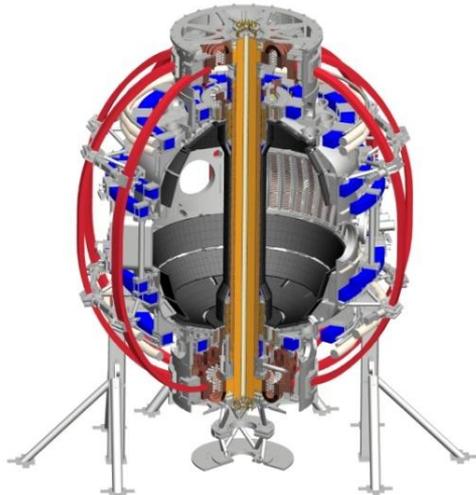


NSTX-U Program Update

J. Menard

**NSTX-U Team Meeting
B318
May 7, 2013**

*Coll of Wm & Mary
Columbia U
CompX
General Atomics
FIU
INL
Johns Hopkins U
LANL
LLNL
Lodestar
MIT
Lehigh U
Nova Photonics
Old Dominion
ORNL
PPPL
Princeton U
Purdue U
SNL
Think Tank, Inc.
UC Davis
UC Irvine
UCLA
UCSD
U Colorado
U Illinois
U Maryland
U Rochester
U Tennessee
U Tulsa
U Washington
U Wisconsin
X Science LLC*



*Culham Sci Ctr
York U
Chubu U
Fukui U
Hiroshima U
Hyogo U
Kyoto U
Kyushu U
Kyushu Tokai U
NIFS
Niigata U
U Tokyo
JAEA
Inst for Nucl Res, Kiev
Ioffe Inst
TRINITI
Chonbuk Natl U
NFRI
KAIST
POSTECH
Seoul Natl U
ASIPP
CIEMAT
FOM Inst DIFFER
ENEA, Frascati
CEA, Cadarache
IPP, Jülich
IPP, Garching
ASCR, Czech Rep*

Outline

- FESAC facility review
- NSTX-U 5 Year Plan preparation
- Request of research team members

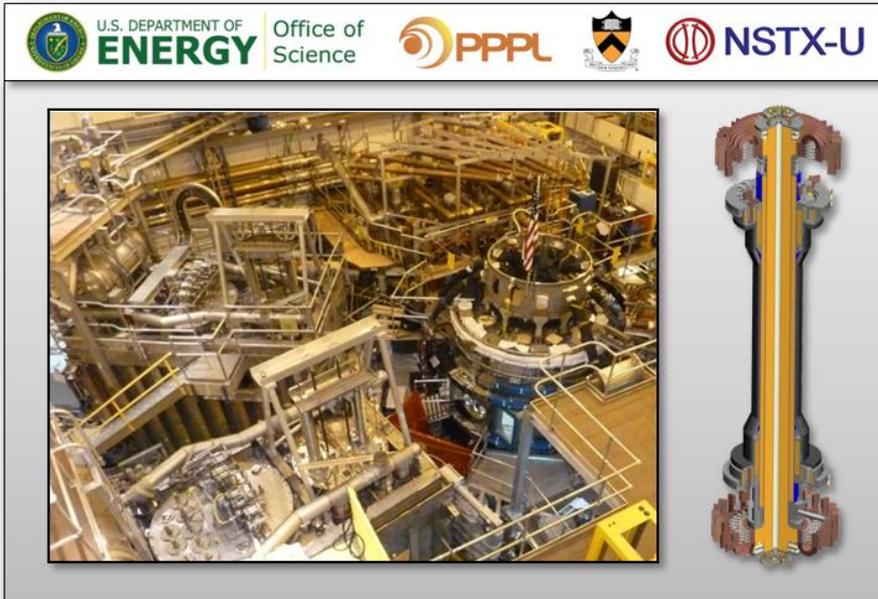
FESAC facility prioritization for 2014-2024 ranked NSTX-U “(a) absolutely central” for enabling world-leading science

- Contributions critical to ITER
 - Energetic particle physics, where the new heating systems in NSTX-U will provide expanded ability to vary the velocity and spatial distribution of energetic ions in the plasma
 - Radiative divertor solutions to the ITER-relevant heat fluxes, impurity transport using multiple conditioning and PFC scenarios to enable control techniques to be developed in impurity-seeded ITER plasmas
- Developing new solutions for the plasma-material interface:
 - The ability to explore very high exhaust power density, high magnetic expansion, and liquid metals in the same device is unique in the world fusion program
- Establishing the physics basis for FNSF
 - With access to the highest magnetic field and heating and current drive power of any low aspect ratio tokamak, NSTX-U will be the leading device in the world program to assess the viability of this regime for FNSF applications

NSTX-U research team recently completed 5 year plan text

Five Year Plans >

NSTX-U Five Year Plan for FY2014-2018



- Plan text - [single file](#) (40MB)
- Plan text - [individual chapters](#)
- Review agenda and presentations (May 21-23, 2013)

- Plan text made available to review panel in April
- 760 pages total – panel given 1 month to read
- Plan structure
 - Executive Summary
 - Ch 1: Overview
 - Ch 2-9: TSG research plans
 - Ch 10: Facility and diagnostics
 - Ch 11: Collaborator plans
- Thanks to chapter authors for all your hard work!
- Thanks also to the internal reviewers for their comments
 - welcome back to PPPL Rich!

Your comments on the plan are no longer welcome! ☺

Charge questions (many sub-questions not shown)

- 1. Assess the scientific and technical merit of the ongoing and planned research**
- 2. Comment on the appropriateness of the proposed research plan.**
- 3. Evaluate the competency of the proposed senior research personnel, adequacy of the proposed research environment & resources**
- 4. Assess the reasonableness of the proposed costs for fusion research and facility operations**
- 5. Assess the performance of the NSTX research team during the previous five-year period. Also, assess the plans for NSTX Upgrade facility operations (at a top level)**

Request to research team members

- 2 key measures of the productivity and quality of our scientific research: publications and invited talks
- Please work with Stan to identify APS-DPP invited talk ideas - nominations due May 15, 2013
- We urge you to try to publish your results in a prominent/widely read journal (PRL, Science, Nature)
 - Utilize time between 5YP review and prep for NSTX-U 1st plasma
 - 2012 PRL count was 1 vs. recent years: 3-6 – need to increase this