LEWIS–BURKE
ASSOCIATES LLC

Funding Opportunity: DOE Releases $40 Million Solicitation for Reaching a New Energy Sciences Workforce Initiative

Lewis-Burke Associates LLC – May 25, 2022

The Department of Energy (DOE) Office of Science released a $40 million funding opportunity for Reaching a New Energy Sciences Workforce (RENEW) initiative. All six Office of Science programs are participating in this new initiative to provide undergraduate and graduate training and research opportunities for students and academic institutions currently underrepresented in the Office of Science portfolio. This opportunity is primarily for non-R1 institutions of higher education and Minority Serving Institutions (MSIs)[1] in partnership with DOE national laboratories to access unique user facilities and science infrastructure. DOE views this initiative as part of a broader effort to advance a diverse, equitable, and inclusive research community. Each Office of Science program released a separate funding opportunity announcement, and this analysis consolidates information from each of the six solicitations (see table below).

Summary of RENEW Funding Opportunities

Program	Funding	Anticipated Number of Awards	Period of Performance	Pre-application/Letter of Intent Due Date	Webinar
Basic Energy Sciences	$15 million	10-20 $500,000-$750,000 per year	3 years with option of 3 year renewal	Letter of Intent due August 2	June 13
Earth and Environmental Sciences	$3 million	4-7 $300,000-$800,000 per year	4 years	June 29	June 13
Advanced Scientific Computing Research	$5 million	5-10 Multi-institutional: up to $1 million per year Single-institution: up to $500,000 per year	3 years with option of 2 year renewal 1 year for planning grant	August 3	June 15 (Registration link forthcoming)

[1]According to DOE, MSIs include Historically Black Colleges and Universities (HBCUs), Hispanic Serving Institutions (HSIs), Tribally Controlled Colleges and Universities (TCCUs), Asian American Native American and Pacific Islander Serving Institutions (AANAPISIs), and Alaska Native and Native Hawaiian Serving Institutions.

		Planning grant: up to $100,000			
High Energy Physics	$4 million	4-7 Up to $500,000 per year	3 years	Pre-applications not required, applications due July 27	June TBA
Fusion Energy Sciences	$3 million	5-10 Up to $500,000 per year	2 years with option of 2 year renewal	Letter of Intent due June 15	June 6
Isotope Research and Development	$10 million	5-10 Multi-institutional: up to $1 million per year Single-institution: up to $500,000 per year	5 years	Letter of Intent due June 20	June 1

General Requirements

While each funding solicitation has specific requirements and program objectives, general requirements include:

- developing experiential training, student mentoring, and institutional capabilities for non-R1 institutions and Minority Serving Institutions through research-focused collaborations at DOE national laboratories;
- leveraging existing expertise and user facilities at DOE national laboratories and, as appropriate, R1 institutions to augment learning opportunities for students at the undergraduate and graduate level, including curriculum development and new course offerings, summer schools and research internships, and collaborative research projects;
- partnerships with R1s on multi-institutional proposals are allowed and should be used to enhance the quality of research collaborations or training programs, which may include curriculum support, scientific or technical workshops, and professional development training in areas such as project management, entrepreneurial skills, science communication and technology transfer;
- the lead institution is expected to perform the greatest portion of the scientific and technical work than other participating institutions, but a portion of the budget (15-25 percent) should be allocated to a lab partner(s) to ensure active participation and mentorship and to provide support to an R1 partner or other more establish research institution; and

- some funds can be used to purchase equipment to build institutional capacity.

Below are specific research topics each Office of Science program plans to support.

Basic Energy Sciences (BES)

BES seeks proposals in two priority areas:

- **Fundamental science to enable clean energy**, including direct air capture of carbon dioxide; hydrogen production, storage, and use; solar energy conversion to electricity and fuels and electrical and thermal energy storage.
- **Fundamental science to transform low-carbon manufacturing**, including chemical and materials processes for low-carbon, circular, clean, and scalable manufacturing, synthesis, and processing; microelectronics; and polymer upcycling.

Biological and Environmental Research (BER)

BER seeks proposals only in earth and environmental systems sciences, including:

- **Atmospheric system research**, especially to quantify interactions among aerosols, clouds, precipitation, and radiation to improve predictive capabilities of regional and global models;
- **Environmental system science**, especially terrestrial ecosystems and watersheds; and
- **Earth and environmental systems modeling**, especially high fidelity models representing Earth system changes to provide vital information needed for energy and infrastructure planning.

Advanced Scientific Computing Research (ASCR)

ASCR seeks proposals only in **quantum computing and networking** and will support the following activities:

- Quantum computing and networking research projects between faculty and DOE national lab researchers;
- Quantum computing and networking opportunities between students and DOE national lab researchers or other partner institutions, such as adapting existing courses, course modules, and other curriculum from institutions with established quantum computing and networking course offerings, efforts to prepare students for summer schools and research internships, and efforts to apply current research in quantum computing and networking education;
- Leveraging DOE laboratory infrastructure for student training in quantum computing and networking, and
- One-year planning grants for institutions and Principal Investigators that need addition time to submit a full proposal to this opportunity.

High Energy Physics (HEP)

HEP seeks to fund **traineeships** that support training and research experiences for students in particle physics for members of underserved communities. Traineeships should be one to two years in duration and should provide 15 hours of support per week averaged over the academic year and 40 hours during

the summer. Traineeships may also extend after graduation for one "gap" year for participants who intend to apply or are considering applying to graduate schools; or for initial support for one or two years on entrance to a STEM graduate program.

Fusion Energy Sciences (FES)

FES seeks to fund proposals that advance key science priorities including:

- **Burning plasma science**, including physics gaps for tokamaks and stellarators;
- **Research and technology development**, including magnet technologies, plasma heating and current drive systems, and plasma fueling and disruption mitigation systems;
- **Materials research**, including advanced structural and functional materials, plasma-facing materials and components, additive manufacturing techniques, and AI and machine learning approaches; and
- **Discovery plasma science**, including low temperature plasma science and high energy density physics.

Isotope Research and Development

DOE seeks applications from Minority Serving Institutions to help develop training, research, and development activities related to **isotope production**. Proposals would focus on incorporating isotope science and technology relevant coursework for undergraduate and/or graduate students. Proposals could also include research and isotope production experiences at DOE isotope production sites to expose students to potential career paths and foster the development and training of the next generation of workforce in isotope related science.