

PPPL	PRINCETON PLASMA PHYSICS LABORATORY	PROCEDURE		No. NSTX-xxx Rev 0
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Subject: Incoming NSTX Research Collaboration		Effective Date: DRAFT D	Initiated by: NSTX Program Director	
		Supersedes: NEW	Approved: Director	

Applicability

This procedure is applicable to all Groups and Researchers who participate in collaborative research on the National Spherical Torus Experiment (NSTX).

Introduction

NSTX is a major U.S. national fusion research facility built at PPPL in the late 1990's to advance the frontiers of fusion energy sciences, taking advantage of the highly complementary and unique scientific opportunities offered by the low aspect ratio of a spherical torus. A national team composed of collaborating researchers from universities, national laboratories, and industry, directly funded by DOE, carry out the NSTX research program. Substantial cooperative research is also carried out by researchers from U.S. and world who are not supported by DOE funding dedicated to the NSTX national research collaboration. The NSTX collaborating research team incoming to PPPL has as a result grown to become an important, integral, and strongly contributing part of the NSTX research effort. A procedure is therefore established to provide basic guidelines to enhance the effectiveness of this collaborative research.

This procedure is arranged in the following sections:

- A. Applying for or Renewing NSTX Collaboration Research Funding**
- B. Collaboration Preparation**
- C. Collaboration Implementation.**

Reference Documents

- GEN-008 Coordination of Visits, Assignments and Collaborations at PPPL
- GEN-xxx (PPPL Host Procedure)

Procedure

A. Applying for or Renewing NSTX Collaboration Research Funding

If prospective groups or researchers seek DOE funding to collaborate on NSTX research, they must complete Section A. If groups or researchers already received DOE funding to collaborate on NSTX research, or do not require DOE funding dedicated to NSTX research collaboration, proceed to Section B.

Responsibility

Action

- | | |
|--|--|
| Applicant (Prospective Participant) of NSTX research | 1. Informs the NSTX Program of decision to apply to DOE for NSTX collaboration funding. |
| NSTX Program Director | 2. Assigns an NSTX Research Contact to discuss prospective collaboration research and requirements. |
| NSTX Research Contact | 3. Assists the Applicant to develop a Record of Discussion (Attachment 1), which records the proposed collaborative research roles of the Applicant and the NSTX Team. |
| Applicant and NSTX Research Contact | 4. Submit the Record of Discussion for review and approval by the NSTX Program Director and for concurrence by the NSTX Project Director. |
| NSTX Program Director | 5. Reviews the Record of Discussion and signs it to indicate approval, or indicates why the Record of Discussions was not approved, and informs the Applicant and the NSTX Research Contact. |
| Applicant | 6. Includes the approved Record of Discussion in a NSTX Collaboration Research Funding Application and submits the application to DOE. |
| DOE Office of Fusion Energy Sciences (OFES) NSTX Manager | 7. Informs applicant of funding decision, and NSTX Program Director of approved DOE-funded NSTX collaboration and researcher(s). |

B. NSTX Collaboration Preparation

Responsibility

Action

- | | |
|--------------------------|---|
| NSTX Program Director | 1. Assigns an NSTX Research Contact to collaborating researcher, if none was assigned. |
| NSTX Research Contact | 2. Ensures that the collaborating researcher adheres to applicable NSTX procedures, and applicable PPPL plans, policies, procedures, and computer access requirements. |
| Collaborating Researcher | 3. Signs NSTX Data Usage and Publication Agreement (Attachment 2).

4. Complies with requirements of PPPL procedure GEN-008 "Coordination of Visits, Assignments and Collaborations at PPPL," when the researcher visits PPPL to carry out NSTX research collaboration.

[This would include completing an "Authorization Form For Domestic Visitors form," an "Unclassified Foreign National Visit/Assignment Form," or a "Model Visitor Agreement," as applicable.] |
| NSTX Program Director | 5. Consults with the NSTX Project Director and determines if a Record of Agreement (Attachment 3) will be required and informs the Collaborating Researcher and the NSTX Research Contact. The determination will be based on level of potential impact of the collaboration activities on the NSTX Program and Project. |

If a Record of Agreement is not required, proceed to Section C, Step 5.

C. NSTX Collaboration Implementation

Responsibility

Action

- | | |
|--|---|
| Collaborating Researcher and NSTX Research Contact | 1. Develop a Record of Agreement based on the scope of work and the NSTX Program and Project Plans.

2. Obtain approval of the Record of Agreement by the NSTX Program Director and concurrence by the NSTX Project Director. |
|--|---|

NSTX Program
Director

3. Carries out a periodic review with the Collaborating Researcher and the NSTX Research Contact of collaboration progress and status in accordance with the Record of Agreement.
[The review is conducted at up to a quarterly rate for DOE-funded research]
4. Updates the Record of Agreement in consultation with the NSTX Project Director.

