

FY99 NSTX Research Forum  
January 12-14, 1999 (Tuesday-Thursday)  
PPPL

Second Announcement **Update (December 25, 1998)**

We are very excited about the newly formed NSTX National Research Team, composing of PPPL researchers and collaborating researchers from 12 institutions, recently approved by DOE. The goals of this research forum are therefore expanded from the previous forums. For this forum we plan to

- \* Discuss and clarify the scientific elements of the Phase-I (May 1999-April 2000) Experimental Tasks (ETs)
- \* Outreach to community experts to discuss in Working Groups (WGs) and update the scientific elements of the Phase-II (May 2000-September 2001) Research Program
- \* Provide information useful for preparing Letters of Interest to NSTX Program and proposals to DOE for enhanced research collaboration for FY00-01

Three major Phase-I ETs (Ohmic Optimization, HHFW, and CHI Startup) and Six WGs (Startup, Heating and Current Drive, Stability and Control, Turbulence and Transport, Edge and SOL, and Crosscutting Diagnostics and Tools) will be the centerpieces of the forum. Phase-II research will investigate the scientific elements of the First-Stability Regime of the ST plasma utilizing intense heating.

For information on the NSTX Research Program Plan **and further information about this NSTX Research Forum**, please view the files **(and folders)** in

[http://www-local.pppl.gov/nstxhome/nstx/Research\\_Program/Program\\_Outline/](http://www-local.pppl.gov/nstxhome/nstx/Research_Program/Program_Outline/)  
[http://www-local.pppl.gov/nstxhome/nstx/Research\\_Program/Meetings/FY99\\_Research\\_Forum/](http://www-local.pppl.gov/nstxhome/nstx/Research_Program/Meetings/FY99_Research_Forum/)

WG reports of the FY97 and FY98 Research Forums can be viewed in the corresponding folders in

[http://www-local.pppl.gov/nstxhome/nstx/Research\\_Program/Meetings/](http://www-local.pppl.gov/nstxhome/nstx/Research_Program/Meetings/)

**For a brief broad overview of the near and longer term vision for the ST research program in Fusion Energy Sciences, please view the 2-pager summary recently submitted to the upcoming FESAC review in**

[http://www-local.pppl.gov/nstxhome/nstx/Research\\_Program/Energy\\_Sciences/](http://www-local.pppl.gov/nstxhome/nstx/Research_Program/Energy_Sciences/)

This announcement contain four components:

- I) December-11 Draft Agenda and Presenters
- II) Three Experimental Task (ET) Parallel Sessions and Discussion Organizers
- III) Six NSTX Working Group (WG) Parallel Sessions and Leaders
- IV) Helpful Information

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I) **December-26** Draft Agenda and Presenters.  
FY99 NSTX Research Forum, January 12-14, 1999, PPPL

January 12, Tuesday (Melvin Gotlieb Auditorium)

8:00 Registration, Reception Dinner Ticket, Coffee-Pastries  
8:30 Welcome (Rob Goldston)  
8:40 DOE comments (Ron McKnight)

8:50 Purpose and Agenda (Martin Peng)

Plenary Session I (9:00-2:10): NSTX Status and Plans (Chair: Rich Hawryluk)

9:00 National Research Program (Martin Peng)

9:30 Project Overview (Masa Ono)

10:00 Plasma Projection and Analysis (Stan Kaye)

10:30 Experimental Research Operation (Joel Hosea)

11:00 Coffee

11:10 Collaborating Research Proposals

- Columbia U (Steve Sabbagh, 10 min)

- Fusion Physics & Technology (Fred Levinton, 10 min)

- GA (Bob Pinsker, Mike Schaffer, 10 min)

- Johns Hopkins U (Dan Stutman, 10 min)

- LANL (Glen Wurden, 10 min)

12:00 Lunch

1:00 - LLNL (Steve Allen, 10 min)

- MIT & UCSD (TBD, 10 min)

- ORNL (Dave Swain, 10 min)

- SNL (Mike Ulrickson, 10 min)

- UC Davis (Neville Luhmann, 10 min)

- UCLA (Tony Peebles, 10 min)

- U Washington (Tom Jarboe or Roger Raman, 10 min)

2:10 Coffee

Plenary Session II (2:20-5:45): Plans for the Parallel ET and WG Sessions  
(Chair: Ron McKnight)

2:20 ET1: Ohmic Optimization (Ron Bell or Steve Sabbagh)

