Virtual Townhall:

Reaching a New Energy Sciences Workforce for High Energy Physics (RENEW-HEP)

DE-FOA-0002949

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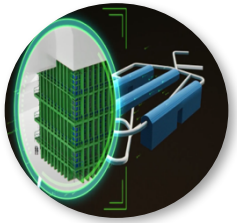
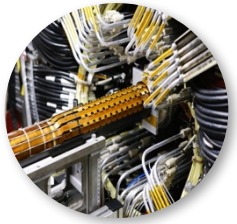
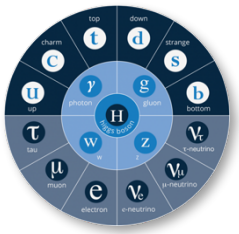
SC DOE -HEP Virtual Townhall
February 1, 2023: Remote via Zoom

U.S. DEPARTMENT OF ENERGY | Office of Science





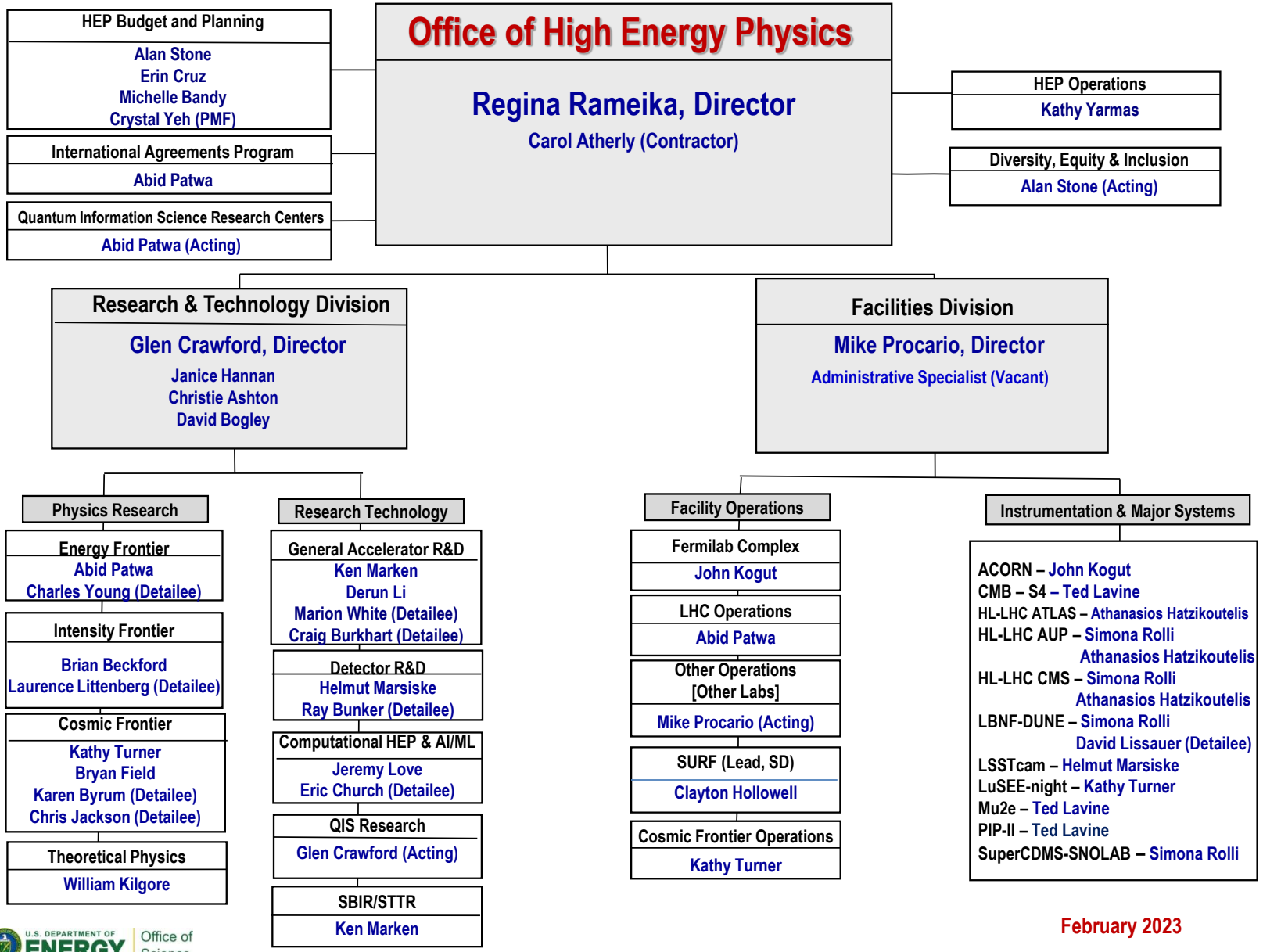



Welcome

- Welcome to the Reaching a New Energy Sciences Workforce for High Energy Physics (RENEW-HEP) Webinar (DE-FOA-0002949).
- This presentation is being held to provide some context and clarification of the FOA and to answer questions.
- Please do not use the raise hand feature in zoom to indicate you would like to ask questions. Refrain from putting questions in Q&A box until the closing slide as answers to questions may be addressed in the presentation.
