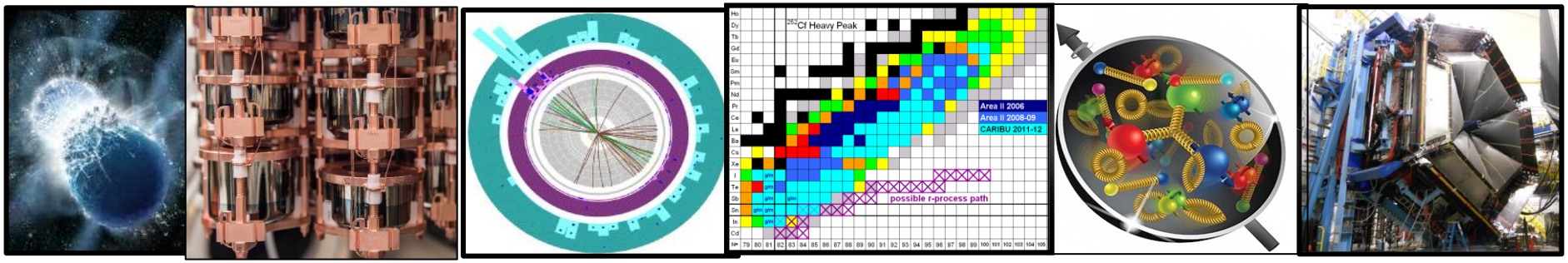
U.S. DEPARTMENT OF ENERGY | Office of Science

Charge for the Next Long Range Plan for Nuclear Science

NSAC Meeting

July 13, 2022

Dr. Timothy J. Hallman
Associate Director of the Office of Science
for Nuclear Physics



Charge to NSAC for the Next Long Range Plan for Nuclear Science

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

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

Dear Professor Dodge:

This letter requests that the Department of Energy (DOE)/National Science Foundation (NSF) Nuclear Science Advisory Committee (NSAC) conduct a new study of the opportunities and priorities for United States nuclear physics research and recommend a long-range plan (LRP) that will provide a framework for coordinated advancement of the Nation's nuclear science research programs over the next decade.

Charge to NSAC for the Next Long Range Plan for Nuclear Science

The new NSAC LRP should articulate the scope and the scientific challenges of nuclear physics today, what progress has been made since the last LRP, and the impacts of these accomplishments both within and outside the field. It should identify and prioritize the most compelling scientific opportunities for the U.S. nuclear physics program to pursue over the next decade (fiscal year (FY) 2023-2032) and articulate its potential scientific impact. Further, a nationally coordinated strategy for the use of existing and planned capabilities, both domestic and international, and the rationale for new investments should be articulated. To be most helpful, the LRP should indicate what resources and funding levels would be required, including construction of new facilities, mid-scale instrumentation, and Major Items of Equipment, to maintain a world-leadership position in nuclear physics research. The LRP should also describe the potential impacts and priorities under constant level of effort budgets, 2 percent growth per year using the FY 2022 enacted funding level as a reference.

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The extent, benefits, impacts, and opportunities of international coordination and collaborations afforded by current and planned major facilities and experiments in the United States (U.S.) and other countries, and of interagency coordination and collaboration in crosscutting scientific opportunities identified in studies involving different scientific disciplines should be specifically addressed and articulated in the report. Further, the scientific impacts of synergies with neighboring research disciplines and further opportunities for mutually beneficial interactions with outside disciplines should be discussed. The document should also articulate how efforts to promote and sustain a diverse, equitable, and inclusive nuclear science workforce will be fully integrated into every aspect of the vision for the future of U.S. nuclear science.

In the development of previous LRPs, the Division of Nuclear Physics of the American Physical Society (DNP/APS) was instrumental in obtaining broad community input by organizing town meetings of different nuclear physics sub-disciplines. The Division of Nuclear Chemistry and Technology of the American Chemical Society (NUCL/ACS) was also involved. We encourage NSAC to exploit this method of obtaining widespread input again and to further engage the DNP/APS and NUCL/ACS in laying out the broader issues of contributions of nuclear science research to society.

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Please submit your initial report to DOE and NSF by October 2023. The agencies very much appreciate NSAC's willingness to undertake this task. NSAC's previous LRPs have played a critical role in shaping the Nation's nuclear science research efforts. Based on NSAC's laudable efforts in the past, we look forward to a new plan that can be used to chart a vital and forefront scientific program into the next decade.

