

DOE HEP Status

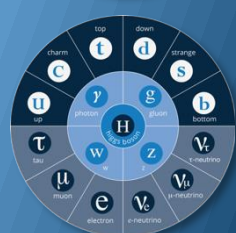
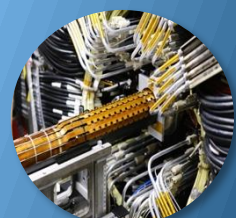
Fermilab User's Meeting
August 2-5 2021

- ▶ Glen Crawford
- ▶ Director, Research and Technology R&D
- ▶ DOE High Energy Physics



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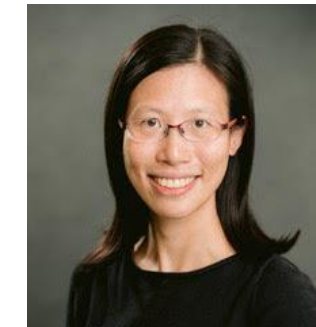
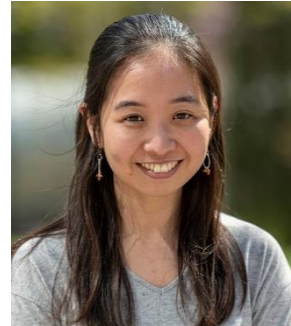


2021 Virtual HEP PI Meeting

- ▶ To brief and guide the HEP community on the FY 2022 Comparative Review and provide a status and overview of the DOE-supported HEP program, a virtual DOE-HEP Principal Investigators (PI) Meeting will be held on August 9-12, 2021.
- ▶ **All interested investigators invited, including existing and future investigators, laboratory staff, and interested postdoctoral researchers considering new faculty or staff positions**
- ▶ **Registration Deadline: August 6, 2021; Registration Fee: None**
 - ▶ <https://www.orau.gov/heppi2021/> (*encouraged to register for logistical planning*)
- ▶ **Draft Agenda posted, 1-on-1 meeting signups now available**
- ▶ General presentations during a plenary Zoom session
- ▶ Parallel Zoom sessions led by individual DOE-HEP Program Managers
- ▶ Additional sessions targeted at special topics
 - ▶ for e.g., Early Career research and related concerns; diversity, equity and inclusion in HEP; impacts of COVID-19 on university and laboratory research
- ▶ Opportunities to schedule separate 1:1 or small group remote sessions between PIs and DOE PMs across the different HEP program areas during the course of the event

FY 2021 HEP Early Career Awards – Congrats!

- Lindsey Bleem, *ANL*
- Chihway Chang, *U. Chicago*
- Netta Engelhardt, *MIT*
- Farah Fahim, *FNAL*
- Philip Harris, *MIT*
- Tongyan Lin, *UC San Diego*
- Xueying Lu, *Northern Illinois U.*
- Brian Nord, *FNAL*
- Simone Pagan Griso, *LBNL*
- Diana Parno, *Carnegie Mellon U.*
- Kiersten Ruisard, *ORNL*
- Daniel Scolnic, *Duke U.*
- Indara Suarez, *Boston U.*
- Caterina Vernieri, *SLAC*
- Hao-Yi Wu, *Boise State U.*



COVID Impacts and Mitigations

Caveat: The virus is still active and evolving. This is a snapshot of current status and plans.

HEP Projects: most projects delayed 6-12 months due to COVID. Work during COVID was rescheduled where possible with additional distancing and other health and security measures. Adjustments to project cost and schedules are understood and implemented where needed. Formal re-baselining (if needed) has not happened yet.

HEP Research:

We have granted maximum flexibility for changes in current/new research awards, e.g.:

- ▶ Extending student and postdoc terms, reducing travel
- ▶ “switching” thesis experiments due to delays in data

Please check with your program manager/point of contact if any questions.

We have learned from PI/collaboration surveys that a large fraction of grad students and a significant fraction of postdocs suffered career delays of 6-12 months due to COVID delaying their research. A smaller fraction have been “stuck” in place due to positions cancelled or deferred. Similar results seen in other DOE/SC programs

No specific COVID relief funding has been provided to DOE to-date, so no additional funds available for direct mitigations

Instead, we prioritized ongoing support for existing personnel, particularly GS and PD on Grants (i.e., Renewal proposals, some supplements) and lab awards. Proposals for new efforts were given a lower priority.

We will continue to monitor the situation going forward for FY22.

HEP Budget Request – FY 2022 Highlights

- ▶ **Research funding increases by \$21.4M or 5.4% over FY 2021 Enacted, with increases targeted to program and Administration priorities (+\$32M).**
 - ▶ Core Research activities increase (+\$0.2M) -> flat, no growth
 - ▶ *Accelerator Stewardship subprogram moves to the ARDAP (-\$10.8M)*
- ▶ **Multiple new or continuing Initiatives, including (relevant to HEP):** Accelerator Science and Technology Initiative, Artificial Intelligence/Machine Learning, Integrated Computational and Data Infrastructure for Scientific Discovery, Microelectronics, QIS and QIS Centers, plus:
- ▶ **Reaching a New Energy Sciences Workforce (RENEW) (\$4.0M):** Leverages SC's unique national laboratories, user facilities, and other research infrastructures to provide undergraduate and graduate training opportunities for students and academic institutions not currently well represented in the U.S. S&T ecosystem.