- The Q&A session will be conducted after the presentation.
- Keep questions brief and concise.
- Avoid specific research topics or team arrangement as part of questions.

This talk will: (1) provide some background on HEP goals of RENEW-HEP;
and
(2) Provide an opportunity for stakeholders to ask questions in order to improve prospective proposals

DOE Office of High Energy Physics



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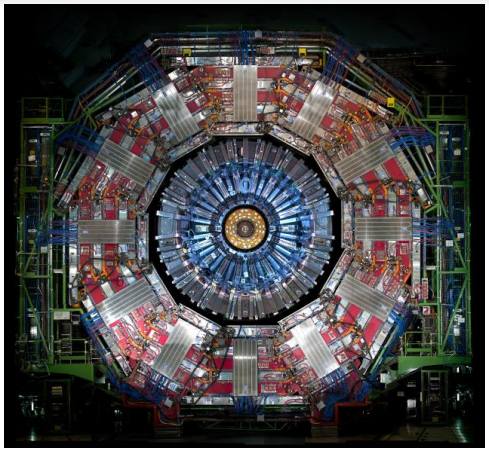
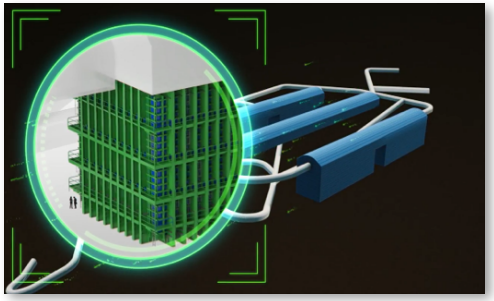
February 2023

The DOE High Energy Physics Mission



- **HEP Mission:** understand how the universe works at its most fundamental level
  - **Discover** the most elementary constituents of matter and energy
  - **Probe** the interactions between them
  - **Explore** the basic nature of space and time

