

Supporting the Workforce Proposals in the LRP: DOE

Office of Nuclear Physics (NP)

April 26, 2024

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U.S. DEPARTMENT OF
ENERGY

Office of
Science

[Energy.gov/science](https://www.energy.gov/science)

NSAC LRP ‘Suite of Actions’ [Section 8.8]

1. “...a center where scientists, universities, laboratories could share resources, pool best practices...”
2. “Continued investment in and refinement of these programs [NSF CEU, RENEW] is essential.”
3. “It is imperative to raise the compensation of graduate researchers...”
4. “...expanded policy and resources to ensure a safe and respectful environment...”
5. “Funding agency policies on areas such as medical and family leave should be formalized and clearly communicated...”
6. “...we recommend supporting appropriate skills development in workshops and targeted sessions at conferences to effectively cultivate an inclusive ... environment...”
7. “...all national laboratories should have a CA in place that applies equally to laboratory staff and laboratory users, and the agencies should provide resources to support nuclear physics collaborations, communities, and networks to establish and maintain enforceable community agreements.”
8. “Proposal review and panel training should account for the differing service and teaching burdens....”
9. “...administrative support funds should be allocated to reduce the service load incurred by researchers who are awarded...grants that focus on research and retention activities.”

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SC Initiatives	FY 2023 Enacted (k\$)	FY 2024 Enacted (k\$)	FY 2025 Request (k\$)
NP-RENEW	6,000	6,000	20,000
NP-FAIR	2,000	2,000	6,000

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6. “... Annual, FAIR, RENEW FOAs: “SC is committed to ensuring that students, trainees, and postdoctoral fellows are paid a fair and equitable wage sufficient to allow a reasonable
7. “... standard of living. Applicant institutions are strongly encouraged to examine their institutional pay scales to ensure that all personnel earn a living wage. The provision of fellowships, traineeships, stipends, honoraria, subsistence allowances, and other similar payments may be allowable expenses on SC financial assistance awards, per 2 CFR 200.430, § 200.431, and § 200.466. For graduate students, SC considers a reasonable living wage to be an annual income of \$45,000, excluding benefits.”
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**OFFICE OF SCIENCE AND
TECHNOLOGY POLICY**

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US Public Law 117—167 Aug. 9, 2022:

“OSTP to establish interagency working group to coordinate Federal research agencies efforts to reduce sexual harassment involving federally funded researchers, and develop/implement uniform guidelines.”

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Annual FOA: “Applications for supplemental funding to an existing SC award are typically intended to address extraordinary or unexpected circumstances, and may include, but are not limited to, requests for:

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- Support for temporary personnel to continue productivity of work while project personnel are on extended leave in accordance with the recipient institution’s policies, whether for family, parental, military service, or other extended leave. Note that the disengagement of a PI or other senior/key personnel for more than three months (or 25% of their approved effort) requires agency prior approval, separate from the request for supplemental funds.
- Purchase of new equipment or modification of existing equipment, and/or the provision of services necessary to enable work to be carried out by project personnel with disabilities.”

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6. “...we recommend supporting appropriate skills development in workshops and targeted sessions at conferences...”
7. “...all laboratories should agree to collaborate...”
8. “Proposed PI should have no more than 12 years of full-time professional work experience in positions requiring a Ph.D. in the field in which the application will be submitted. The request for an eligibility extension will be evaluated as part of the pre-application assessment.”
9. “...address research needs...”

Early Career FOA: “Extensions to eligibility will be considered for individuals who have had a major life event requiring an extended absence (three months or longer) from the workplace, including but not limited to active military service, an absence due to personal disability, or an absence covered by the Family and Medical Leave Act. Requests for extended eligibility must be made by including in the pre-application a letter signed by the dean, research vice president, laboratory division director, or equivalent official stating that the proposed PI will have, as of the application deadline, no more than 12 years of full-time professional work experience in positions requiring a Ph.D. in the field in which the application will be submitted. The request for an eligibility extension will be evaluated as part of the pre-application assessment.”

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LRP's 'Suite of Actions' [Section 8.8]

1. In FY 2017, SC initiated a new annual process
2. that required the 10 SC DOE Labs to develop
3. and implement actionable DEIA strategies
4. that would be reviewed by SC headquarters.

5. In FY 2020, SC conducted the first-ever
6. external peer review of the SC Laboratories'
7. DEI Strategies.

- 8. Reviewers identified strengths and
9. weaknesses of each Lab's DEI efforts, as
well as laboratory-wide opportunities for
improvement.
- Reviewers also provided recommendations
to SC on how to improve our oversight and
promote advancement of DEIA at the Labs.

