

# RWFI E-NOTE MONTHLY

REGIONAL WORKFORCE INITIATIVE • OCTOBER 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), including ones meant to improve undergraduate STEM education as well as graduate education in STEM topics. Also included is the funding announcement for the NSF's Industry/University Research Centers.

If you've ever wondered about what rare earth metals/elements research is and what role NETL plays in this research, check out this month's Directors Corner Article on Rare earth elements. Also, in this month's NETL news is a brief article on efforts to increase underrepresented groups access to careers in energy and manufacturing.

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



### *Louis Stokes Alliances for Minority Participation*

National Science Foundation, **Deadline: November 16, 2018**

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. 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. The LSAMP program takes a comprehensive approach to student development and retention. Particular emphasis is placed on transforming undergraduate STEM education through innovative, evidence-based recruitment and retention strategies, and relevant educational experiences in support of racial and ethnic groups historically underrepresented in STEM disciplines.

### *Improving Undergraduate STEM Education: Pathways into Geoscience*

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

A well-prepared, innovative STEM workforce is crucial to the nation's health and economy. Indeed, recent policy actions and reports have drawn attention to the opportunities and challenges inherent in increasing the number of highly qualified STEM graduates, including STEM teachers. Priorities include educating students to be leaders and innovators in emerging and rapidly changing STEM fields as well as educating a scientifically literate populace. Both priorities depend on the nature and quality of the undergraduate education experience. In addressing these STEM challenges and priorities, the National Science Foundation invests in evidence-based and evidence-generating approaches to understanding STEM learning; to designing, testing, and studying instruction and curricular change; to wide dissemination and implementation of best practices; and to broadening participation of individuals and institutions in STEM fields.

### *U.S. Nuclear Regulatory Commission Funding Opportunity Announcement, Scholarship and Fellowship Education Grant, Faculty Development Grant, and Trade School and Community College Scholarship Grant, Fiscal Year 2019.*

Nuclear Regulatory Commission,  
**Deadline: November 30, 2018**

The U.S. Nuclear Regulatory Commission (NRC) was created as an independent agency by Congress in 1974 to enable the nation to safely use radioactive materials for beneficial civilian purposes while ensuring that people and the environment are protected. Funding under this program includes support for education in nuclear science and engineering, to develop a workforce capable of supporting the design, construction, operation, and regulation of nuclear facilities and the safe handling of nuclear materials. NRC only awards grants directly to accredited U.S. institutions of higher education and does not award individual scholarships or fellowships. Individual students cannot apply directly to NRC for scholarships or fellowships. Detailed information can be found at the link above and on grants.gov

*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.

**Recap of Recent NETL Meetings and Regional Events**



*NETL Participates in Regional Tri-State Energy and Advanced Manufacturing Consortium Meeting*

The Tri-State Energy and Advanced Manufacturing (TEAM) consortium is a network of nearly 50 organizations, economic development agencies and community colleges from across the tri-state, Marcellus-Utica Region. This meeting marked the first annual meeting of the now year-old organization that has its roots with the prior tri-state U.S. Department of Labor funded ShaleNet project, an effort to support training in the oil and natural gas industry. TEAM takes this further by expanding to include a variety of energy and manufacturing technologies relevant to the immediate region. The meeting was particularly meaningful with the announcement of TEAM receiving one of *35 Partnerships for Opportunity and Workforce and Economic Revitalization (POWER) grants* from the Appalachian Regional Commission, to help diversify and strengthen Appalachians coal-impacted communities. TEAM will use the additional funding to launch an initiative to increase enrollment and graduation from training programs supporting increasing skilled workers for the energy and advanced manufacturing industries.

NETL News



*Director's Corner — Highlighting Rare Earth Elements*

Throughout human history, coal has been an invaluable resource for heat and light and all the commodities that have played such an important role in advancing global civilizations. From ancient China to ancient Greece, coal was recognized as a useful and important material. Today, coal continues to fuel the nation's prosperity in new and surprising ways. People expect coal to fuel our power stations to provide the electricity they rely on — but coal can also provide materials critical to the functioning of everyday personal technology devices, renewable and nuclear energy components, medical technologies, transportation and more. The critical materials are rare earth elements (REE), and NETL research is finding that coal and coal byproducts may provide a source of REEs that may possibly create new industries and jobs in regions where coal has played an important economic role.



*Underrepresented Populations needed to meet future job demands in Energy, Advanced Manufacturing*

With expected shortfalls of 1–2 million unfilled jobs in STEM-related industries over the next decade, it will be imperative to attract and retain more people — including underrepresented populations — to join the STEM workforce. These future opportunities include high-tech and highly skilled jobs in energy and advanced manufacturing in active NETL research areas, such as *advanced computing*, new composite materials, novel manufacturing processes and *innovative research* related to fossil fuels.



