

FORUM FOR MAJOR NEXT-STEP FUSION EXPERIMENTS

April 27 – May 1, Madison, Wisconsin

Community wide discussion forums are being planned motivated by the recommendation of the FESAC Panel chaired by Hermann Grunder that "...it is prudent for the international community to examine options [for ITER] that involve reconsideration of the fundamental trade-offs between cost, risk and mission...directed at examining lower-cost, reduced scope options in the interest of achieving a fusion-energy-producing plasma experiment on the fastest possible schedule" and "In preparation for this international activity, it is essential that the United States initiate a domestic study with broad fusion community involvement to explore the many options." The DOE has asked Dr. Charles Baker of USCD to lead a process to solicit from the US fusion community a broad range of options for reducing the cost of ITER, to involve all elements of the US fusion community in the process, and to report these community views to FESAC in July 1998.

The first forum of this type is being planned for April 27 – May 1 in Madison, Wisconsin, sponsored by the University Fusion Association together with GA, LLNL, MIT, ORNL, PPPL, and VTL. Objectives of this "Forum for Major Next-Step Fusion Experiments" are: (1) Identify range of options and objectives for major next-step experiments in support of fusion energy development with broad community involvement; (2) Establish a broad consensus within the community around the pursuit of a few options whose implementation would be contingent on domestic and international budget developments; and (3) Issue a report summarizing the areas where consensus has been reached, establish a context and strategy for pursuit of any next-step options, and identify issues which remain unresolved with a plan for addressing them at a follow-on meeting tentatively planned for May or June. The meeting format will strongly emphasize broad discussion, with more than half of the schedule reserved for open discussion.

If you are an active participant in the fusion energy sciences program, you are strongly encouraged to attend this Forum, whether to simply become better-informed or to present a view on this issue for consideration by your colleagues. Since any major next-step experiment spans decades from inception to completion, all members of the community and particularly junior researchers are encouraged to attend this meeting. This is a critical opportunity for the community-at-large to seriously consider the appropriate direction of a major fraction of the fusion research program. Success in this endeavor will hinge on achieving broad participation and input from the fusion energy sciences community.

Shown below is a draft agenda for the Forum together with a list of members of the Organizing Committee who have been assigned responsibility to assemble a coherent program of topics and speakers to cover important views on the specific Forum agenda element. All members of the community who would like to present or contribute material related to one of the agenda elements in this Forum should contact, as soon as possible, one of the listed organizing committee members (and the co-chairs) expressing their interest.

Additional details on the Forum schedule, how to participate, and hotel and registration information can be found at <http://nso.ucsd.edu> or please contact one of the meeting co-chairs:

James Drake,	University of Maryland;	drake@glue.umd.edu
Gerald Navratil,	Columbia University;	navratil@columbia.edu
William Nevins,	LLNL;	nevins@llnl.gov

Forum for Major Next-Step Fusion Experiments
27 April - 1 May 1998, Madison, WI
Organizing Committee Responsibility/Draft Agenda

Monday (9-12; 1:30-6:00)

- 1.1 Intro/Fusion Program Status
J. Drake, G. Navratil, W. Nevins
- 1.2 International fusion program: issues and views
T. Taylor, H. Weitzner, (C. Baker)
- 1.3 Science, Economic & Environmental Issues
J. Drake, W. Ellis, J. Perkins, F. Najmabadi, T. Taylor
- 1.4 ICF: NIF & IFE
J. Perkins

Tuesday (8-12; 1:30-5:30)

- 2.1 Preliminary Discussion of Strategies for Fusion Development
J. Drake, G. Navratil, W. Nevins
- 2.2 Physics Issues to be Addressed by Major Next-Step Expts.
F. Cheng, W. Dorland, J. Van Dam, S. Zweben
- 2.3 Technology Roles & Issues to be Addressed by
Major Next-Step Experiments
D. Smith, K. Wilson
- 2.4 ITER & ITER with technical modifications
W. Stacy (C. Baker)

Forum Cocktail Party/Buffer Dinner (6:30 - 9:00)

Wednesday (8-12; 1:30-5:30)

- 3.1 SC - Reduced ITER Mission
B. Montgomery
- 3.2 Normal Conductor/Long Pulse Burning Plasma
E. Lazarus
- 3.3 Normal Conductor/Short Pulse Burning Plasma
I. Hutchinson, D. Meade, T. Luce
- 3.4 Other Major Next-Step Options
W. Dorland, H. Neilson, M. Peng, (M. Saltmarsh)

Thursday (8-12; 1:30-5:30)

- 4.1 Advance Physics Base Using Smaller Facilities
S. Cowley, R. McWilliams
- 4.1 Strategies for Fusion Development
M. Brown, J. Drake, G. Navratil, W. Nevins,
J. Davis, H. Weitzner, (R. Goldston)
- 4.3 Discussion I: J. Drake, R. Hawryluk, G. Navratil, W. Nevins
 - Issues for Fusion Energy Development
 - Identify set of possible strategy options

Friday (8-12)

- 5.1 Discussion II: J. Drake, R. Hawryluk, G. Navratil, W. Nevins
 - Set of credible strategy options
 - Draft Workshop Report

