



**Department of Energy**  
Washington, DC 20585

February 4, 2015

Professor Mark Koepke  
Chair, Fusion Energy Sciences Advisory Committee  
Department of Physics – White Hall 203  
West Virginia University  
1315 Willey Street  
Morgantown, WV 26506

Dear Professor Koepke:

The explanatory statement accompanying the Consolidated and Further Continuing Appropriations Act, 2015 (Public Law 113-235) requires the Office of Science to submit to the Committees on Appropriations of the House of Representatives and the Senate "... a report on the contribution of fusion energy sciences to scientific discovery and the development and deployment of new technologies beyond possible applications in fusion energy." We ask that the Fusion Energy Sciences Advisory Committee (FESAC) prepare a report on this topic.

Your report should consider a wide range of connections between research performed throughout the Fusion Energy Sciences (FES) portfolio and other scientific disciplines and technological applications. Applications beyond fusion energy will naturally focus on the curiosity-driven research areas of the FES portfolio (e.g., basic plasma science, low temperature plasma, space and astrophysical plasma, etc...), but may also involve spin-offs from anywhere in this portfolio.

Also, please consider scientific and technical applications of fusion and related plasma science to other branches of science. Even more broadly, please consider contributions to new scientific developments and technologies beyond possible applications in fusion energy related, but are not limited, to areas such as energy and the environment, materials science, medical diagnostics and treatment, biology, national security, and industry.

In your report, for each connection that you identify, please feel free to comment on how well the contributions of FES are advancing the interests of society and meeting its needs, and ensuring the Nation's competitiveness in the physical sciences and technology.

In preparing your assessment, we request that you engage some experts outside of the FES community to help evaluate possible applications beyond fusion. Please submit your report to me by May 15, 2015.

Sincerely,

A handwritten signature in black ink, appearing to read "Patricia M. Dehmer".

Patricia M. Dehmer  
Acting Director, Office of Science