Collaborating/
Cooperating
Researcher

5. Conducts and completes collaborative research in accordance with agreements and applicable NSTX procedures.

Attachments:

1. Record of Discussion
2. NSTX Data Usage and Publication Agreement
3. Record of Agreement
4. Procedure Flowcharts

Record of Discussion for NSTX Collaboration Research Proposals

Key results of discussion between prospective collaborator and NSTX Team researchers
in support of NSTX collaboration research proposals to DOE
(Email or fax signed form to mpeng@pppl.gov by [date TBD] for review & comment)

<u>Title of Research Activities:</u>		<u>Collaboration began (mm/yy) or New:</u>
<u>Off-Site Institution:</u>		<u>Discussion Dates</u> Initiated on: Completed on:
<u>Collaboration Principal Researcher:</u> Name: Email: Tel: Signature: & Date:	<u>On-Site Research Contact:</u> Name: Email: Tel: Signature: & Date:	
<u>Research Goals:</u>		
<u>Off-Site Research Tasks:</u> 1) 2) etc.		
<u>On-Site Research Support Tasks:</u> 1) 2) etc.		
<u>Estimated Researcher Effort Required (Man-Months):</u>		
<u>On-Site Engineering Support Tasks:</u> 1) 2) etc.		
<u>Engineering Effort Required (Man-Months):</u>		
<u>Estimated Hardware Cost Required (\$k):</u>		
<u>Collaboration Researcher Questions and Issues:</u> 1) 2) etc.		
<u>Responses by On-Site Research Contact and Task Manager:</u> 1) 2) etc.		

Record Of Discussion – Typical Form

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Additional Collaboration Researcher's Comments (if any):

1)

2)

etc.

Additional On-Site Research Contact and Task Manager Comments (if any):

1)

2)

etc.

Review and Comment:**NSTX Program Director****NSTX Project Director, Concurrence**_____
Signature_____
Date_____
Signature_____
DateEmail or Fax: 609-243-2222, cc: Joanne Savino (jsavino@pppl.gov) & Tom Egebo (tebego@pppl.gov)

PPPL	PRINCETON PLASMA PHYSICS LABORATORY	PROCEDURE	No. NSTX-xxx Rev 0 Attachment 2
Memorandum of Understanding on NSTX Data Usage and Publication Policies			page 1 of 2

NSTX Data Usage and Publication Agreement

NSTX Research is carried out by a multi-institutional collaborative Research Team. All Research Team members are offered full access to NSTX data as it is collected and analyzed. This privilege entails responsibility by the Research Team members, both on-site and off-site, to ensure that the data are used properly, interpreted correctly, and that appropriate credit is given for the provided measurements, systems operations, and analyses.

The undersigned member of the NSTX Research Team agrees to adhere to the following guidelines of the NSTX data usage and results publication.

- 1) No Research Team member will be given direct access to unpublished NSTX data until this agreement has been signed by the Research Team member, and submitted to the NSTX Head of Research.
- 2) It will be the responsibility of the diagnostic physicists to produce calibrated and validated data in a timely fashion. Such data result from reducing the measured raw signals to a form that can be used for analysis in support of an ongoing experiment or for subsequent analysis, and then validating and releasing by the responsible diagnostic physicist for such use. This data will hereafter be referred to as “validated reduced data”.
- 3) Validated reduced data will be available to the entire NSTX group for physics analysis of any type (data analysis, modeling, and theory), pursuant to Item 1. There will be no restriction on any individual, or group of individuals, from performing physics analysis that uses validated reduced data either “between-shots” (in support of the ongoing experiment) or “off-line”.
- 4) Similar to the guidelines for validated reduced data, and pursuant to Item 1, the results of the physics analysis will be available to the entire NSTX Research Team. The results of the high-level analysis (between-shots or off-line modeling) are to be validated in a timely fashion, and can be used without restriction to support the physics analysis of any research team member.
- 5) It is expected that the responsible physicist will write up as first author the first results from his/her efforts. “Efforts” includes diagnostic measurements, subsystems, experiments, analysis, etc. In later papers, if one is actively involved in the analysis of data, that person would be in the first alphabetical group of authors after the first author. In general, authorship priorities are:
 - a) First author – person who leads the effort in the experiment or analysis, and who writes the paper
 - b) First alphabetical group of authors after the first author – persons who have actively contributed to the work through experiment, analysis, writing, etc.

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c) Second alphabetical group of authors – other persons who have contributed to the work through data, operations, analysis, etc.

6) It will be the responsibility of the first author to elicit comments on a draft of the paper from the co-authors and the NSTX Team. The NSTX Head of Research will oversee this process, ensuring proper credit and co-authorship, and sufficient peer review in a reasonable time scale (~ 2 weeks), before recommending its submittal for presentation or publication. This will be done in coordination with the NSTX Division Heads where appropriate. Any disputes about the paper that cannot be resolved at the Divisional level, will be resolved by the NSTX Program and Project Directors, with advisement of Head of Research and Division Heads.