*NETL Shares STEM Fun and Washington Elementary School*

NETL's K-12 STEM Education & Outreach team had an exciting visit October 11, 2018, with young students at Washington Elementary School in Washington, Pennsylvania. The team shared engaging hands-on/minds-on experiences — such as testing their design engineered roller coasters here — designed to excite students about STEM. NETL's education program seeks to educate the next generation of researchers, engineers, and scientists who will one day carry the charge of leading the United States to an energy independent future. K-12 outreach is just one of the ways NETL encourages excellence in STEM, fosters positive attitudes toward STEM, and builds students' confidence as STEM learners.

**Upcoming Workforce Conferences, Meetings, and Summits**



*Community Colleges of Appalachia Fall Conference*

Monaca, Pennsylvania, **November 1–2, 2018**

Community College of Beaver County (CCBC) is the host college for this year's fall conference "Partnerships and Pathways for Progress." The Community Colleges of Appalachia is a voluntary association of public community colleges serving the common interests of member colleges and their communities through programs and services responsive to the unique cultural, geographic, and economic development challenges facing the region.



**2018 Advanced Robotics Manufacturing National Members Meeting**

Pittsburgh, Pennsylvania, **November 5–7, 2018**

The National Advanced Robotics Manufacturing Member Meeting bridges the gap between industry, government, and academia by drawing hundreds of industry experts from more than 160-member organizations. This event is critical for its members because it provides networking time, project updates, technology and Education & Workforce Development specific sessions, and more. This event is free and open to members only.

**West Virginia Coding and Cyber Summit**

Charleston Marriott Hotel, Charleston, West Virginia, **November 15, 2018**

Across the U.S. — and in West Virginia — there is a huge demand for software coding and cybersecurity workers, and that number is expected to climb sharply as technology continues to advance at an exponential rate. In response, key industry and education leaders in the Mountain State have joined forces to generate new ideas for a strategic plan focused on cyber workforce development. An overview of this plan will be provided, and tech experts also will share best practices and industry standards. There will also be an opportunity to learn about new, innovative tech training programs available in West Virginia, including those that provide industry-recognized certificates and tech credentials.

**Entrepreneurial Ecosystems in Appalachia**

Appalachia Regional Commission

Entrepreneurial Ecosystems in Appalachia includes three reports which outline core elements necessary for a robust entrepreneurial ecosystem, analyze eight community case studies to provide insight into the unique challenges faced by communities in Appalachia, and offer recommendations to support future economic development across the Region.

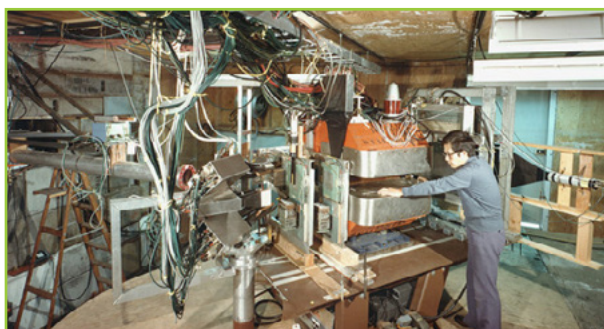
**DOE STEM Rising**



**Program manager sees education enrichment come to fruition**

The National Nuclear Security Administration’s (NNSA) Minority Serving Institution Partnership Program provides access to advanced facilities and technology, along with financial support through grants, to students studying in STEM. The program helps launch careers — ensuring a diverse group of hard-working, new graduates are well acquainted with job opportunities at NNSA.

**Reports and Resources**



**September 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. Nationally, across all industries, gross hiring in the U.S. was 2.9% higher than in August 2017. Seasonally-adjusted national hiring was steady, up a slight 0.1% in August from July 2018. The industries with the biggest year-over-year hiring increases in August were agriculture (19.9% higher); transportation & logistics (13% higher); and energy & mining (10.9% higher). In another notable increase, *Houston’s* hiring rate was up 20.3% from August 2017, reflecting a rebound from Hurricane Harvey — which severely depressed hiring numbers at this time last year.



**Women in STEM Posters for Classrooms: Series 3**

To inspire students to learn about the scientific achievements of women and how STEM education helped them pursue their dreams, posters have been created which share the images and stories of women whose scientific achievements were instrumental during the Manhattan Project. [Download and print the posters now](#) on any home or office printer for use in classrooms or after-school programs.



**Defining STEM Pathways for Young Female Students**

For the past five years, the U.S. Department of Energy's Brookhaven National Laboratory has partnered with a local chapter of Girls Inc., a nonprofit organization that meets the specific challenges facing young women. The partnership helps to encourage young women towards careers in STEM fields. This year, the Lab hosted 44 girls over a two-week period, engaging them in real-life science experiments and activities.

**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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