

Announcement for community workshop on Strategic directions for U.S. magnetic fusion research

Workshop 2: December 11-15, 2017 in Austin, TX

I. Overview

This document is an announcement for the 2nd workshop in a series of magnetic fusion community workshops to enable community presentation and discussion focused on the recent charge to the National Academies of Sciences (NAS), Engineering, and Medicine (http://sites.nationalacademies.org/BPA/BPA_177107). The goal of this series of workshops is to foster community discussion and consensus-building toward a compelling strategic plan for the U.S. magnetic fusion research program. Information on the 1st workshop in this series can be found at https://sites.google.com/site/usmfrstrategicdirections/workshop01_madison.

The 2nd workshop will be held in Austin, TX on Dec. 11-15, 2017. The purpose and timing of this workshop within the overall process is described in Section II below. In this context, the primary goal of the Austin workshop will be to discuss, debate, and develop critical information required for the timely development of a strategic plan including program mission and goals, and the importance of various strategic program elements needed to achieve those goals.

This is in preparation for providing the NAS panel input on the second charge for their final report due in the fall of 2018.

In two separate scenarios in which, after 2018, (1) the United States is a partner in ITER, and (2) the United States is not a partner in ITER: provide guidance on a long-term strategic plan (covering the next several decades) for a national program of burning plasma science and technology research which includes supporting capabilities and which may include participation in international activities, given the U.S. strategic interest in realizing economical fusion energy in the long term.

The information produced by this workshop will provide the basis for developing a comprehensive strategic plan that blends the attractive elements of the proposed strategic approaches. A key consideration of this comprehensive strategic plan will be the specific note in the NAS charge that the panel should assume that economical fusion energy within the next several decades is a U.S. strategic interest.

II. Anticipated Process for Developing a Community-Sponsored Strategic Plan

Because of the short timetable for providing strategic planning information to the NAS, the program committee has developed the following approach to streamline discussion and development of a community-sponsored strategic plan:

Things to Do Soon:

- 1) Propose additional working groups for improving the effectiveness and outcome of the Austin workshop by Oct. 4, 2017. See Section II.
- 2) Make hotel reservations at the Omni Hotel. See Section III.

Working groups will be convened prior to the Austin workshop. These working groups will develop information on key issues relevant and urgent for the formation of a U.S. fusion research strategic plan. The working groups will present their findings at the Austin workshop with breakout sessions held subsequent to these presentations to get community feedback on the working group findings. The information produced by this 2nd workshop will then provide the basis for developing a comprehensive strategic plan that blends the attractive elements of the proposed strategic approaches (see working group topics below) and program elements that achieved a sufficient level of consensus at the Austin workshop.

The program committee recognizes that developing a strategic plan of this scope and mission will be difficult to achieve in large-group settings on the NAS final report timetable. Provided that the 2nd workshop is successful in developing the necessary background information for development of a strategic plan, the program committee is tentatively planning to establish a small working group to develop a draft strategic plan (or plan options) to be considered at a 3rd community workshop to be held in the spring of 2018. It is envisioned that this post-Austin working group will seek input from the community on specific strategic plans (or parts of plans) that they should consider. Once prepared, the strategic plan will be made available to the community and then discussed, debated, and refined at the 3rd / spring workshop. The program committee will solicit input from the community at the upcoming APS-DPP meeting as to the appropriateness of this approach and timeline.

The timeline for this working group is consistent with a goal of developing and presenting a community-supported strategic plan to NAS in sufficient time for inclusion in their final report. However, sufficient consensus on a community-based strategic plan is essential to the long-term support and viability of the plan. If sufficient consensus cannot be achieved, several strategic plan options will be presented to NAS and additional/future strategic planning activities will be held to converge toward a single strategic plan.

Critical to the success of the strategic planning working group will be incorporation of community views and critical assessments on several topics that provide essential contextual information for the development of a strategic plan. Community working groups will be convened in the coming weeks to develop information on these topics for discussion at the Austin workshop. These topics currently include:

- Principles, metrics, and criteria for assessing the strategic plan
- Technical and programmatic impact of U.S. access to ITER
- Market attractiveness of fusion energy – what should US fusion be striving to deliver
- Opportunities for the U.S. to benefit from strategic international partnerships
- Gap analysis, strategic objectives, risks, and roadmap for strategic approaches identified by the program committee for delivering fusion energy in the next several decades
- Other community suggested working group ideas

A follow-on announcement will further clarify the working groups currently in preparation as well as define membership and participation opportunities in these working groups.

Call for Additional Working Group Suggestions: The program committee also invites the community to make further suggestions on working groups that they believe would be beneficial in improving the effectiveness and outcome of the Austin workshop, including specific strategic

approaches that should be considered. Ideas should be submitted to Mickey Wade (wade@fusion.gat.com) by October 13, 2017 for consideration.

III. Workshop Logistics

Website: The workshop website is: <https://sites.google.com/site/usmfrstrategicdirections> and also here: www.usmfrsd.org

If you have any questions or comments, please contact the meeting co-chairs: David Maurer, Jon Menard, and Mickey Wade: maurer@physics.auburn.edu, jmenard@pppl.gov, and wade@fusion.gat.com

Agenda: The workshop agenda will consist of presentation and discussion of the findings of the various working groups in the mornings and breakout discussions of these topics in the afternoon. As appropriate, the program committee will include additional presentations/topics important to the strategic planning process. An approximate (and very subject to change) day-by-day outline of the agenda follows based on the current set of working groups:

- Monday AM: Workshop scope/mission; Principles/Metrics/Criteria; Fusion Attractiveness
- Monday PM: Breakout Discussion on Principles/Metrics/Criteria + Fusion Attractiveness
- Tuesday AM: Impact of Access to ITER; International Partnerships; Community-suggested working group(s)
- Tuesday PM: Breakout Discussion on Access to ITER + International Partnerships + Community-suggested working group(s)
- Wednesday AM: Interim Report of Breakout Discussions; Strategic Approaches #1 & #2
- Wednesday PM: Breakout Discussion on Strategic Approach #1; Strategic Approach #2
- Thursday AM: Strategic Approach #3; Strategic Approach #4
- Thursday PM: Breakout Discussion on Strategic Approach #3 + Strategic Approach #4
- Friday AM: Summary Reports of Breakout Discussions; Workshop Summary; Path Forward

Hotel Registration: A block of rooms has been reserved at the Omni Hotel in Downtown Austin at a reasonable cost (\$146 government rate, \$165 others). As this room block has enabled the organizers to secure the meeting rooms necessary for the workshop at minimal costs, we strongly encourage participants to stay at Omni Hotel. A website has specifically been set up to expedite your reservation into this room block at <https://www.omnihotels.com/hotels/austin-downtown/meetings/fusion-community-strategic-planning-meeting>.

Conference Registration: It is expected a registration fee of \$150 will be charged to cover the costs for meeting space and logistical support in Austin. Once the registration web site is available, a separate e-mail will be sent out with information on registering for the workshop.

IV. Travel Funding and Conference Registration

These workshops are community-led and not directly sponsored by FES. However, FES has indicated that workshop participants funded by grants, cooperative agreements, and national labs have the discretion to use available funding to travel to the workshops provided that the workshop is related to ongoing work and no contract deliverables are jeopardized by the travel. Workshop attendance should be treated as analogous to attending an annual APS-DPP meeting.

V. Program Committee

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