



U.S. Department of Energy
and the
National Science Foundation



December 19, 2024

Professor Gail Dodge
Chair, Nuclear Science Advisory Committee
College of Sciences
Old Dominion University
4600 Elkhorn Avenue
Norfolk, Virginia 23529

Dear Professor Dodge:

We are grateful to the Nuclear Science Advisory Committee (NSAC) for their many contributions to the development of *A New Era of Discovery: The 2023 Long Range Plan for Nuclear Science*, which successfully laid out a compelling research program that employed world-leading facilities and exciting new capabilities. Now it is timely to consider more closely the unique international context of nuclear physics, and how we can best position the U.S. program and its researchers for success in this evolving landscape.

A core tenet of the NSAC *Long Range Plan* is that nuclear physics is fundamentally a global enterprise. The close connections of U.S.-based researchers and facilities to major international partners and offshore facilities are indicators of a nuclear physics enterprise that is tightly interwoven across borders and time zones. Today, the international nuclear physics community is larger and more diverse than ever before, expanding opportunities for collaboration and partnership.

Looking to the future, we want to ensure that the U.S. continues to be a leader in nuclear physics internationally, remains one of the best places to conduct research, and collaborates effectively at leading facilities hosted elsewhere. We want to be the best partner we can be for the international scientific community.

To that end, we must develop and maintain world-leading capabilities in key technologies, especially particle accelerators, detectors, and high-performance computing. In addition, we are obligated to provide compelling, equitable opportunities for all who want to explore nuclear physics at the most fundamental levels.

Therefore, the Department of Energy and the National Science Foundation request that NSAC develop a report providing further input on the unique international context of nuclear physics. Specifically, we ask NSAC to address the following questions:

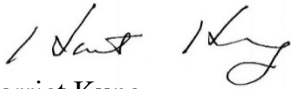
- How can the U.S. nuclear physics program maintain critical international cooperation in an increasingly competitive environment for both talent and resources? In areas where the U.S. is leading, how can we sustain our roles and attract the best international partners? In other areas, how can the U.S. build and maintain its reputation as a “partner of choice?” In general, are there barriers

that can hinder our ability to form effective and enduring international partnerships?

- What are the key areas where the U.S. currently has, or could aspire to, leadership roles in nuclear physics via its unique or world-leading capabilities (i.e., advanced scientific facilities and tools), or leading scientific and technical resources, including highly trained personnel and supporting infrastructure? This may include emerging areas or opportunities that offer significant promise for leadership. To preserve and foster U.S. leadership roles within reasonable resource constraints, are there particular technical areas or capabilities that could be emphasized? Are there other technical resources and capabilities that could be leveraged to achieve these goals, possibly through collaborations within and beyond the nuclear physics community?
- How can programs and facilities be structured to attract and retain talented people? What are the barriers to successfully advancing careers of scientific and technical personnel in nuclear physics and related fields, and how can U.S. funding agencies address those barriers? A complete answer to these questions must address how we can ensure that we are recruiting, training, mentoring, and retaining the best talent from all over the world, ~~including among traditionally underrepresented groups within the U.S.~~

We would appreciate the written report being submitted to NSAC for consideration in the Fall meeting in 2025.

Sincerely,



Harriet Kung
Deputy Director for Science Programs
Office of Science
U.S. Department of Energy



David Berkowitz
Assistant Director
Directorate for Mathematical and
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