In response to the FY 2020 DEI peer review:

- SC restructured the annual guidance to the laboratories on their annual DEIA strategies to address peer review recommendations.
- SC added a DEIA objective into the annual performance goals for all 10 SC laboratories.
- Required the SC DOE Laboratories to publicly post multiyear trend data on the demographics of the laboratory workforce.
- Initiated a triennial onsite peer review process. Beginning in 2023, SC will review 3-4 labs per year; each lab will be externally reviewed every three years.

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<https://science.osti.gov/SW-DEI>

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▼ Can I request funding to support an administrative assistant to coordinate the project work across the collaborators?

Yes. If administrative and clerical support are integral to the scope of work, then funding can be requested. It may be appropriate to discuss cost categories and permissible costs with your institutional Office of Research.

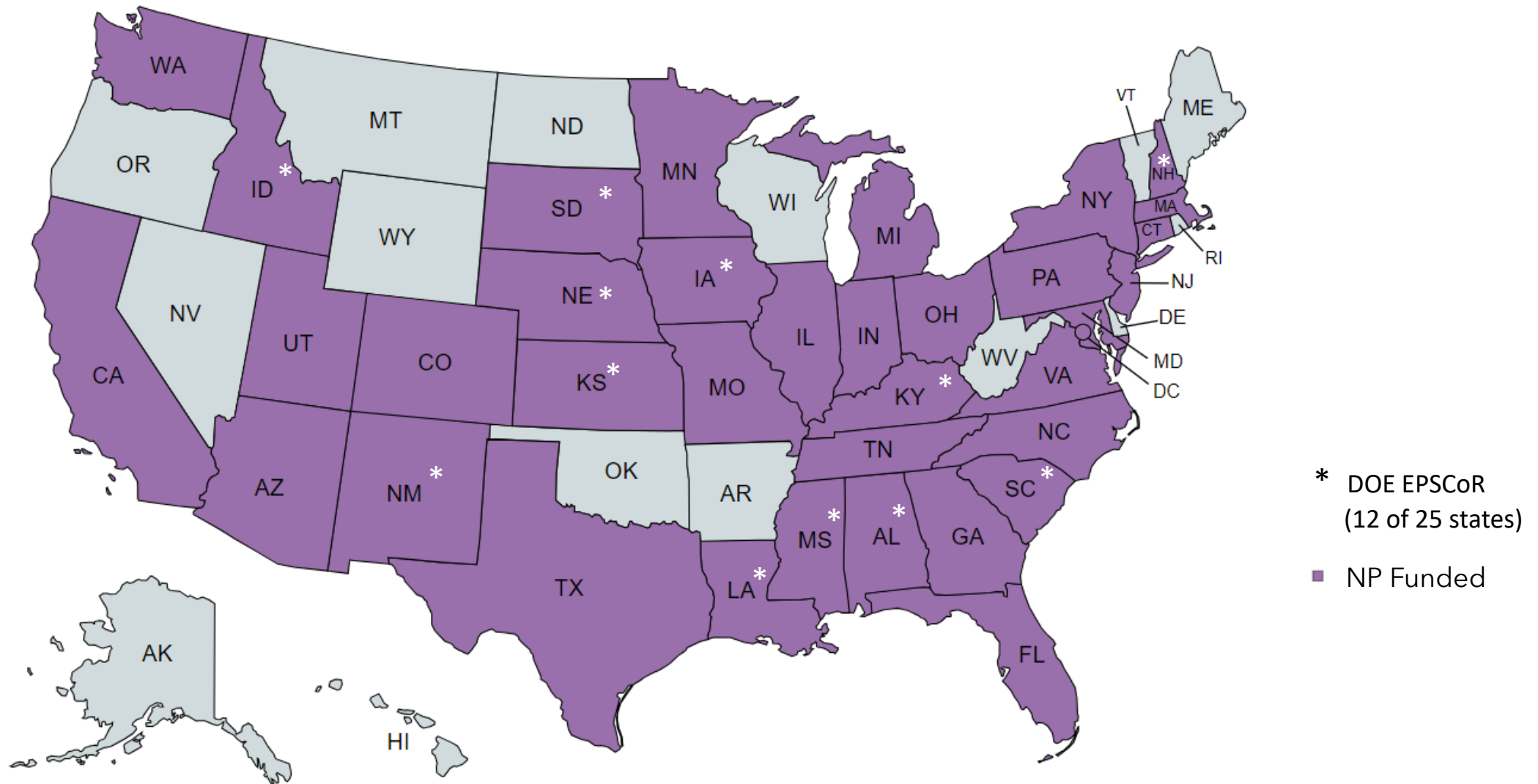
6. "... Annual, FAIR, RENEW FOAs: "Allowable costs may include, but are not limited to, the following, subject to the applicable cost principles:

- "Buying out" faculty time dedicated to teaching or administrative responsibilities,
- Support for administrative personnel dedicated to the proposed activity..."