Reaching a New Energy Sciences Workforce (RENEW)



- Outreach
- Listening tours and round tables to:
- Gain understanding about challenges
- Develop evidence-based solutions



- Identify unique Office of Science Lab opportunities
- Partner with Minority Serving Institutions and professional societies
- Implement action plan

8/2/2021

- Competitively support new traineeship awards resulting in:
- “Hands on” experiences, mentoring, enhanced workforce diversity, equity, and inclusion



- Track post-traineeship outcomes
- Assess program effectiveness

Fermi User's Meeting 2021

Research Traineeships to Broaden and Diversify Nuclear Physics

- ▶ <https://science.osti.gov/-/media/grants/pdf/foas/2021/DE-FOA-0002456.pdf>
- ▶ The DOE SC Nuclear Physics (NP) program ... for Research Traineeships to Broaden and Diversify Nuclear Physics (TBD-NP) ... This pilot program is intended to support training and research experiences for members of underserved communities with the goal of increasing the likelihood that participants from underrepresented populations, such as those present at minority serving institutions (MSIs) , will pursue a career in a Science, Technology, Engineering or Math (STEM) related field, particularly in Nuclear Physics.
- ▶ ...informed and influenced by the recommendations in recent reports including the American Institute of Physics TEAM-UP report
- ▶ HEP is partnering with NP to fund 4 selected Traineeship awards in FY21-22:
<https://www.energy.gov/science/articles/departments-energy-announces-285-million-support-undergraduate-research>
- ▶ *See also: DE&I Roundtable/Listening session at HEP PI Meeting focused on identifying barriers to broader MSI participation in current HEP research programs*

Comments on Budget Process

- ▶ The budget process for the last several years has been unusual.
 - ▶ Budget Requests and final Appropriations for DOE Office of Science have not been closely aligned
 - ▶ Requesting HEP Project funding at the level of the approved baseline(s) would have forced larger cuts into Research.
 - ▶ Experience has shown Congress is more likely to respond to project shortfalls than research shortfalls.
 - ▶ **In particular, in FY2018-21 Congress added significant funding (above Request) to HEP projects.**
 - ▶ This has been critical to staying on the P5 plan and encouraging international partnerships
 - ▶ Strong and consistent community support for P5 have also been critical
 - ▶ But not all projects received similar increases

Fiscal Year 2022

- ▶ The budget process for FY22 was different due to transition to the new Administration (which happened late in the budget process)
- ▶ This is normal with a transition of Administrations, but resulted in re-racking of priorities, and some new Initiatives (see earlier slides)
- ▶ The FY 22 President's Request Budget for DOE/HEP is down \$1.5 million for Projects (Line Item Construction + Major Items of Equipment) compared to the FY 21 Appropriation.
 - ▶ The PIP II request is below the approved baseline.
 - ▶ LBNF/DUNE is below the planned level.
 - ▶ HL-LHC projects took larger cuts on a percentage basis.

Mitigations (what we are doing)

- ▶ Reaffirm our commitment to the P5 plan and priorities therein:
 - ▶ Talk to CERN management about our ongoing commitment to and priority for HL-LHC.
 - ▶ Talk to international partners about plans for LBNF/DUNE and PIP-II
 - ▶ Respond to questions from Congress on impacts.
 - ▶ Talk to all of the HEP project managers about FY22 planning
 - ▶ US CMS PM: *"The Project team is working with the Lab and DOE and CERN to re-establish a funding profile and schedule endgame which can support project baselining in the coming calendar year and project completion on time"*
 - ▶ All of these have been started and are ongoing.
- ▶ Wait for the markups from the Senate and the House
 - ▶ **House Mark** is slightly below Request for DOE/SC (-1.6%), but +4.2% above FY21. Senate Mark not expected until ~late summer.

Mitigations (what the community can do)

- Don't panic.
- Maintain strong and consistent community support for P5
- Start-up (restart) Snowmass process in 2021 building on P5



FY 2022 HEP Comparative Review

- ▶ FY 2022 Comparative Review FOA:
 - ▶ **Currently under final review at DOE and expected to be issued ~any day now**
 - ▶ Proposals currently expected to be due in early October
 - ▶ Reviews should be completed by end of calendar year 2021/early 2022
 - ▶ Planned (not-yet-approved) format changes for Bio-sketches, C&P, COIs, Mentoring and Recruitment – including an explicit merit review criteria question on the subject, Budget material, ...
- ▶ More information at the August 2021 Virtual HEP PI Meeting
- ▶ See the FOA for complete details once published



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