

Nuclear Physics Advocacy
Make Your Voice Heard in 2021!

Support Nuclear Physics Research

“...The isotopes, data, and technologies nuclear science will generate in the coming years will provide substantial new benefits to society...” - DOE/NSF Nuclear Science Advisory Committee

Federal investments in nuclear physics produce extraordinary discoveries and technical advances that fuel our nation’s economy, contribute to protecting our environment and our health and produce a highly skilled, tech-savvy workforce. The reason is clear: through investments made by the Department of Energy Office of Science (DOE-SC), U.S. researchers have the tools to better understand the universe and its fundamental particles and forces, and to drive innovation in far flung fields including medical imaging, drug design, cancer treatments, cargo inspection, criminal forensics, energy production, nuclear security and climate modeling.

The DOE-SC’s Nuclear Physics program sponsors vital scientific inquiry, including more than 4,000 researchers from dozens of universities nationwide. To make this research a reality, the Office of Science supports operations at three major nuclear physics facilities that enable scientists from across the country to carry out their research endeavors, while training the next-generation of scientists:

- **The Continuous Electron Beam Accelerator Facility (CEBAF)** at Thomas Jefferson National Accelerator Facility (Jefferson Lab) in Virginia is where more than 1,600 scientists study the fundamental structure of protons, neutrons, and nuclei and the forces that bind them, building a comprehensive understanding of the atom's nucleus.
- **The Relativistic Heavy Ion Collider (RHIC)** at Brookhaven National Laboratory in New York is, where 1,200 researchers recreate the super-hot conditions of the very early universe—250,000 times hotter than the center of the Sun—to study the building blocks of visible matter and their fundamental properties and forces. It is also the future home to the Electron Ion Collider, which will answer the age old question about the origin of mass, and what holds visible matter together and how.
- **The Facility for Rare Isotope Beams (FRIB)** at Michigan State University (MSU), the construction of which will be completed this year, will be the most powerful heavy-ion accelerator enabling 1,500 scientists to make discoveries about the properties of rare isotopes, nuclear astrophysics, fundamental interactions, and applications ranging from medicine to homeland security.

In addition to these major facilities, researchers also leverage ATLAS at Argonne National Laboratory, the 88" at LBNL and the University-based accelerators comprising ARUNA. The agencies also provide vital support for underground science, nuclear theory and international collaborations.

Our **Asks for FY2022**:

1. **In FY 2022, the Nuclear Physics request is \$780 million¹.** The nuclear physics research agenda is best enabled through a balanced portfolio of facility operations, research and construction of new capabilities. Therefore, support responsible “modest growth” funding² for the Nuclear Physics program consistent with the recommendations of the 2015 DOE/NSF Nuclear Science Advisory Community Long Range Plan which highlighted the unique value of nuclear physics research to national innovation leadership. To further promote these goals, support clear guidance related to operations, research, facilities and major equipment.
2. Support \$7.7 billion for the Office of Science in FY 2022, an 9.6% increase over FY 2021.
3. Support strong funding increases for the National Science Foundation (NSF).

¹ Note: This funding level does not include the now separate DOE funding request for the isotopes program.

² NSAC request is calculated according to its modest growth scenario, defined as a budget that increases by 1.6% in spending power above cost of living per year.

Nuclear Physics Funding Summary

	FY 2021 Level	FY 2022 Budget Request	Community Request	Change vs. FY 21
DOE Office of Science	\$7.026 billion	\$7.4 billion	\$7.7 billion	+9.6%
DOE Nuclear Physics Program	\$712 million	TBD	\$780 million ³	+9.6%
National Science Foundation	\$8.487 billion	\$10.17 billion	\$10.17 billion	+19.8%

The U.S. nuclear physics research community is grateful to Congress for its strong, continued support.

³ Note: This funding level does not include the now separate DOE funding request for the isotopes program.