8. "Proposal review and panel training should account for the differing service and teaching burdens..."

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States With DOE NP Supported Researchers

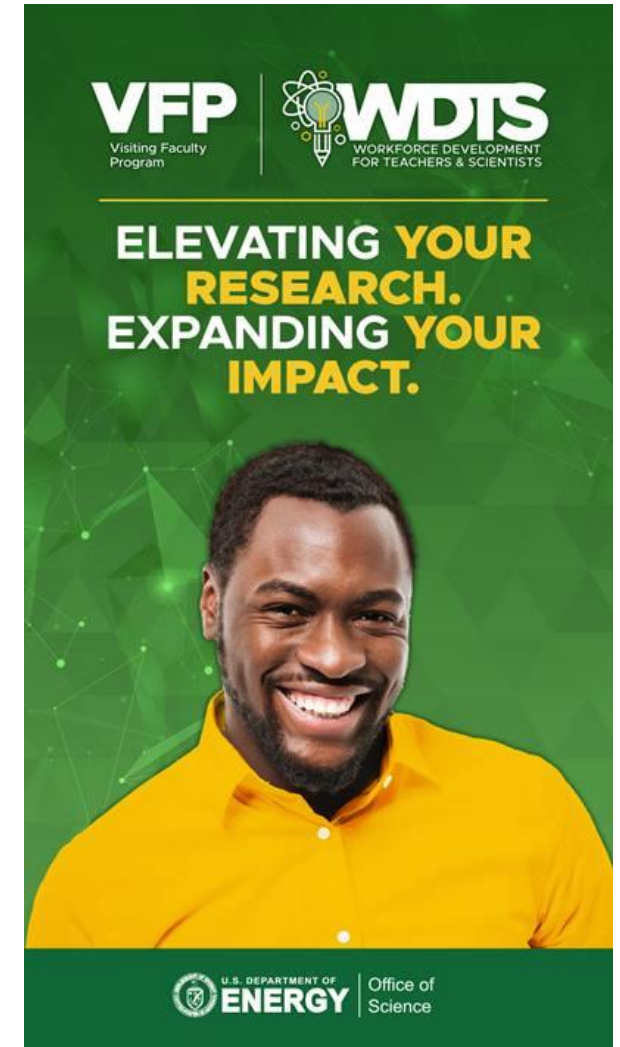


WDTS: Visiting Faculty Program

- Summer 10-week program. Option of inviting up to two students (one may be a graduate student).
- Returning VFP participants can apply for 10-week experiences in spring, fall terms; receive funding for teaching buyout.
- Two tracks:
 1. VFP Research Collaboration
 2. VFP Teaching Initiative Track (available for returning VFP participants)

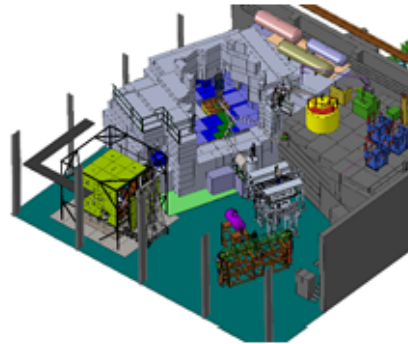
- 113 VFPs awarded summer 2024, 6 NP scope
- 1 NP VFP in summer 2023, none in 2022

<https://science.osti.gov/wdts/vfp>



Office of Science Graduate Student Research (SCGSR) Program

- Supplemental awards to U.S. graduate students (US citizens or lawful permanent residents) to pursue part of their doctoral research at a DOE laboratory/facility in areas that address scientific challenges central to the Office of Science mission.
- NP engagement growing with fluctuations
- 10% average, 9 for 2023



Douglas Wong, *Indiana University at Bloomington*, **SCGSR 2020 S1 (NP)** conducted in collaboration with **Dr. Takeyasu Ito** at *Los Alamos National Laboratory* the characterization of the facility's new ultracold neutron (UCN) beamline, including studies of UCN transport and storage, and developed an analytical model to parametrize the input energy spectrum. Importantly, the UCN beam enables the search for the neutron electric dipole moment (nEDM), which is a sensitive probe of new sources of time reversal symmetry violation and gives clues to the puzzle of matter-antimatter asymmetry in the universe. The SCGSR program allowed Douglas to participate in the efforts towards the commissioning of the nEDM experiment.