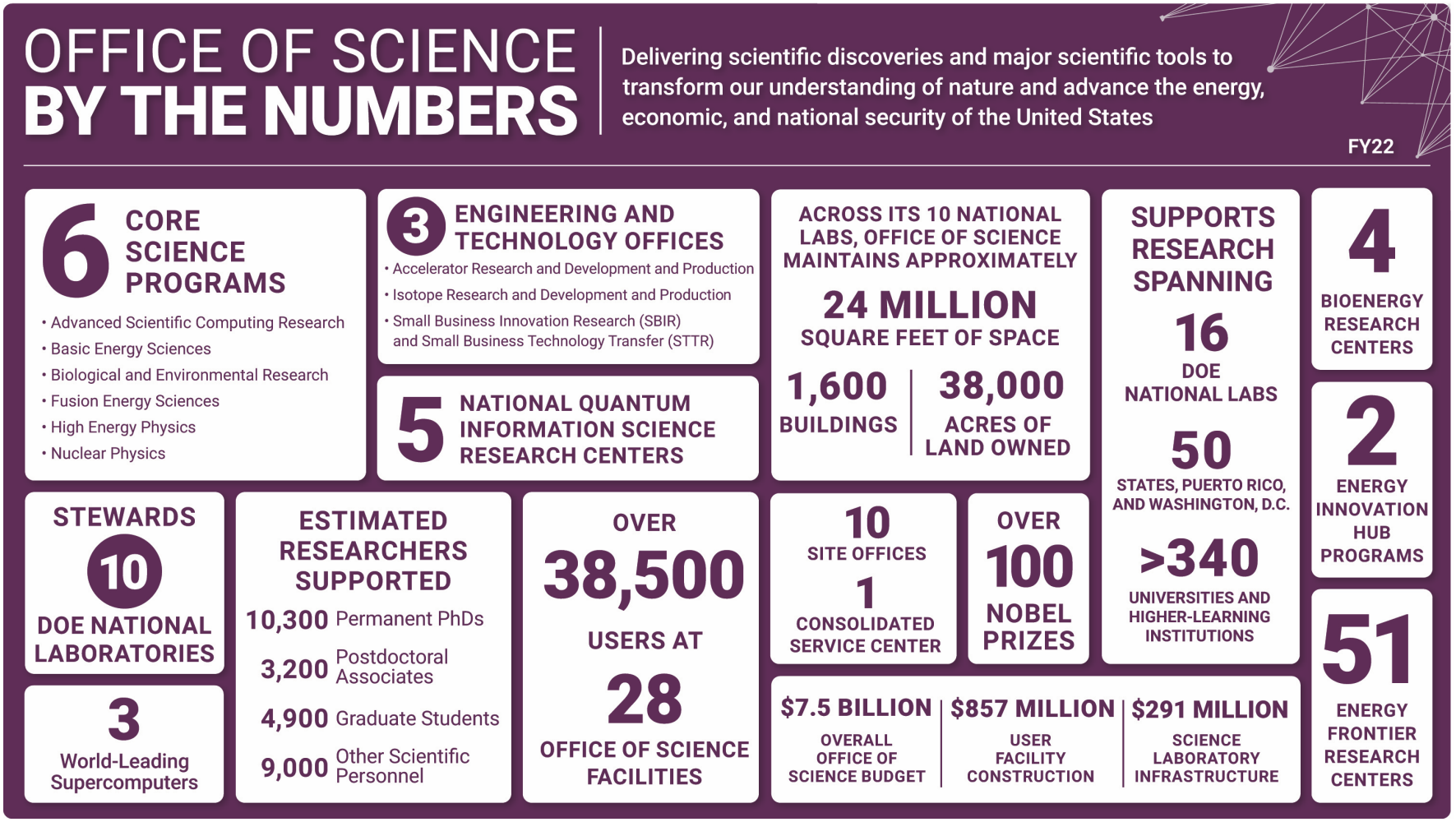
- **Program Model**
  - **Experimental Science and Technology R&D is Mission-Driven:** DOE develops and supports a specific portfolio of projects ⇒ emphasis placed on planning, building experiments, operating, and publishing results
  - **Theory:** supports activities that provide the vision and the mathematical framework for understanding and extending our knowledge of the universe.



- **The DOE Office of High Energy Physics fulfills its mission by:**
  - **Significant, coherent contributions** to facilities/experiments selected for the program (e.g., LHC, Mu2e, …), including project management through the DOE project system
  - **Support for science collaborations** throughout their full life cycle, leading to the best possible science results
  - **Support for technology R&D** to advance state-of-the-art particle accelerators and detectors that will lead to new and more capable facilities
  - **Form partnerships** with domestic and international organizations (e.g., NSF, CERN, etc.) to help deliver our mission
- **DOE supports about ~85% of the U.S. HEP effort (in $), including ~all national labs**

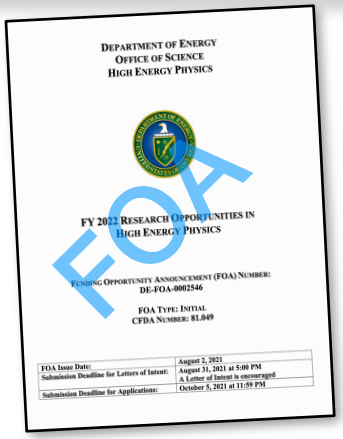
The DOE High Energy Physics Mission

HEP underpins and advances the DOE missions and objectives through a balance portfolio of scientific research, facilities' operations and projects, and by the development of key technologies and trained person-power needed to work at the cutting edge of science.