Sincerely,

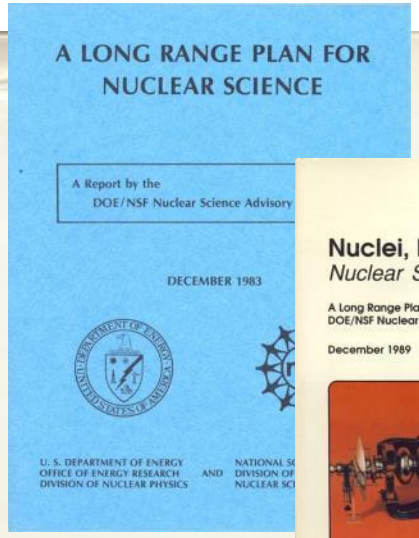
Asmeret Asefaw Berhe
Director
Office of Science

Sean L. Jones
Assistant Director
Directorate for Mathematical and Physical Sciences
National Science Foundation

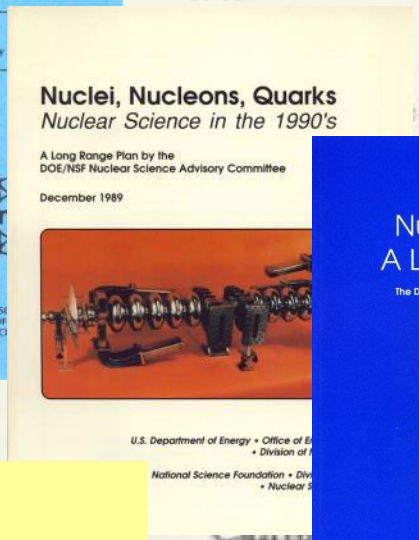
A Long Tradition of Effective Strategic Planning

1979

1983

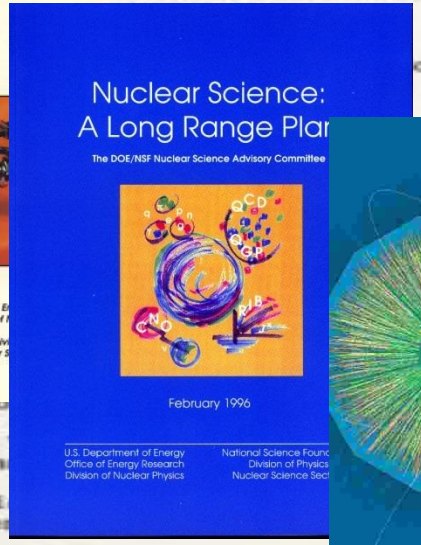


1989



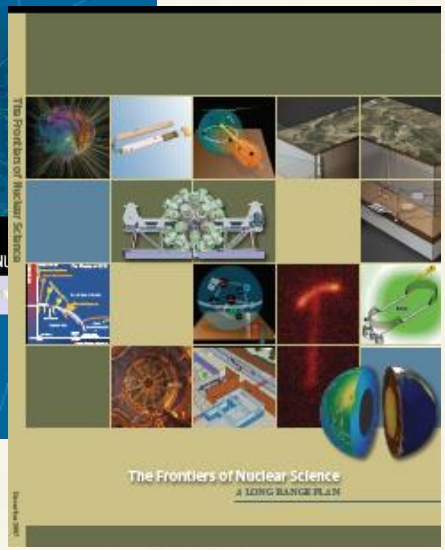
At a high level, the Nuclear Science Advisory Committee (NSAC) is periodically charged to provide recommendations regarding compelling science opportunities and their priority.

1996



2002

2007



Strategic plans are then developed to implement those priorities within the constraint of available funding.

SC/NP strategic plans are also influenced by National Academy reports and White House, OSTP and Interagency Working Group (IAWG) efforts.

High Level Steps in the NP Long Range Plan Process

- DOE and NSF jointly charge NSAC with developing a Long Range Plan (LRP) for Nuclear Science
- A Long Range Plan exercise is then begun by NSAC in coordination with the APS DNP. Typical time to develop a new LRP is 18 months.
- DNP convenes 3-4 topical Town Meetings that result in whitepapers
- NSAC forms a panel responsible for deliberating priorities and writing the LRP document
- The whitepapers are provided as input input to the NSAC panel
- A ”Resolution Meeting” follows where the DNP convenors and others present content, final priorities are determined, and writing assignments are made.
- The NP offices in DOE and NSF are kept informed throughout

Hallmarks of Previous Successful Plans

- Transparency
- Equitable, universal access to the means of having input
- Mutual respect
- Empathy
- Trust
- Statesperson-ship focused on the greater good
- Selflessness
- Compromise
- Vision
- Hard work
- Knowledge
- Technical Expertise
- Wisdom
- Experience
- Understanding the audience
- Communicating at the level of the audience
- Compromise
- Solidarity

A LONG RANGE PLAN FOR NUCLEAR SCIENCE

DECEMBER 1979

The DOE/NSF Nuclear Science Advisory Committee

Herman Feshbach
Massachusetts Institute of Technology, Chairman

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University of Pennsylvania

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Carnegie-Mellon University

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State University of New York at Stony Brook

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Florida State University

Thomas T. Sugihara
Texas A&M University

No Pressure