

RWFI E-NOTE MONTHLY

REGIONAL WORKFORCE INITIATIVE • NOVEMBER 2018

Welcome Message

Greetings NETL RWFI stakeholders,

This month's RWFI E-Note contains information about several new funding opportunities from the National Science Foundation (NSF), and the Department of State. In several new NSF funding announcements, applicants are being asked to utilize STEM education and workforce data and to come up with big ideas on how to train and educate the future STEM workforce. In NETL News, you can learn more about the new Director of NETL as well as a notice of intent for a funding opportunity for universities to conduct early stage R&D in early stage combustion turbine research.

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



Improving Undergraduate STEM Education: Education and Human Resources

National Science Foundation, **Deadline: December 11, 2018**

The program is open to application from all 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 populace. In pursuit of this goal, improving Undergraduate STEM Education: Education and Human Resources (IUSE: EHR) supports projects that have the potential to improve student learning in STEM through development of new curricular materials and methods of instruction, and development of new assessment tools to measure student learning. In addition to innovative work at the frontier of STEM education, this program also encourages replications of research studies at different types of institutions and with different student bodies to produce deeper knowledge about the

effectiveness and transferability of findings. IUSE: EHR also seeks to support projects that have high potential for broader societal impacts, including improved diversity of students and instructors participating in STEM education, professional development for instructors to ensure adoption of new and effective pedagogical techniques that meet the changing needs of students, and projects that promote institutional partnerships for collaborative research and development.

Alliances for Graduate Education and the Professoriate

National Science Foundation, **Deadline: December 14, 2018**

The Alliances for Graduate Education and the Professoriate (AGEP) program seeks to advance knowledge about models to improve pathways to the professoriate and success for historically underrepresented minority doctoral students, postdoctoral fellows and faculty, particularly African Americans, Hispanic Americans, American Indians, Alaska Natives, Native Hawaiians, and Native Pacific Islanders, in specific STEM disciplines and/or STEM education research fields. New and innovative models are encouraged, as are models that reproduce and/or replicate existing evidence-based alliances in significantly different disciplines, institutions, and participant cohorts. The AGEP program goal is to increase the number of historically underrepresented minority faculty, in specific STEM disciplines and STEM education research fields, by advancing knowledge about pathways to career success.

Industry-University Cooperative Research Centers Program

National Science Foundation, **Deadline: December 19, 2018**

The Industry-University Cooperative Research Centers (IUCRC) program develops long-term partnerships among industry, academe, and government. The Centers are catalyzed by an investment from NSF and are primarily supported by industry Center members, with NSF taking a supporting role in the development and evolution of the Center. Each Center is established to conduct research that is of interest to both the industry members and the Center faculty. An IUCRC contributes to the nation's research infrastructure base and enhances the intellectual capacity of the engineering and science workforce through the integration of research and education. As appropriate, an IUCRC uses international collaborations to advance these goals within the global context.

ADVANCE: Organizational Change for Equity in STEM Academic Professions

National Science Foundation, **Deadline: January 9, 2019**

The ADVANCE program is designed to foster gender equity through a focus on the identification and elimination of organizational barriers that impede the full participation and advancement of all women faculty in academic institutions. Organizational barriers that inhibit equity may exist in areas such as policy, practice, culture, and organizational climate. Despite significant increases in the proportion of women pursuing STEM doctoral degrees, women are significantly underrepresented as faculty, particularly in upper ranks, and in academic administrative positions, in almost all STEM fields. The problems of recruitment, retention, and advancement that are the causes of this underrepresentation vary by discipline and across groups of women faculty (e.g., by race/ethnicity, disability status, sexual orientation, foreign-born and foreign-trained status, and faculty appointment type).

FY 2019 Community College Initiative (CCI) Program

U.S. Department of State, **Deadline: January 11, 2019**

The Office of Global Educational Programs of the Bureau of Educational and Cultural Affairs (ECA) of the U.S. Department of State announces an open competition for the CCI Program. ECA is seeking proposal submissions for one cooperative agreement to design, implement, and oversee the CCI Program. The CCI Program provides international participants from underserved and underrepresented communities with an intensive academic-year long program at accredited U.S. community colleges, focused on building technical and professional skills while deepening participants' understanding of the United States, its people and values.