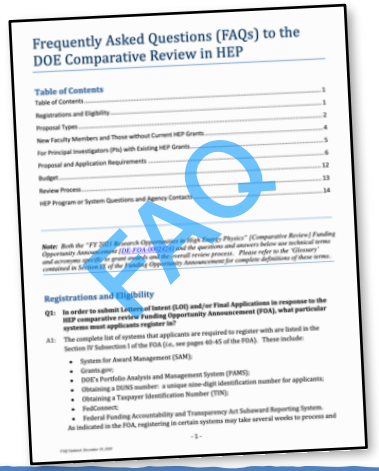


FY23 RENEW-HEP Funding Announcement (FOA)

- **FY23 FOA issue date: January 9, 2023**
  - **Webinar: February 1, 2023**
  - **Letter of Intent (strongly encouraged) due: February 21, 2023**
  - **Final Proposal deadline: March 31 2023**
    - Institutions are limited to no more than 3 applications.
  - **Review and Selection processes: ~April - June 2023**
  - **Award Announcement: ~July 2023**



- **FY23 FAQ is developed and addresses topics:**
  - Registration and eligibility requirements
  - Proposal types(**Infrastructure highly encouraged**)
  - Guidance for collaborative proposal
  - Guidance for PIs with existing HEP grants
  - Budget information and guidance on scope of request(s)
  - Information on overall merit review process



Both FOA and FAQ are will be available at:
https://science.osti.gov/Initiatives/RENEW/Funding-Opportunities

DOE RENEW Initiative

- **The SC RENEW initiative advances the goals of Executive Order 13985, *Advancing Racial Equity and Support for Underserved Communities Through the Federal Government*. This was the first executive order signed by the current administration.**
  - **The RENEW initiative spans the (SC) office including:**
  - **Advanced Computing Research (ASCR-RENEW), Earth & Environmental Science, Fusion Energy Sciences (FES-RENEW), Basic Energy Sciences (BES-RENEW), Isotope Training Research and Development at Minority Serving Institutions, and Reaching a New Energy Sciences Workforce for High Energy Physics (RENEW-HEP).**
  - Our community has been drawn primarily from a pool of potential talent that is less diverse than the general U.S. population, and has been concentrated at larger, research-intensive academic centers.

- **SC RENEW Goals:**
  - RENEW aims to build foundations for the Office of Science (SC) research at institutions historically underrepresented in the SC research portfolio.
  - RENEW aims to leverages SC unique national laboratories, user facilities, and other research infrastructure to provide training opportunities for undergraduate and graduate students, postdoctoral researchers, and faculty at academic institutions not well represented in the U.S. science and technology eco system.
  - RENEW aims to provide the hands-on experiment gained through the initiative will open new career avenues for a future pool of talented scientists, engineers, and technicians with critical skills and expertise needed for the full breadth of SC research activities.

Goal: build foundations for the Office of Science (SC) research at institutions historically underrepresented in the (SC) research portfolio

RENEW in Context of HEP

- **RENEW-HEP:**
  - HEP seeks to broaden and diversify the high energy physics community.
  - Some of the barriers identified in improving diversity and equity in HEP include: **lack of sufficient mentoring , support networks, or recruitment, outreach and professional culture of inclusion at "traditional" HEP research institutions; lack of research infrastructure and support at institutions that have not traditionally received HEP funding, possibly disadvantaging them in the competitive review process; the need for additional support for faculty at institutions with large teaching loads; and general financial barriers to students pursuing degrees in STEM fields.**
  - This program is informed and influenced by the recommendations reports including the American Institute of Physics TEAM-UP report. The RENEW-HEP was also informed by outcomes of the SC RENEW listening sessions.

- **This program is intended to support training and research experiences in support of particle physics for members of underserved communities, with the dual goals of:**
  - **1) Supporting investigators and building research infrastructure at institutions which have not traditionally been part of the particle physics HEP portfolio.**
  - **2) Increasing the likelihood that participants from underrepresented populations, such as those present at minority serving institutions (MSIs) pursue STEM careers by providing traineeships or undergraduate and graduate students, postdoctoral researchers, and faculty at academic institutions not well represented in the HEP research portfolio.**

- **FOA Scope: All topics within HEP are supported and eligible for scope of work to be proposed**

  - **Experimental Science and Technology R&D is Mission-Driven:** DOE develops and supports a specific portfolio of projects: **Intensity, Energy, & Cosmic Frontiers, Detector and General Accelerator R&D, and AIML.**

  - **Theory:** supports activities that provide the vision and the mathematical framework for understanding and extending our knowledge of particles, forces, space-time, and the universe.

