

MICHIGAN STATE
UNIVERSITY

September 30, 1998

Dr. Robert A. Eisenstein
Assistant Director
Mathematical and Physical Science
National Science Foundation
4201 Wilson Boulevard
Arlington, VA 22230

Dr. Martha Krebs
Director
Office of Energy Research
U.S. Department of Energy
Washington, DC 20585

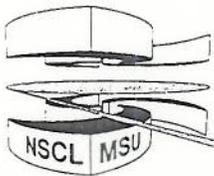
Dear Dr. Eisenstein and Dr. Krebs:

On behalf of NSAC, I am responding to your letter of June 5, 1998, requesting NSAC to reexamine and evaluate the scientific opportunities identified in the area of "To the Quark Structure of Matter" in NSAC's 1996 Long Range Plan (LRP), and to make recommendations of priorities consistent with projected resources available to the DOE Medium Energy Program.

To help formulate a response, NSAC established a Subcommittee on DOE-Sponsored Medium Energy Nuclear Science, chaired by Dr. James Symons (LBNL). The Subcommittee's report is enclosed. NSAC accepts the Subcommittee's report and endorses its recommendations for scientific priorities.

The Subcommittee concludes and NSAC concurs that: 1) an outstanding and world-leading medium energy nuclear science program is in progress in the U.S., 2) the present budget level, not major developments unanticipated in the LRP, has led to the present program pressures, and 3) significant imbalances and substantial losses in scientific return on recent investment in the medium energy program will become unavoidable in all but the most favorable budget scenarios outlined in your letter.

The Subcommittee concludes and NSAC concurs that highest priority be given to effective utilization of Jefferson Laboratory and support of a balanced program of medium energy nuclear science in all budget scenarios. Without additional funding beyond the FY1999 constant effort level, U.S. world leadership in this field will be jeopardized, and there will be significant sacrifice of excellent science:



Dr. Claus-Konrad Gelbke
University Distinguished
Professor and Director

**NATIONAL
SUPERCONDUCTING
CYCLOTRON
LABORATORY**

Michigan State University
East Lansing, Michigan
48824-1321

TEL: 517/333-6300
FAX: 517/353-5967
gelbke@nsci.msu.edu

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- An excellent and unique scientific program with the BLAST detector at MIT/Bates would not be realized.
- The premature loss of the MIT/Bates facility would eliminate outstanding educational opportunities at a premier university laboratory.
- Termination of nuclear physics at the AGS would lead to further losses of excellent science and educational opportunities and would severely impact the balance of the program.

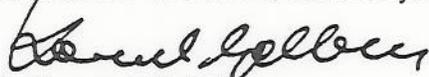
These losses in science and education can still be avoided with a 10-15 % upward adjustment of the DOE Medium Energy Budget beginning with FY2000. This would allow the U.S. to reap the scientific benefits of past investments including proper operation of Jefferson Laboratory, to realize outstanding new initiatives that are essential for continued vitality and balance of the field, and to maintain the technical strength of university groups. We would continue our world leadership in medium energy by:

- capitalizing on the significant investment at Bates by completing its program,
- executing high-impact experiments with hadronic beams at the AGS.

The charge addresses but one component of the entire nuclear physics program. NSAC is cognizant of additional pressures in the remaining parts of the nuclear physics program and reaffirms the priorities of the 1996 LRP.

Throughout the years, the NSAC long range planning process has provided a realistic and well thought out road map to ensure U.S. world leadership in nuclear science. By its nature, this research requires long term investments and continued steady government stewardship to allow these plans to come to fruition and avoid wasting scientific talent and recent major capital expenditures. NSAC notes that the additional funds needed are well in line with funding increases provided for other agencies supporting basic research programs of similar quality and importance. These needs are increasingly recognized and supported by members of Congress.

On behalf of NSAC, sincerely,



C. Konrad Gelbke
Chairman, NSAC