FY 2019 Study of the U.S. Institutes for Scholars

U.S. Department of State, **Deadline: January 11, 2019**

This study of the U.S. Branch of the Office of Academic Exchange Programs, ECA, invites proposal submissions from accredited U.S. post-secondary education institutions (community colleges, liberal arts colleges, public and private universities) and other U.S. public and private non-profit organizations meeting the provisions described in Internal Revenue Code section 26 USC 501(c)(3) to design and implement four Studies of the U.S. Institutes for Scholars, pending the availability of FY 2019 funds.

Research on the Science and Technology Enterprise: Statistics and Surveys — R&D, U.S. Science and Technology (S&T) Competitiveness, STEM Education, S&T Workforce

National Science Foundation, **Deadline: January 15, 2019**

The National Center for Science and Engineering Statistics (NCSES) of the NSF is one of the thirteen principal federal statistical agencies within the United States. It is responsible for the collection, acquisition, analysis, reporting and dissemination of objective, statistical data related to the science and engineering enterprise in the United States and other nations that is relevant and useful to practitioners, researchers, policymakers and the public. NCSES uses this information to prepare a number of statistical data reports as well as analytical reports including the National Science Board's biennial report, Science and Engineering Indicators, and Women, Minorities and Persons with Disabilities in Science and Engineering. The Center would like to enhance its efforts to support analytic and methodological research in support of its surveys, and to engage in the education and training of researchers in the use of large-scale nationally representative datasets. NCSES welcomes efforts by the research community to use NCSES data for research on the science and technology enterprise, to develop improved survey methodologies for NCSES surveys, to create and improve indicators of S&T activities and resources and strengthen methodologies to analyze and disseminate S&T statistical data. To that end, NCSES invites proposals for individual or multi-investigator research projects, doctoral dissertation improvement awards, workshops, experimental research, survey research and data collection and dissemination projects under its program for Research on the Science and Technology Enterprise: Statistics and Surveys.

Accelerating Discovery: Educating the Future STEM Workforce

National Science Foundation, **Deadline: January 16, 2019**

Proposers are encouraged to include approaches that have the potential to increase and diversify participation in STEM. All proposals should contribute to one or more of the six research Big Ideas. EHR is particularly interested in supporting innovative education research and development in two Big Ideas: *The Future of Work at the Human-Technology Frontier* and *Harnessing the Data Revolution for 21st Century Science and Engineering*. Projects of interest include: innovative uses of technology and big data to understand learning; educational approaches that prepare tomorrow's innovators to use technology and big data to understand the natural world; effects of advances in intelligent agents on STEM teaching and learning; and evaluation of disruptive educational interventions on long-term student outcomes. Outcomes of these projects can enable the Nation to better prepare its scientific and technical workforce for the future; use technological innovations effectively for education; and advance the frontiers of science. Proposals should describe projects that build on available evidence and theory, and that will generate evidence and build knowledge, while contributing to the education of the future STEM professionals.

NETL News



Director's Corner — Dr. Brian Anderson to head DOE's National Energy Technology Laboratory

The U.S. DOE Assistant Secretary for Fossil Energy Steven Winberg announced that Brian J. Anderson, Ph.D. will be the new director of NETL, effective November 11, 2018. Anderson comes to NETL from West Virginia University (WVU) where he served as director of the WVU Energy Institute. With Anderson's arrival, NETL's Acting Director Sean Plasynski, Ph.D., will transition into his new role as the lab's Deputy Director and Chief Operating Officer.



Energy Department Invests 18.7M to Develop Products from Carbon Dioxide or Coal

The U.S. DOE's Office of Fossil Energy (FE) has selected 17 projects to receive approximately \$18.7 million in federal funding for cost-shared research and development. These projects will develop innovative technologies to generate novel, marketable products using carbon dioxide or coal as a feedstock, potentially offering significant advantages over traditional products and creating new market opportunities for coal. The projects are supported through the funding opportunity announcement (FOA) DE-FOA-0001849, Novel Methods for Making Products from Carbon Dioxide or Coal.

