



Department of Energy

Office of Science
Washington, DC 20585

November 5, 2018

Announcement of FES Long-Range-Strategic Planning Activity

Dear Colleagues:

I write to inform you about the launch of a new long-range strategic planning activity for the Fusion Energy Sciences (FES) program, in which both the U.S. fusion plasma science community and the Fusion Energy Sciences Advisory Committee (FESAC) will be involved.

First, let me take the opportunity to thank the community for all of its efforts to provide information for the National Academy of Sciences (NAS) Burning Plasma Study. The community's efforts included organizing the town hall meetings that were held in Madison, WI, and Austin, TX, during 2017. I am sure that all of this information was extremely helpful to the NAS study, which is now moving toward completion of its final report. These two town halls also provided an excellent venue for the community to discuss the directions of the magnetic confinement part of the FES program.

In addition to this activity, over the last several years the community has come together and, through a series of workshops, has provided to our office valuable information on possible research directions across the FES program. The initial set of 2015 workshops helped us immensely in developing and implementing the FES program plan *Fusion Energy Sciences: A Ten-Year Perspective (2015-2025)*¹. These initial workshops, as well as subsequent workshops that the community has organized in recent years, have helped to guide us in our decision-making across the program to address the most pressing scientific challenges as well as to start new initiatives. Again, let me convey our thanks to the community for your time and effort to make all of these workshops a success.

In the budget allocations appropriated for the last two fiscal years (FY 2018 and 2019), the FES program received significant funding increases and support from Congress. These increases have allowed the FES program to accomplish a number of important programmatic activities, including enhancing the DIII-D facility capabilities; accelerating the NSTX-U recovery; expanding our theory/simulation, international collaboration, and discovery science programs; and initiating construction of a new, world-leading materials experimental testing facility (MPEX), to name a few. We also made our first in-cash contribution to the ITER Organization since FY 2015. All of this has strengthened the FES program across many scientific frontiers and formed the basis for a stronger program going forward.

Given this Congressional support and all of these recent efforts by the community and given that the NAS Burning Plasma Study report is on the verge of completion, we believe that the time is right to initiate an activity with the community and with FESAC to develop a new long-range strategic plan for the FES program. Several years ago FESAC worked hard, twice, to try to accomplish this very difficult task. Unfortunately, the plans thus developed lacked broad consensus. Now, at the present time, we believe that the community's efforts described above have built momentum and helped all of us to gain confidence that our community, together with FESAC, can successfully develop a long-range plan, having broad consensus, for the FES program.

Two program offices within the DOE Office of Science—the High Energy Physics program (HEP) and the Nuclear Physics (NP) program—have noteworthy experience in strategic planning. Our office has engaged with both of these offices to understand the processes that they used, how these processes were organized and led, and what challenges were encountered. We are grateful for these discussions and their advice to us. I encourage you to take a look at their reports: *Building for Discovery: Strategic Plan for U.S.*

¹ https://science.energy.gov/~media/fes/pdf/program-documents/FES_A_Ten-Year_Perspective_2015-2025.pdf

Particle Physics in the Global Context-Report of the Particle Physics Project Prioritization Panel (P5) (May 2014)² and *Reaching for the Horizon: The 2015 Long Range Plan for Nuclear Science*³.

The HEP and NP program offices both used their respective American Physical Society (APS) divisions to organize community-led activities, which involved town halls, workshops, white papers, and-in the case of HEP-a final integrated get-together called "Snowmass on the Mississippi." All of the community input was then turned over to their respective federal advisory committees for final prioritization and the writing of the resultant report.

We wish to use a similar approach, namely, that of requesting the APS Division of Plasma Physics (DPP) Executive Committee to help with the organization of the community-led activities. We want the community to be truly involved in this long-term planning process. We are grateful that the DPP leadership are willing to provide this valuable sponsorship of the community-driven first phase.

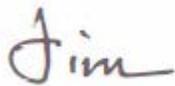
The second phase of the process involves a charge to FESAC. This charge will be provided at or before the next FESAC meeting, scheduled for December 6 and 7, 2018, in North Bethesda, MD. (Location details are posted on the FESAC web site.) Details of the FESAC charge, which will include guidance budget scenarios (as did the HEP and NP charges to their advisory committees), are still being developed. This charge, unlike the two previous program prioritization charges to FESAC several years ago that focused only on magnetic confinement fusion, will encompass the entire FES portfolio so that all parts of the FES program are integrated into one long-range plan.

Although this charge will be discussed at the December FESAC meeting, no FESAC subcommittee to address the charge will be formed at that time. Our wish is that the community, under the sponsorship of the DPP, will organize itself and hold discussions, town halls, workshops, and any other forums it chooses. Toward the end of the community's process to develop its important input for planning, a FESAC subcommittee will be formed to carry out its work of developing the final long-range plan. The full FESAC, as the official federal advisory body for the FES program, will be responsible to review, edit, and decide whether to approve the report.

The excellent reports from the recent workshops, as well as the findings and recommendations in the soon-to-be-released NAS Burning Plasma Study, will be very useful to the community in its phase one activities and to FESAC in phase two.

With all of the recent significant efforts by the community across the FES program portfolio, we believe that a solid initial foundation has been formed upon which to launch and build this long-range planning process. Utilizing that foundation should allow some acceleration of the process, so we are asking that both the community and FESAC activities be completed, if possible, by December 2020. We ask that the community, working with APS/DPP, now begin its part of the long-range planning process.

Sincere thanks,



James W. Van Dam
Acting Associate Director of the Office of Science
For Fusion Energy Science

² https://science.energy.gov/~media/hep/hepap/pdf/May-2014/FINAL_P5_Report_053014.pdf

³ https://science.energy.gov/~media/np/nsac/pdf/2015LRP/2015_LRPNS_091815.pdf