- **Application Requirements**
  - Eligible Institutions: Lead PIs from universities/colleges, non-profit organizations, for profit organizations, and DOE laboratories. Multi-team collaborations are eligible.
  - Letters of Intent were not required but strongly encouraged.

Eligible applicants

- This is a recurring solicitation. We will accept new and renewal proposals.
- This solicitation is planned to provide up to a total of $8M over 3 years.
- A total of up to 8-14 projects are planned to be funded.
- **No restrictions on types of partnerships or number of partners.**

Restrictions include:

- **No more than 25% of proposed budget must be allocated to a non–MSI partner/participant.**
- Applicant institutions are limited to no more than 3 letters of intent, pre-applications, or applications. *The PI on a letter of intent, pre-application, or application may also be listed as a senior or key personnel on separate submissions without limitation.*
- Award size: $50K-$500K/year, up to 3 year awards

Eligible applicants

- **Multi-institution team applications**

  - SC uses two different mechanisms, **collaborative or sub-awards**, to support teams of multiple institutions. Regardless of which mechanism is proposed, with regard to multi-institution applications, HEP will prioritize applications that maximize participation of MSIs, non-research-intensive (non-"R1") institutions, and/or institutions not currently represented in the HEP research portfolio.

  - RENEW-HEP seeks to ensure that collaborators directly participating on RENEW awards, particularly from institutions historically underrepresented in SC research such as non-R1 institutions and Minority Serving Institutions, are fully engaged in substantive roles on the project.

  - **Both collaborative applications and proposed sub-awards are methods by which multiple institutions can work together to reach the scientific objectives described in this FOA.** *If multiple institutions will be functioning as a network of peer-level researchers, a collaborative structure would be more appropriate. If multiple institutions will be functioning with leadership and direction coming from one institution, a sub-award arrangement would be more appropriate.*

FY23 RENEW-HEP Activities Supported

✓What we support (no change from FY22)

- **Traineeships**
  - The award term is expected to be 36 months. Traineeships should typically be one to two years in duration and should typically provide 15 hours of support per week averaged over the academic year and 40 hours during the summer
  - Traineeships may 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.
  - Travel and salary support for trainees, in order to recognize and formalize the role of those involved in mentoring, the proposed inclusion of partial support for academic year and/or summer salary (up to 4 months) for faculty, and/or partial salary support for postdocs (typically 30%) is encouraged
  - Support for faculty mentors at student trainee home institutions even if the primary research activity is being conducted elsewhere, at a National Lab or partner institution for example, is also encouraged

- **Traineeships focused proposals:**
  - Applications with clear and detailed mentoring plans will be favored. Simultaneous support of multiple trainees (a cohort), while not required, will be viewed as beneficial.
  - Applications should clearly articulate benefits to the participant trainees, including skills acquired, networking opportunities, and practical assistance in career planning.
  - Applications should articulate clear goals for the proposed traineeship program and suggest metrics to assess its success. Where possible, applicants should leverage existing infrastructure to further the goals of the program.

✗No more than 25% of the budget is at non-MSI participants

RENEW-HEP Activities Supported

✓Potential budget items that can be supported(no change from FY22)

- **Salary:**
  - "Buying out" faculty time dedicated to teaching or administrative responsibilities; Stipends and benefits for students and post-doctoral researchers, recognizing their dual nature as both trainees and employees; Salary support to cover time to participate in outreach for recruitment and training events, science team meetings, partnership development, or information gathering; and
  - Support for administrative personnel dedicated to the proposed activity; Support for professional development, training, mentoring of students and junior researchers;
  - Fringe benefits, which must be paid in accordance with an institution's negotiated rates agreement, institutional policies, and the individual's appointment;

- **Travel**
  - **Travel to meet with potential collaborators at other institutions and relevant DOE/NNSA national laboratories; or to attend one or more science team, user facility, scientific conference, workshop, or professional society meetings relevant to the proposed research; or for the conduct of off-site research;**
  - Temporary dependent-care costs incurred during travel;

- **Membership:** Costs in relevant professional societies, including both scientific societies and those dedicated to research administration;

- **Equipment & Instrumentation: Instrumentation required to conduct proposed research; Equipment (items with a useful life of more than 12 months and a per-item acquisition cost of more than $5,000) required to conduct proposed research;**

