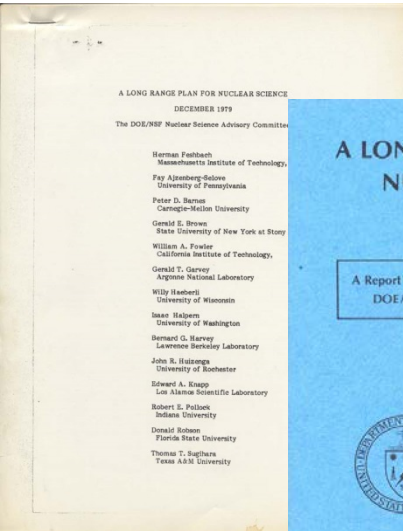
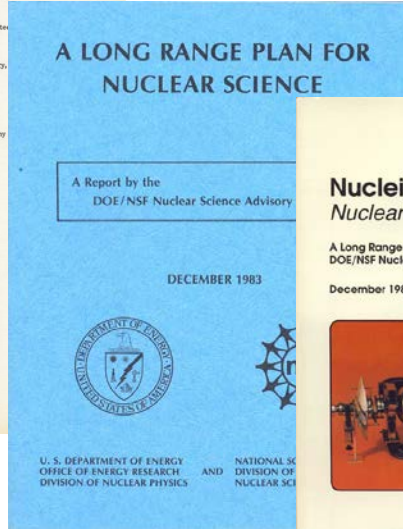


# The 2015 NSAC Long Range Plan

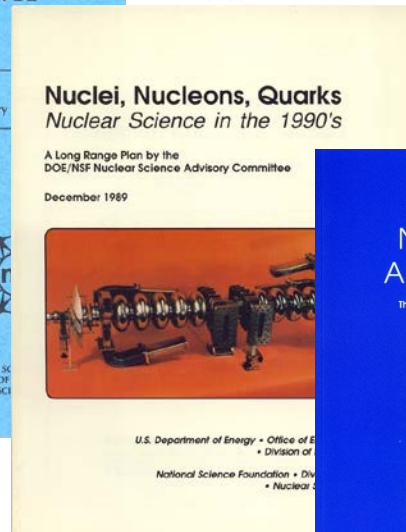
1979



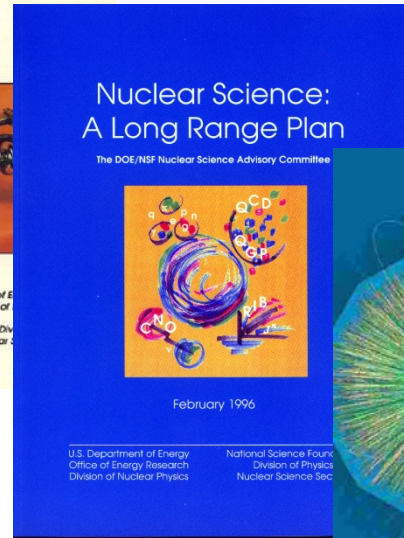
1983



1989



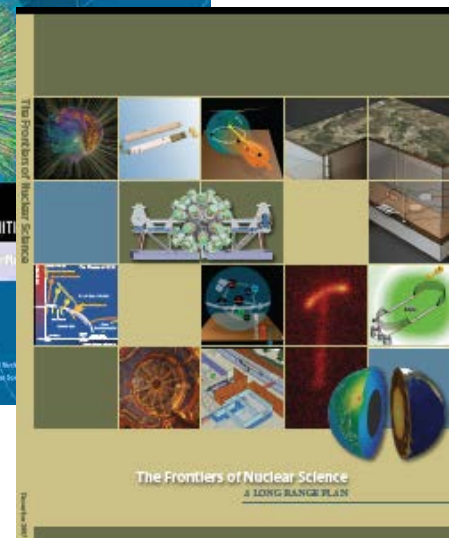
1996



2002



2007



# Web locations

You can find more information on the NSAC web site:

<http://science.energy.gov/np/nsac/>

This will give you the charge, membership of the Long Range Plan working group and a link to a site at ANL with further information such as the schedule for upcoming activities.

Argonne Site:

<http://www.phy.anl.gov/nsac-lrp/>

Link here to password protected area for distribution of material to LRP

# Anticipated LRP Schedule

- ✓ Charge delivered at 24 April NSAC Meeting
- ✓ LRP Working Group formed in early June ~ 60 members
  - NuPECC and ANPhA observers have recently agreed.
- ✓ Community organization this summer
- ✓ DNP town meetings in the July/September
- ✓ Joint APS-DNP-JPS Meeting Oct 7-11, 2014 – Wednesday afternoon discussion.
- ✓ Working Group organizational meeting Nov 16, 2014 in Rockville, MD
  - Time for more community meetings in November- January
  - White papers by end of January to have greatest impact
  - Cost review of EIC by February
  - Most of text of report assembled by April 10.
  - Resolution meeting of Long Range Plan working group April 16-20, 2015.
  - Draft report reviewed by external wise women and men.
  - LRP final report due October 2015

# Community Organized Town Meetings

- High Performance Computing: July 14-15, Washington, DC
- Education and Innovation: August 6-8, MSU
- Nuclear Structure and Astrophysics: August 21-23, Texas A&M
- QCD: September 13-15, Temple
- Fundamental Symmetries: Sept 28-29, Chicago

See <http://www.aps.org/units/dnp/meetings/town.cfm>

**I really want to thank the Division of Nuclear Physics and the conveners for their outstanding leadership here and the entire community for making these a success.**

# What the LRPWG Did Yesterday

- Discussion of the Charge
- Budget Discussion from Agencies
  - This information is confidential
  - Enough will be given to budget subgroup for to prepare straw budgets from which we will work
- Short discussion of writing subgroups
- Town meeting reports
- Discussion of nature and outline of report and agenda for April 16-20, 2015 meeting

# EIC Costing Subcommittee

Ed Temple (ANL) has agreed to chair the costing Subcommittee

12 members have been invited.