2:40 ET2: High Harmonic Fast Wave (HHFW) (Randy Wilson or Dave Swain)

3:00 ET3: Coaxial Helicity Injection (CHI) Startup (Dennis Mueller or  
Roger Raman)

3:20 Run Coordination (Mike Bell)

3:40 WG1: Startup Physics (Dave Gates or Roger Raman)

4:00 WG2: RF & NBI Heating and Current Drive Physics (Dick Majeski or Dave  
Swain)

4:20 WG3: Stability and Control Physics (Steve Sabbagh or J. Manickam)

4:40 WG4: Turbulence and Transport Physics (Ed Synakowski or Chuck  
Greenfield)

5:00 WG5: Edge, SOL, Power and Particle Control Physics (Rajesh Maingi or  
Daren Stotler)

5:20 WG6: Crosscutting Diagnostics and Enabling Tools (Dave Johnson or  
Fred Levinton)

5:40 Announcements

5:45 Adjourn

6:30 Cash Bar and Reception Dinner (at Good-Time Charley's)

January 13, Wednesday

Parallel Session I (8:00-12:00): FY99 Experimental Task (ET) Sessions

ET1 (Ron Bell and Steve Sabbath, Room: ?)

ET2 (Randy Wilson and Dave Swain, Room: ?)

ET3 (Dennis Mueller and Roger Raman, Room: ?)

12:00 Lunch

Parallel Session II (1:00-5:10): Working Group (WG) Sessions on FY00-01  
Research

WG1: (Dave Gates and Roger Raman, Room: ?)

WG2: (Dick Majeski and Dave Swain, Room: ?)  
WG3: (Steve Sabbagh and J. Manickam, Room: ?)  
WG4: (Ed Synakowski and **Chuck Greenfield**, Room: ?)  
WG5: (Rajesh Maingi and Daren Stotler, Room: ?)  
WG6: (Dave Johnson or Fred Levinton, Room: ?)

5:00 Announcement will be posted near the Auditorium  
5:10 Adjourn

January 14, Thursday (Melvin Gotlieb Auditorium)

Plenary Session III (8:00-9:30): ET Session Summaries (Chair: Joel Hosea)

8:00 ET1 (Ron Bell or Steve Sabbagh)  
8:30 ET2 (Randy Wilson or Dave Swain)  
9:00 ET3 (Dennis Mueller or Roger Raman)

9:30 Coffee

Plenary Session IV (9:40-12:20): WG Session Summaries (Chair: Stan Kaye)

9:40 WG1 (**Dave Gates** or Roger Raman)  
10:00 WG2 (Dick Majeski or Dave Swain)  
10:20 WG3 (J. Manickam or Steve Sabbagh)  
10:40 WG4 (Ed Synakowski or **Chuck Greenfield**)  
11:00 WG5 (Rajesh Maingi or Daren Stotler)  
11:20 WG6 (Dave Johnson or Fred Levinton)

11:40 Recommendations, Actions Items, Upcoming Activities (Martin Peng)

12:20 Adjourn

1:20-2:20 Tour of NSTX Facility (Eric Perry and Al Von Halle)

2:30-5:30 Team Meeting on NSTX Users' Group Functions and Formation (Ed Synakowski, Mike Schaffer)

(See separate email announcement issued by Ed and Mike.)

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II) Three Experimental Task (ET) Parallel Sessions and Discussion Organizers

As indicated in the draft agenda, three ETs are identified for discussion during the forum: ET1: Ohmic Optimization, ET2: HHFW, and ET3: CHI Startup. We would like to thank the following colleagues for agreeing to serve as discussion organizers:

ET1: Ron Bell (rbell@pppl.gov), Steve Sabbagh (ssabbagh@pppl.gov)  
ET2: Randy Wilson (jwilson@pppl.gov), David Swain (swaindw@ornl.gov)  
ET3: Dennis Mueller (dmueller@pppl.gov), Roger Raman (raman@aa.washington.edu)

The ET sessions will provide an opportunity for the NSTX National Research Team members to present and discuss, for each ET, the experimental elements for Phase-I research. The Team members are strongly encouraged to email by January 5, 1999 one-page mini **Experimental Run Proposals (XRP)**s to the discussion organizers, covering:

- Description of the experimental run
- Scientific goals and significance in the research program
- Required plasma conditions
- Prerequisite and desired device and facility conditions
- Needed plasma measurements
- Suggested number of research run-days

The ET Session Discussion Organizers will

- Acknowledge the one-page summaries of the mini-proposals,
- Organize the parallel ET sessions and distribute the draft session agenda by January 8, 1999, based on these mini-proposals,
- Present the ET session plan in Plenary Session II,
- Conduct the presentation and discussion of the parallel ET sessions,
- Present the ET session summaries in Plenary Session III,
- Prepare, jointly with the session presenters, and submit the **integrated** FY99 (Phase-I) ET **XRPs** to the NSTX Program by January 29, 1999.