DOE Issues Notice of Intent for Funding Opportunity Announcement for University Turbine Systems Research

The U.S. DOE FE has issued a Notice of Intent for a FOA for cost-shared research and development projects for U.S. universities to conduct early-stage combustion turbine research.

Upcoming Workforce Conferences, Meetings, and Summits



National Summit for Gateway Communities

Shepherdstown, West Virginia, **December 11–13, 2018**

The National Summit for Gateway Communities will celebrate the role of gateway communities in the stewardship of America's public lands and identify opportunities to help them thrive. The summit will take place on December 11–13, 2018, at the National Conservation Training Center in Shepherdstown, West Virginia.

National Council for Science and the Environment (NCSE) 2019 Annual Meeting: Sustainable Infrastructure and Resilience

Washington, DC, **January 7–10, 2019**

Each year the NCSE Annual Conference brings together over 700 educators, researchers, students, policy-makers, government officials, business leaders and representatives from civil society. The event is a unique opportunity to gain insight into the latest trends and practices in environmental science and decision-making as well as to network with peers, make new connections, and meet today's and tomorrow's environmental leaders. A large part of the NCSE Annual Conference is the opportunities for learning. NCSE organized plenaries and keynotes cover today's pressing issues. More than 35 concurrent sessions will be presented, covering a variety of topics.

Reports and Resources



November 2018 LinkedIn Workforce Report

LinkedIn

The LinkedIn Workforce Report is a monthly report on employment trends in the U.S. workforce. It is divided into two sections: The first national section that provides insights into hiring, skills gaps, and migration trends across the country, and the second is a city section that provides insights into localized employment trends in 20 of the largest U.S. metro areas. Across all industries, gross hiring in the U.S. was 3.8% higher than in October 2017. Seasonally-adjusted national hiring was steady, down just 0.3% from September to October 2018. Hiring has levelled out since the late summer, but time will tell whether we're seeing a temporary breather or a more sustained pause. The industries with the biggest year-over-year hiring increases in October were public safety (10.3% higher), corporate services (10.2% higher), and software & IT services (9.7% higher). The Energy and Mining Sector saw a non-seasonally adjusted year over year increase of 4.3%.

Advancing a Jobs-Driven Economy

STEMconnector.com

Advancing a Jobs-Driven Economy: Higher Education and Business Partnerships Lead the Way compiles expert opinions from postsecondary and corporate leaders about how education and business can better collaborate to address the talent gap in the STEM workforce. The publication focuses on connecting education and business to better prepare students for the current and future job market and showcases effective partnerships and case studies. Advancing a Jobs-Driven Economy was produced by STEMconnector with contributions from Rob Denson, President of Des Moines Area Community College; Dr. Martha Kanter, Executive Director of the College Promise Campaign and Senior Fellow at the Steinhardt Institute for Higher Education Policy at New York University; and several executive, non-profit, and higher education leaders.

Teaching 21st Century Skills Requires New Assessments

Brookings Institute

As schools invest more time teaching students critical thinking skills, the need to invest in technology to enable measurement of teaching methods will become increasingly important, according to a report from the *Brookings Institution*. The report examines how 21st century skills are becoming a central part of teaching in countries around the world and how to address assessment needs.

DOE STEM Rising



The Graphic Nature of Data

Students are participating in the first Big Data and Visualization Camp at the U.S. DOE's Argonne National Laboratory. It is an opportunity for them to get a head start on what promises to be one of the most important skills for the coming era — extracting meaningful, useful information from an increasingly vast sea of numerical data.



Tribal College and University Students Explore 3D Printing and Technology Career Planning

Through support from the National Nuclear Security Association's *Minority Serving Institution Partnership Program*, the Department of Mechanical and Material Engineering at University of Nebraska–Lincoln has become home to a premier opportunity for students from Tribal Colleges and Universities exploring the latest developments in 3D printing technology. The second annual Advanced Manufacturing Summer Institute provided hands-on experiential learning opportunities while also creating technology and engineering career pathways for the 14 students from six schools who participated.

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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