I am asking for a report by end of February

# Draft Costing Subcommittee Charge

Dear Dr. Temple,

Thank you for agreeing to chair the NSAC EIC costing subcommittee. The full membership of the subcommittee is:

Member 1

Member 2

....

The charge to the subcommittee is as follows:

As part of its long range planning process, the Nuclear Science Advisory Committee (NSAC) will be considering the scientific priority of one project identified in the 2007 NSAC Long Range Plan as embodying the vision for reaching the next QCD frontier, a polarized electron-ion collider. Since that time the community has developed white papers on the science case and goals for the machine design. The aim is achieving highly polarized electron and nucleon beams, with ion beams from deuteron to uranium or lead, variable center of mass energy from  $\sim 20$  to  $\sim 100$  GeV, upgradeable to  $\sim 150$  GeV, high collision luminosities of  $10^{33-34}$   $\text{cm}^{-2} \text{s}^{-1}$  and the possibilities of having more than one interaction region. At least two institutions, BNL and JLAB have developed designs for such a machine.

# Charge continued

Understanding that a detailed conceptual design has not been completed, the Subcommittee is asked to provide NSAC with its best current estimate of the costs of the projects, including R&D, construction, pre-operating and operating costs. NSAC is aware that there are uncertainties regarding siting and other issues that limit the precision of such an estimate at this time. Nevertheless, the advice of the Subcommittee will be of great value to NSAC as it evaluates the relative merit of this and other initiatives. Since the charge to NSAC for the long range plan explicitly discusses resources in terms of the 2015 President's Budget Request, we ask that the results of this review be presented in FY2015 dollars. If the laboratories choose to present staging options to incrementally reach the science goals, please consider these as well.

The subcommittee is asked to provide a written report to NSAC by the end of February 2015. I expect it will be considered by NSAC in a meeting in late March 2015.

Your experience, as well as that of the other subcommittee members, will be invaluable for this exercise. Thank you again for agreeing to lead this subcommittee. I realize this is a heavy responsibility. I, and the entire community, will owe you an enormous debt of gratitude.



# Summary

- There are exciting new scientific challenges across nuclear physics.
- There has been major progress in fulfilling the promise of the 2007 Long Range Plan.
- The new Long Range Plan is the time for the community to say what the future should be.
- The issues we face are complex, balancing research, operations and construction, but the opportunities appear very bright.

# Charge to NSAC to Develop a New Long Range Plan



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



Dr. Donald Geesaman  
Chair  
DOE/NSF Nuclear Science Advisory Committee  
Argonne National Laboratory  
9800 South Cass Avenue  
Argonne, Illinois 60439

Dear Dr. Geesaman:

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 that will provide a framework for coordinated advancement of the Nation's nuclear science research programs over the next decade. This exercise should exclude the DOE Isotope Program managed by the DOE Office of Science's Office of Nuclear Physics, for which a dedicated strategic planning exercise will be convened.

# Charge to NSAC to Develop a New Long Range Plan

The new NSAC Long Range Plan (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 of the field. It should identify and prioritize the most compelling scientific opportunities for the U.S. program to pursue over the next decade and articulate their scientific impact. A national 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 and what the impacts are and priorities should be if the funding available provides for constant level of effort from the FY 2015 President's Budget Request into the out-years (FY 2016-2025), with constant level of effort defined using the published OMB inflators for FY 2016 through FY 2025. A key element of the new NSAC LRP should be the Program's sustainability under the budget scenarios considered.

The extent, benefits, impacts and opportunities of international coordination and collaborations afforded by current and planned major facilities and experiments in the U.S. and other countries, and of interagency coordination and collaboration in cross-cutting scientific opportunities identified in studies involving different scientific disciplines should be specifically addressed and articulated in the report. The scientific

# Charge to NSAC to Develop a New Long Range Plan

impacts of synergies with neighboring research disciplines and further opportunities for mutually beneficial interactions with outside disciplines, should be discussed.


In the development of previous LRP's, 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 (DNC&T/ACS) was also involved. We encourage NSAC to exploit this method of obtaining widespread input again, and to further engage both the DNP/APS and DNC&T/ACS in laying out the broader issues of contributions of nuclear science research to society.

Please submit your report to DOE and NSF by October 2015. The agencies very much appreciate NSAC's willingness to undertake this task. NSAC's previous LRP's have played a critical role in shaping the Nation's nuclear science research effort. 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,



Patricia M. Dehmer  
Acting Director  
Office of Science



F. Fleming Crim  
Assistant Director  
Directorate for Mathematical  
and Physical Sciences