The FY99 (Phase-I) Experimental Task **XRPs** will form the basis for **developing the major recommended** NSTX experimental runs during FY99.

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### III) Six NSTX Working Group (WG) Parallel Sessions and Leaders

As indicated in the draft agenda, six scientific WGs will continue to encompass the physics topical areas of interest to the NSTX Research Program:

WG1: Startup Physics

WG2: **RF & NBI** Heating and Current Drive Physics

WG3: Stability and Control Physics

WG4: Turbulence and Transport Physics

WG5: Edge, SOL, Power and Particle Control Physics

WG6: Crosscutting Diagnostics and **Enabling** Tools

We would like to thank the following colleagues for agreeing to serve as leaders of the WG discussion:

WG1: **Dave Gates** ([dgates@pppl.gov](mailto:dgates@pppl.gov)), Roger Raman ([Raman@aa.washington.edu](mailto:Raman@aa.washington.edu))

WG2: Dick Majeski ([rmajeski@pppl.gov](mailto:rmajeski@pppl.gov)), Dave Swain ([swaindw@ornl.gov](mailto:swaindw@ornl.gov))

WG3: Steve Sabbagh ([ssabbagh@pppl.gov](mailto:ssabbagh@pppl.gov)), J. Manickam ([jmanickam@pppl.gov](mailto:jmanickam@pppl.gov))

WG4: Ed Synakowski ([esynakowski@pppl.gov](mailto:esynakowski@pppl.gov)), **Chuck Greenfield** ([greenfield@gav.gat.com](mailto:greenfield@gav.gat.com))

WG5: Rajesh Maingi ([maingi@gav.gat.com](mailto:maingi@gav.gat.com)), Daren Stotler ([dstotler@pppl.gov](mailto:dstotler@pppl.gov))

WG6: Dave Johnson ([djohnson@pppl.gov](mailto:djohnson@pppl.gov)), Fred Levinton ([flevinton@pppl.gov](mailto:flevinton@pppl.gov))

The WG sessions will provide an opportunity for the interested researchers to present and discuss, for each WG topical area, important scientific elements of research for the "out years," which in this case are FY00-01 for Phase-II research. Interested researchers are strongly encouraged to submit by January 5, 1999 one-page synopses to these WG leaders, covering

- Description of the scientific research element
- Scientific goals and significance in the research program
- Relationship to the FY99 (Phase-I) ETs
- Required plasma conditions
- Desired device and facility capabilities
- Needed plasma measurements

The WG Session Discussion Leaders will

- Acknowledge the one-page synopses on the scientific research elements,
- Organize the parallel WG sessions and distribute the draft session agenda by January 8, 1999, based on these synopses,
- Present the WG session plan in Plenary Session II,
- Conduct the presentation and discussion of the parallel WG sessions,
- Present the WG session summaries in Plenary Session IV,
- Prepare, jointly with the session presenters, and submit the FY99 Update NSTX WG Reports to the NSTX Program by January 29, 1999.

The FY99 NSTX WG Reports will form the scientific basis for the FY00-01 NSTX National Research Program Proposal.

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IV) Helpful Information

Joanne Savino (jsavino@pppl.gov) has issued information for travel, lodging, Forum dinner etc. The information can be viewed in the folder:

[http://www-local.pppl.gov/nstxhome/nstx/Research\\_Program/Meetings/FY99\\_Research\\_Forum/](http://www-local.pppl.gov/nstxhome/nstx/Research_Program/Meetings/FY99_Research_Forum/)

We look forward to working with you in preparation for the forum, and welcome your comments and questions. Please email them to Joel Hosea (jhosea@pppl.gov), Stan Kaye (skaye@pppl.gov), Masayuki Ono (mono@pppl.gov), or Martin Peng (mpeng@pppl.gov).

Sincerely,

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Martin Peng, ORNL@PPPL, NSTX Program, B329, 609-243-2305, fax: 609-243-3248