- **Other direct costs, e.g., materials and supplies such as office supplies, desktop or laptop computer, and/or software licenses that are directly necessary to enable the proposed activities.**

✗No more than 25% of the budget is at non-MSI participants

Proposal: Project Narrative

- **The Project Narrative comprises the *plan* for the project**

  - Should contain a brief introduction to your research, the accomplishments of your group, the methods used, the setting within which this research is carried out, and the opportunities available for trainees within your group.
  - **Include a description of any relevant past experiences in workforce development, mentoring of students, and/or involvement of undergraduates in particle physics research. Identify specific capabilities and characteristics that support the goals of this initiative.**
  - Specifically address how you will address some of the barriers identified to diversity and equity in HEP barriers via mentoring plans, outreach and inclusion strategies, support for research infrastructure, and/or adequate student or faculty support, as appropriate.
  - Devote main portion to a description and justification of the proposed project.
  - Indicate which project personnel will be responsible for which activities.
  - Include timeline for the activities of the proposed project.
  - **Narrative should demonstrate an awareness of the challenges to reaching these goals and also specify how those challenges will be mitigated.**

- **Project Narrative must not exceed 15 pages when printed on standard 8 ½" x 11" paper with 1-inch margins on all sides. Font must not be smaller than 11 point.**

FY23 RENEW-HEP FOA Changes

- **The FY22 FOA focused strongly on Research Traineeships.**

- **The FY23 FOA includes the Promoting Inclusive and Equitable Research (PIER) Plan requirement.**

- **The FY23 FOA included language to describe the project narrative that clarified that Infrastructure focused proposals are strongly encouraged and sought. We ask proponents to:**

  - Provide a **detailed** description of the plan to build and/or develop research infrastructure at the institution(s).
  - **Describe planned strategies to involve the institution(s) into the HEP research portfolio and if partnering, describe how an institution not in currently in HEP will be impacted in a sustainable way from the partnership with an institution that currently is.**
  - Describe how the proposed work will help to achieve development of research infrastructure and support at institutions that have not traditionally received HEP funding, possibly advantaging them in the competitive review process.
  - Specify what local resources and/or external resources will be used to further develop the institutions research capabilities.
  - Include a description of how activities will be coordinated and tracked and how the success of the program will be evaluated.
  - **Demonstrate an awareness of the challenges to reaching these goals and also specify how those challenges will be mitigated.**
  - Describe how mentors will be selected and trained.
  - **BE CREATIVE with the unique opportunities presented in this FOA.**

Evaluation: Merit Review Criteria

MERIT REVIEW CRITERIA	REVIEW CRITERIA SUB-QUESTIONS FOR MERIT REVIEWER'S EVALUATIONS
SCIENTIFIC AND/ OR TECHNICAL MERIT OF THE PROJECT	• What is the scientific innovation of the proposed research? • **What is the likelihood of achieving valuable results?** • How might the results of the proposed work impact the direction, progress, and thinking in relevant scientific fields of research? • How does the proposed work compare with other efforts in its field, both in terms of scientific and/or technical merit and originality? • Is the DMP suitable for the proposed research? To what extent does it support the validation of research results? To what extent will research products, including data, be made available and reusable to advance the field of research? • If evaluating an application for a program support center, does the support center have an appropriate plan for tracking the success of the national program?
APPROPRIATENESS OF THE PROPOSED METHOD OR APPROACH	• Does the applicant have a well thought out plan for recruiting participants? • **Does the proposed plan to recruit and retain students and early-stage investigators provide sufficient mentorship? Does this plan, where appropriate, include an aspect of faculty-to- faculty engagement between host institution faculty and faculty at an MSI?** • **Do the proposed activities make good use of currently supported research infrastructure?** • **How likely is it that the proposed activities including any outreach activities will help to broaden and diversify the community of researchers supported by HEP?** • **Are there plans to involve new istitution(s) into the HEP research portfolio and if partnering, describe how an institution not in currently in HEP will be impacted in a sustainable way from the partnership with an institution that currently is?**

