

YALE UNIVERSITY

A. W. WRIGHT NUCLEAR STRUCTURE LABORATORY

P.O. Box 208124, 272 Whitney Avenue, New Haven, Connecticut 06520-8124

OFFICE OF THE DIRECTOR

November 13, 2003

Dr. Raymond Orbach
Director
Office of Science
U.S. Department of Energy
1000 Independence Avenue, SW
Washington, DC 20585

Dr. Michael S. Turner
Assistant Director
Directorate for Mathematical & Physical Sciences
National Science Foundation
4201 Wilson Boulevard
Arlington, VA 22230

Dear Drs. Orbach and Turner:

On September 12, 2003, the DOE/NSF Nuclear Science Advisory Committee (NSAC) was asked to provide guidance relating to Performance Measures and Milestones for the Nuclear Physics program in the DOE Office of Science. The Performance Measures reflect the goals of the U.S. Nuclear Physics Program at DOE but, of course, they have wide influence on the NSF program and on researchers throughout the country. They are intended to guide Program management and to foster excellent research and, at the same time, to lead to enhanced accountability. NSAC was asked both to comment on the existing Performance Measures as to validity, ambitiousness and scope, and to recommend specific Milestones that will allow expert review Panels to assess progress in the pursuit of these goals.

NSAC formed a sub-committee, chaired by Don Geesaman of Argonne National Laboratory, to prepare a response to this charge. This sub-committee has completed its work and presented its Report to NSAC at a meeting on November 7-8, 2003. NSAC unanimously accepted the Report and a copy is enclosed with this letter.

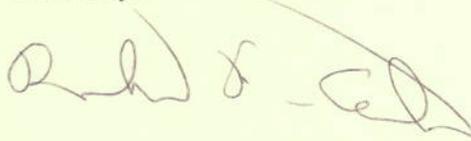
The Report comments on the Performance Measures and identifies Milestones consistent with the 2002 NSAC Long Range Plan for Nuclear Science, in the four broad areas of Nuclear Science; namely, hadronic physics, physics of high temperature and high density hadronic matter, nuclear structure and astrophysics, and neutrinos, neutrino astrophysics and fundamental interactions. It finds that the Performance Measures are appropriate and suitably ambitious and validly encompass the DOE Nuclear Physics Program in the sense that they provide clear and sufficient guidance for expert review to meaningfully evaluate the performance of the program.

The recommended Milestones were developed assuming a constant level of effort budget that does not allow for pursuit of many of the highest priorities and opportunities of the NSAC Long Range Plan. The Milestones describe an exciting research enterprise whose many significant advances are testimony to the breadth, depth, and vitality of the field. However, NSAC emphasizes that the achievements and understanding of Nature that would result with enhanced funding are truly exceptional and have been documented in the Long Range Plan. The present Milestones should not be considered as an adequate reflection of what could be achieved with greater support.

The Report correctly warns about the dangers of viewing the present Milestones in too rigid a context, and stresses that the Milestones serve, in many cases, as examples of important progress to be made rather than as the only definition of such progress. These Milestones should not be used to stifle innovative ideas or to constrain the exploitation of unforeseen discoveries. Moreover, the Report strongly urges that these Milestones be considered a work-in-progress, subject to periodic review and revision as on-going research forges new paths.

Well handled, the guidance on Milestones and Performance Measures can help evaluate progress in the field of nuclear science into an exciting future as new horizons for nuclear research open. We urge that these Milestones be taken for what the sub-committee envisaged, namely as flexible markers that bring focus to the broad U.S. research effort in nuclear science but which can be adapted as developments alter our perspectives of the most important questions at hand.

Sincerely,

A handwritten signature in dark ink, appearing to read 'Richard F. Casten', with a long horizontal stroke extending to the right.

Richard F. Casten
Chair, NSAC

cc: Dehmer
Hunt
Keister
Kovar
Steadman
NSAC members