

CPAD Workshop 2022

Town Hall

Thursday, December 1, 2022

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Elementary Particle Physics – Experiment Program at NSF

- Now divided into 3 subareas (see [EPP program description](#)):
 - High Energy Physics (ATLAS, CMS, ...)
 - Precision Experiments (Neutrinos, LHCb, Rare-K, EDMs, ...)
 - **Tools for Particle Physics (Artificial Intelligence, Instrumentation, ...)**
- High Energy Particle Physics: This area supports university research focused primarily on direct discovery using the highest achievable energies. It includes research support for the ATLAS and CMS experiments at the Large Hadron Collider and studies of discovery reach at current and future collider facilities.
- Precision Particle Physics: This area supports university research focused on precision measurements of known and often rare processes to discover or constrain deviations from Standard Model expectations. It includes research support for experiments at accelerator facilities, such as the LHCb experiment and neutrino experiments, and non-accelerator experiments using AMO or other techniques.
- **Tools for Particle Physics**: This area supports university research efforts to significantly improve or transform current particle physics experimental techniques. It includes early concept research into new particle detection technologies and development of novel data collection, processing, and analysis capabilities. Advances in this area are expected from connections to other domains such as AMO, QIS, and AI.
- Division of Physics: Investigator-Initiated Research Projects (PHY) ([Proposal web site](#), [NSF 21-593](#))

Division and Directorate level programs

- EPP is a Program within the Physics Division ([PHY](#)), which is within the Directorate for Math and Physical Sciences ([MPS](#))
 - Instrumentation related proposals could be submitted to division-wide or directorate-wide solicitations. For example:
 - For development of instrumentation of up to \$4 M:
 - The Major Research Instrumentation (MRI) Program ([MRI Program Website](#))
 - New consequences of the Chips and Science Act -- notably no cost sharing
 - Next Submission window: January 16, 2023 - February 21, 2023
 - Note: New Proposal and Award Policies and Procedures Guide takes effect Jan 30, 2023
 - Faculty Early Career Development Program (CAREER) ([NSF 22-586](#))
 - Can include instrumentation, but includes other criteria that must be addressed in the proposal
 - Mid-Scale -- for projects > \$4 M ([NSF 22-637](#))
 - Strongly advised to talk to an NSF Program Director before submitting to Mid-Scale
 - Mid-scale R1 (up to \$20M)
 - Supports the design and implementation of research infrastructure — including equipment...