Evaluation: Merit Review Criteria

MERIT REVIEW CRITERIA	REVIEW CRITERIA SUB-QUESTIONS FOR MERIT REVIEWER'S EVALUATIONS
COMPETENCY OF APPLICANT'S PERSONNEL AND ADEQUACY OF PROPOSED RESOURCES	• **What is the past performance and potential of the Principal Investigator (PI)?** • **Based on past performance or current plans, has the applicant demonstrated an aptitude for fostering a sense of belonging and nurturing physics identity within trainee populations?** • **Are the roles for mentees, mentors including any co-mentors, and department or institutional staff clearly specified? Are those resources adequate to provide the participants support throughout the period of the traineeship**? • Does the proposed work take advantage of unique facilities and capabilities? • Does the applicant have an appropriate plan to take advantage of local and/or external resources or support structures to further the diversity goals of the program? • **How do the roles and responsibilities of all collaborators on the project, particularly those from MSIs and/or non-R1 institutions reflect a level of meaningful and/or substantive effort, and how is that substantive effort reflected in the proposed budget(s)?**
REASONABLENESS & APPROPRIATENESS OF THE PROPOSED BUDGET	• **If support for equipment or other research infrastructure is requested, is it appropriate and necessary for development of the research program at smaller or less research-intensive institutions ?** • Is the budget reasonable and appropriate for the scope?
QUALITY AND EFFICACY OF RECRUITMENT AND MENTORING PLAN	• **Is the proposed Promoting Inclusive and Equitable Research (PIER) Plan suitable for the size and complexity of the proposed project and an integral component of the proposed project?** • Does the proposed plan to recruit and retain students and early-stage investigators provide sufficient mentorship, and incorporate intentional strategies for supporting a sense of belonging among project personnel? • Is the proposed plan likely to lead to satisfactory outcomes and an advancement in career opportunities for students and other early-stage personnel? • **What aspects of the PIER plan are likely to contribute to the goal of creating and maintaining an equitable, inclusive, encouraging, and professional training and research environment and supporting a sense of belonging among project personnel?**

Other Important items

- Read the FOA carefully and follow the requirements on content, length, etc. Several requirements in the FOA are set from outside the DOE/HEP office, and there is little to no flexibility to modify. **Non-compliant proposals submitted to the FOA will not be reviewed.**

- All Research proposals submitted to DOE Office of Science must have a Data Management Plan (DMP)

- All FOAs have different eligibility, technical requirement, page limits, etc.

- The Promoting Inclusive and Equitable Research (PIER) Plan requirement for all SC FOAs was included.
  - FY 2023, all Department of Energy (DOE) Office of Science Funding Opportunity Announcements (FOAs) and DOE National Lab Announcements and other funding solicitations will require applicants to submit a Promoting Inclusive and Equitable Research (PIER) Plan as an appendix to their proposal narrative.

- The guiding reviewer questions for the criterion, Quality and Efficacy of the Plan for Promoting Inclusive and Equitable Research, include the following:
  - Is the proposed Promoting Inclusive and Equitable Research (PIER) Plan suitable for the size and complexity of the proposed project and an integral component of the proposed project?
  - To what extent is the PIER Plan likely to lead to participation of individuals from diverse backgrounds, including individuals historically underrepresented in the research community?
  - What aspects of the PIER Plan are likely to contribute to the goal of creating and maintaining an equitable, inclusive, encouraging, and professional training and research environment and supporting a sense of belonging among project personnel?
  - How does the proposed Plan include intentional mentorship and are the associated mentoring resources reasonable and appropriate?

More information on PIER can be located at:
https://science.osti.gov/grants/Applicant-and-Awardee-Resources/PIER-Plans

Closing

- **HEP is maintaining the core of the DOE science mission**

  - The SC RENEW initiative builds foundations for research and training at historically underrepresented institutions in the SC research portfolio through new partnership models and through supporting research and training applications that include project elements aimed at directly addressing barriers to participation in HEP.

- **RENEW-HEP programmatic goals:**

  - 1) Supporting investigators and **building research infrastructure** at institutions which have not traditionally been part of the particle physics HEP portfolio.
  - 2) Increasing the likelihood that participants from underrepresented populations, such as those present at minority serving institutions (MSIs) pursue STEM careers by **providing traineeships or undergraduate and graduate students,** postdoctoral researchers, and faculty at academic institutions not well represented in the HEP research portfolio.

It is an exciting time in HEP !

Questions?

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Program Staff Responsible for Selections/Award Management

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