7) Presentations at conferences and workshops of NSTX physics results will be coordinated and recommended by the Head of Research, in consultation with the Division Heads, for approval by the Project and Program Directors. Major presentations will require rehearsal to the NSTX Research Team at an appropriate time (≥ 1 week before travel by the presenters).

8) In order to disseminate knowledge to the full Research Team and the public, presentations and publications will normally be posted on the WEB, either at the researcher's home institutions and linked to the NSTX server, or directly on the NSTX server. In addition, results will be written up and disseminated as a PPPL report or a report of a Research Team member's home institution. Patent clearance and acknowledgment of DOE funding is required for all reports. The patent clearance and institutional report system of the first author's home institution will be utilized unless the first author, if not a PPPL employee, chooses to issue the report via the PPPL system.

9) The first author of report or publication on NSTX research results, prepared by the home institution of a Research Team member, should in a timely manner inform the NSTX Research Team by submitting copy of the report or publication to the NSTX Head of Research.

Signature _____ Date _____

Institution _____

Record of Agreement (RoA) between NSTX and Collaborating Institution

Key agreements and updates of NSTX collaboration between collaborating institutions and NSTX Program and Project involving major incoming personnel assignment and diagnostic hardware (Email to mpeng@pppl.gov)

<u>Title of DOE-Funded Collaboration Research Activities:</u>		<u>DOE Funding or Approved Duration:</u> mm/dd/yy – mm/dd/yy:
<u>Collaborating Institution:</u>	<u>RoA Updates:</u> Version 1, Date: Updated Version(s), Date(s): Anticipated next update:	<u>Date of Tasks Completion:</u> 1) 2) etc.
<u>Collaboration Principal Researcher:</u> Name: Email: Tel: Signature: Date:		<u>NSTX On-Site Research Contact:</u> Name: Email: Tel: Signature: Date:
<u>Collaboration Research Goals:</u>		
<u>Collaboration Research Tasks (Including Base and Incremental):</u>		<u>Interface & On-Site Tasks to be Carried out by NSTX in Support of the Collaboration Research Tasks:</u>
1)		1)
2)		2)
Etc.		Etc.
<u>Planned Deliverables (Milestones) from these Tasks and Dates of Delivery to NSTX Team (Date of Completion):</u>		
1)		
2)		
Etc.		
<u>Approximate Dates for Reviews and updates of Major Milestones:</u>		
1)		
2)		
Etc.		

<p><u>Major Components of the Collaboration Research Hardware System:</u></p> <p>1)</p> <p>2)</p> <p>Etc.</p>	<p><u>Major Components of Interface & Other Systems Provided by NSTX:</u></p> <p>1)</p> <p>2)</p> <p>Etc.</p>
<p><u>Design and Acceptance Criteria for the Incoming Components:</u></p> <p>1)</p> <p>2)</p> <p>Etc.</p>	<p><u>Design and Acceptance Criteria for the NSTX Components:</u></p> <p>1)</p> <p>2)</p> <p>Etc.</p>
<p><u>Schedule and Cost Estimates Including Contingency to Completion for the Incoming Components:</u></p> <p>1)</p> <p>2)</p> <p>Etc.</p>	<p><u>Schedule and Cost Estimates Including Contingency to Completion for the NSTX Components:</u></p> <p>1)</p> <p>2)</p> <p>Etc.</p>
<p><u>Key Collaboration Personnel and Areas of Responsibility:</u></p> <p>PI:</p> <p>Others (Physicists, Engineers, Technicians, etc.):</p>	<p><u>Key NSTX Personnel and Areas of Responsibility:</u></p>
<p><u>Remaining Collaboration Researcher Questions, Issues, and Comments:</u></p> <p>1)</p> <p>2)</p> <p>etc.</p>	<p><u>Responses by NSTX On-Site Research Contact:</u></p> <p>1)</p> <p>2)</p> <p>etc.</p>
<p><u>Additional Recommendations, if Any, by Collaborator and Research Contact:</u></p> <p>1)</p> <p>2)</p> <p>etc.</p>	

Comments:

RoA Approved by NSTX Program Director

Signature _____ Date _____

Concurred by NSTX Project Director

Signature _____ Date _____

Comments by Principal Collaborator upon Completion of Collaboration Tasks:

Signed:

Comments by NSTX Research Contact upon Completion of NSTX Tasks:

Signed:

Information copy to:

Steve Eckstrand (DOE), Darlene Markevich (DOE), Tom Egebo, Skip Schoen, Rich Hawryluk, Martin Peng, Masa Ono, Principal Collaborator, On-Site Research Contact, Responsible Personnel, etc.

Procedure Flowchart

Procedure for Incoming NSTX Research Collaboration

January, 2005