Wong, D.K.-T. et al. *Nuclear Instr. Methods Phys. Res. A* **2023**, 1050, 168105
<https://doi.org/10.1016/j.nima.2023.168105>

<https://science.osti.gov/wdts/scgsr>

WDTS: Science Undergraduate Laboratory Internships (SULI)



- Paid internship opportunity sponsored and managed by the DOE Office of Science’s WDTS in collaboration with DOE
- 10-week summer internship (May–August) or in 10-week internship during the semester (August–December or January–May)
- 922 CCIs awarded summer 2024, 6% NP scope

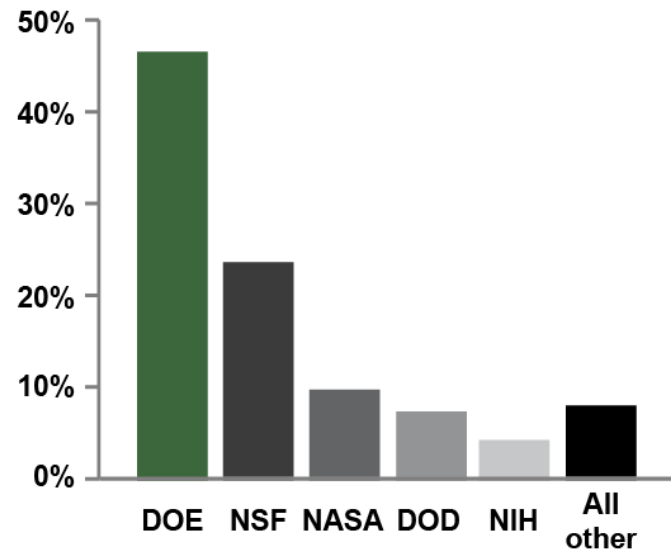
<https://science.osti.gov/wdts/suli>

WDTS: Community College Internships (CCI)



- Paid internship opportunity sponsored and managed by the DOE Office of Science’s WDTS in collaboration with DOE
- 10-week summer internship (May–August) or in 10-week internship during the semester (August–December or January–May)
- 122 CCIs awarded summer 2024, 5% NP scope

<https://science.osti.gov/wdts/ci>



Support for basic research in the physical sciences by agency.
 Source: *NSF Science and Engineering Indicators*



US Public Law 117—167 Aug. 9, 2022

(Sec. 10111) “The Office of Science shall support the development of a scientific workforce through programs that facilitate collaboration between and among teachers at elementary schools and secondary schools served by local educational agencies, students at institutions of higher education, early-career researchers, faculty at institutions of higher education, and the National Laboratories, including through the use of proven techniques to expand the number of individuals from underrepresented groups pursuing and attaining skills or undergraduate degrees relevant to the mission of the Office of Science....

DOE shall

- expand opportunities to increase the number of highly skilled science, technology, engineering, and mathematics (STEM) professionals working in disciplines relevant to the mission of DOE; and
- broaden the recruitment pool to increase participation from Historically Black Colleges or Universities, Hispanic-serving institutions, Tribal Colleges or Universities, minority-serving institutions, institutions in eligible jurisdictions, emerging research institutions, community colleges, and scientific societies in those disciplines....
- develop programs that strengthen the research capacity relevant to Office of Science disciplines at emerging research institutions....
- establish a university-led Traineeship Program to address workforce development needs in STEM fields relevant to DOE....
- establish key performance indicators to measure and monitor progress of education and workforce programs and expand Departmental activities for data collection and analysis.”

DOE NP Supports ~95% of U.S. Basic Nuclear Physics Research

People

NP Workforce

- ◆ ~852 Faculty & Lab Res Staff
- ◆ ~391 Post-docs
- ◆ ~630 Graduate Students
- ◆ ~900 Lab technical/admin
- ◆ ~150 Undergraduates

Research Groups

- ◆ 9 National Laboratories
- ◆ 100+ Universities

Places

University Centers of Excellence

- ◆ CENPA (U. of Wash)
- ◆ INT (U. of Wash.)
- ◆ TAMU (Texas A&M)
- ◆ TUNL (Duke)
- ◆ REC (MIT)

Scientific User Facilities ~4,000 users

- ◆ RHIC (BNL)
- ◆ CEBAF (TJNAF)
- ◆ ATLAS (ANL)
- ◆ FRIB (MSU)

Other Lab. Facilities

- ◆ 88-Inch Cyclotron (LBNL)