



INSTITUTE FOR FUSION STUDIES
THE UNIVERSITY OF TEXAS AT AUSTIN

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December 10, 2002

Dr. Ray Orbach
Director, Office of Science
U.S. Department of Energy
1000 Independence Avenue, S.W.
Washington, D.C. 20585

Dear Dr. Orbach:

The Fusion Energy Sciences Advisory Committee (FESAC) has reviewed the attached report, "Fusion Simulation Project: Integrated Simulation and Optimization of Magnetic Fusion Systems." I now submit the report to you with FESAC's unqualified endorsement. FESAC considers the advanced computation frontier examined in the report as one of the most exciting in its purview.

In February, 2002, Acting Director James Decker charged FESAC to develop "a roadmap for a joint initiative with the Office of Advanced Scientific Computing Research" with the goal of developing "an improved capacity for Integrated Simulation and Optimization of Fusion Systems." FESAC responded by appointing a 16-member panel, chaired by Dr. Jill Dahlburg, which included computational experts recommended by the Office of Advanced Scientific Computing Research as well as fusion scientists.

In its attached report, the panel recommends that "a major initiative be undertaken...[to create] a comprehensive set of theoretical fusion models, an architecture for bringing together the disparate physics models, combined with the algorithms and computational infrastructure that enables the models to work together." The report then proceeds to construct a roadmap for accomplishing these objectives. It stresses the importance of close coupling between computation and experiments.

FESAC believes that this initiative would bring huge benefits to fusion research and to the fusion energy goal. The accompanying roadmap reflects careful scientific judgment; we find it sensible and persuasive and are grateful to Dr. Dahlburg and her panel for their hard, valuable work.

Yours truly,

A handwritten signature in black ink, appearing to read "R. Hazeltine".

Richard Hazeltine
Chair, Fusion Energy Sciences Advisory Committee

Enclosure
cc: N. A. Davies
FESAC