Key Questions to Address & Forum Presentation Format

Prospective participants in the Forum are asked to contact the responsible member(s) of the organizing committee and working with them to direct their contributions toward answering one or more of the following key questions:

- 1) What are the science & technology issues we must address to develop magnetic fusion energy?
- 2) What are the credible near & medium term strategies for magnetic fusion energy development?
 - Physics: Basis/Expected Advance
 - Technology: Basis/Expected Advance
 - Environmental Support
 - International Participation
 - Domestic Political Support
- 3) What are the advantages & disadvantages of options for major next-step experiments (in support of Question 2) and which should be pursued further?
- 4) What physics & Technology basis do we need to proceed with these major next-step magnetic fusion experiments?

If requests by individuals in the community for opportunities to speak cannot be reasonably accommodated within the allotted time, a rapporteur format will be employed as appropriate. However, every effort will be made to accommodate (and encourage) presentation of community organized viewpoints on the agenda topic area.

The Each agenda element will be planned with greater than 50% of the allotted time scheduled for discussion.

The presentation format will consist of the organized program of speakers with clarifying questions only allowed from the audience. During the discussion period, the session speakers will form a panel allowing for discussion between panel members and the audience. There will be a 1 viewgraph/2 minute limit for questions from the floor.

ORGANIZING COMMITTEE: FORUM FOR NEXT-STEP FUSION EXPERIMENTS

Co-chairs: J. Drake – G. Navratil – W. Nevins

Columbia	A. Boozer, G. Navratil, [M. Mael]
Cornell	D. Hammer
Georgia Tech	W. Stacey
NYU	H. Weitzner
Swarthmore	M. Brown
UC-Irvine	R. McWilliams
UCLA	M. Abdou , S. Cowley
UCSD	F. Najmabadi
U. Colorado	J. Cary
U. Maryland	W. Dorland, J. Drake
U. Texas	R. Hazeltine*, J. Van Dam
U. Washington	T. Jarboe
U. Wisconsin	J. Callen*, R. Fonck, S. Prager
ANL	D. Smith
GA	T. Luce, T. Taylor*,[D. Baldwin]
ITER	T.James, P. Rutherford,[C. Baker]
LANL	K. Schoenberg
LLNL	W. Nevins, J. Perkins,[K. Thomassen]
MIT	I. Hutchinson, B. Montgomery*,[M. Porkolab]
ORNL	E. Lazarus, M. Peng,[M. Saltmarsh]
PPPL	F. Cheng, R. Hawryluk, D. Meade, H. Neilson, S. Zweben*,[R. Goldston]
Sandia	K. Wilson
Boeing	J. Davis
Raytheon	W. Ellis
Westinghouse	S. Harkness*
Fusion Power Assoc.	S. Dean
Jefferson lab	H. Grunder

* FESAC Member

[ex officio] head of sponsoring organization

FORUM FOR MAJOR NEXT-STEP FUSION EXPERIMENTS

Monona Terrace Convention Center
Madison, Wisconsin

Hotel Information

Rooms are being held until March 30 in the following hotels

The Madison Concourse Hotel (608-257-6000), \$82 for single, \$92 for double
Best Western Inn on the Park (608-257-8811), \$72 single, \$96 double
Howard Johnson Plaza Hotel (608-251-5511), \$74 single, \$84 double
The Edgewater (608-256-9071), \$79 double
The Inntowner (608-233-8778), \$78 single, \$88 double
The Madison Inn (608-257-4391), \$52 single, \$60 double

The Madison Concourse Hotel and the Inn on the Park are a short walk to the convention center, and are therefore the recommended hotels. All the other hotels are within one mile, except the Inntowner which is 2 miles away. All the distant hotels provide shuttle service to the conference center. The rooms are held until March 30. **Please call the hotels directly for reservations prior to March 30. Ask for a room held for the "Fusion Workshop."** Hotels in Madison fill up, so after March 30, availability is not guaranteed.

Transportation

Rental cars are not needed in Madison. All hotels are a short taxi ride from the airport. The conference center is walking distance to the capitol and downtown Madison, and set on a lake.

Registration Fee

A registration fee of \$100 will be used to cover costs, including a continental breakfast. Payment will be accepted at the workshop, but **it will be appreciated if the payment is mailed in advance to Kay Shatrawka, 1150 University Ave, Madison, Wisconsin 53706. Make checks out to Fusion Workshop.**

Registration

Please register by March 30 for the workshop by informing Kay Shatrawka of your attendance at shatrawka@juno.physics.wisc.edu, or 608-262-3595 (phone), or 608-262-7205 (fax).

Breakfast

A continental breakfast for all participants will be available every morning one hour prior to the meeting, in the convention center. The cost is included in the registration fee

Workshop Dinner

A workshop dinner will be held in the convention center on Tuesday evening. **The cost is \$30; payment may be made at the time of registration payment, in advance of the meeting if possible.**

What to do prior to March 30

1. Reserve hotel room.
2. Register for conference.
3. Pay registration fee and workshop dinner fee.