Biden's *American Jobs Plan*.

### *LinkedIn March 2021 Workforce Report*

The LinkedIn Workforce Report is a monthly report on employment trends in the U.S. workforce. It is divided into two sections: 1) a national section that provides insights into hiring, skills gaps, and migration trends across the country; and 2) a city section that provides insights into localized employment trends in 20 of the largest U.S. metro areas.

#### **Key Insights**

- While the U.S. hasn't quite reversed the declines seen in December and January, experts are continuing to see an uptick in hiring across industries. Most notably, data shows nine industries now have hiring rates above pre-COVID levels. This is the most recovery seen to date. Software and information technology services (+8.5%) tops our list of largest year over year gains, with transportation and logistics (+5.9) and wellness and fitness (+5.8) rounding out the top three.
- There is strong hiring in two cities, Miami and Atlanta, both of which have surpassed their hiring levels pre-COVID. Miami has seen a 1.9% increase in hiring over the last year and Atlanta has seen a 0.2% increase in our year-over-year data. Since last month, all but one city has seen an increase in hiring (Austin, -2%), with Atlanta and Los Angeles seeing the greatest increases at +10.1% and +9.9% respectively.

- Meanwhile, traditional knowledge hubs like San Francisco and New York City are recovering. San Francisco continued to expand hiring during the winter months even as national hiring contracted. Since last month, San Francisco has increased hiring +5.8%, and New York City increased hiring by 6.3%.
- Vulnerabilities (such as the impact of Texas' infrastructure implosion during the third week of February 2021) also appeared to impact hiring trends in the three Texas cities (Austin, Dallas, Houston), which had the weakest hiring gains in February in comparison to top 20 cities analyzed.

## DOE STEM Rising



### *Regional Science Bowl Tests Knowledge and Adaptability*

The anticipation was intense. Redmond High School Team 1 had just finished the final round of what had been a full Saturday of solving perplexing science and math problems. The team showcased their expansive knowledge during the final round, but had it been enough to emerge from the competition at the top? After several nerve-racking minutes, the team learned their performance had, in fact, been enough. Redmond High School Team 1 narrowly defeated Tesla STEM High School Team 1 with a score of 114-112 to win the 2021 U.S. DOE Pacific Northwest Regional Science Bowl, hosted by Pacific Northwest National Laboratory.

### *DOE Announces \$109.5 Million to Support Jobs and Economic Growth in Coal and Power Plant Communities*

In connection with a *White House report* on economic revitalization in coal and power plant communities, the DOE today announced \$109M in funding for projects that directly support job creation in communities impacted by changes in the energy economy — the first results of a government-wide initiative launched by President Biden in the first week of his administration to boost the economic potential of coal and power plant communities. The White House IWG on Coal and Power Plant Communities and Economic Revitalization, housed within DOE, also selected a new Executive Director to spearhead interagency efforts.

## 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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