

 **National Spherical Torus eXperiment Upgrade**

# **NSTX-U / Magnetic Fusion Science Meeting**

**March 22, 2021**

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# Some upcoming events

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- April 19-23, 2021 (virtual), [US Transport Task Force](#) (abstract deadline: April 2)
- (April / TBD) Sherwood theory conference
- May 10-15, 2021 (virtual), [IAEA-FEC](#) (paper, presentation & video deadlines: April 9)
- June 21-25, 2021 (virtual), [EPS Plasma Physics Conference](#)
- July 6-9, 2021 (virtual), [Joint Asia-Pacific-US-EU Transport Task Force](#)
- Sept 6-10, 2021 (virtual), [EU-US Transport Task Force](#) (deadline: April 16)
- Sept 12-16, 2021 (virtual), [IEEE Int. Conf. on Plasma Science \(ICOPS\)](#) (deadline: May 28)
- Sept 26 - Oct. 1 (virtual/Fukuoka), AAPPS-DPP ([invited nominations](#) due April 30)
- Nov. 8-12, 2021 (Pittsburgh?), [APS-DPP](#) (invited nominations typically May)
- Dec. 12-16, 2021 (Denver?), [IEEE-SOFE & PPC](#) (deadline: June 1)

# IAEA deadlines and NSTX-U Overview paper

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- Conference dates: May 10-15, 2021 (virtual), [IAEA-FEC](#)

## [Contributors Guide](#)

- **April 9, 2021: Deadline to upload paper & presentation slides**
- **April 15, 2021: Deadline for pre-recorded videos (talks & 5 min poster overviews)**
- **Upload your conference papers (& presentations) to [Publications office](#) for review**
  
- Guidance on poster layout [here](#) (recommends A0, but most of us use slides)
- Review of NSTX-U contributions on April 1
  
- Thanks for all your help with draft material

# DOE/SC must approve IAEA participation

- New DOE/SC requirements for attending virtual meeting/conference organized by a foreign entity (from March 11 email)
- Fill out the [Virtual Conference](#) form ASAP (easy and quick to do)

A message from the Chief Financial Officer

## Kristen Fischer



Are you planning to participate in a virtual meeting and/or conference organized by a foreign entity? If so, this pertains to you!

New guidance has been issued requiring approval for any attendance/participation at virtual meetings and/or conferences organized by foreign entities.

With travel likely to be restricted through much of FY 2021, the U.S. Department of Energy (DOE) Office of Science (SC) recognizes that there is an increasing number of opportunities for researchers to participate in virtual scientific conferences, workshops, seminars, and similar activities. Some of these events are organized by individuals or institutions in foreign countries.

Before any invitations to participate are accepted or registration is completed, PPPL must provide the following information to SC at least 3 weeks in advance of invitation acceptance or registration due dates to allow the SC program office time to consider the request:

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**If you have not yet done so, please vote for  
representatives to the Research Team Council**

**(deadline Wed, Mar. 24 - see emails from Stan Kaye)**

# NSTX-U Team talks

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Feb. 8 - “Executive Summary” overview of NSTX-U Five Year Plan (2021-2025)

Feb. 15, March 1, March 8 - first 17 collaborator talks

Today - last 2 talks

- **~15 minute talks**, suggested content:
  - An overview of the planned research & diagnostic activities for NSTX-U in this five year period (feel free to include progress since funding commenced)
    - Please highlight which Objective(s) and Thrust(s) from the NSTX-U Five Year Plan the research addresses
  - An estimated schedule of activities
  - Key needs or requirements, including on- and off-site personpower resources

# Agenda for collaborator talks

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Time (ET)	February 15	March 1	March 8
1:35	Thome	Schuster	Mordijck, Fitzpatrick
1:50	Sabbagh	Kolemen	Luhmann
2:05	Raman	McKee	Allain, Koel, Woller
2:20	Crocker, Lin	Rhodes	Baek
2:35	Heidbrink, Stagner	Brower	Levinton
2:50	Wirth	Soukhanovskii	Tritz
3:05	Unterberg		Kolemen

# FYI: Much information found at [nstx-u.pppl.gov](http://nstx-u.pppl.gov)

The screenshot shows the NSTX-U website interface. At the top, the navigation menu includes Home, Meetings, Drag & Drop, Calendars, Phone Book, and Sitemap. A search bar is located on the right. The main content area features a header with logos for the U.S. Department of Energy, Office of Science, PPPL, and NSTX-U, followed by a large group photo. Below the photo are sections for 'Upcoming and Past NSTX-U Meetings' and 'Quick Links for Additional Information'. A sidebar on the left lists various web pages, including 'Data Management Plan' and 'Yearly Research Milestones'. Red callouts highlight several issues: 'Link to Data Management documentation' points to the 'Data Management Plan' link; 'Link to yearly Research Milestones' points to the 'Yearly Research Milestones' link; 'Links to: 5YP, Last PAC slides, Year end reports' points to the '2021-2025 NSTX-U Five Year Plan (PDF)' link; 'Link to Monday seminar slides' points to the 'Monday Physics Meetings' link; and 'A number of links & pages need updating' points to the entire sidebar menu.

**Link to Data Management documentation**

**Link to yearly Research Milestones**

**Links to: 5YP, Last PAC slides, Year end reports**

**Link to Monday seminar slides**

**A number of links & pages need updating**

**NSTX-U**

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Home Meetings Drag & Drop Calendars Phone Book Sitemap

Search this site

**NSTX-U Web Pages:**

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- Roles and Responsibilities
- Run Coordination
- Run Schedule Calendar
- Science Groups
- Scientific Conferences
- Software
- Surface Science
- Task Forces
- User Information Form
- Working Groups

U.S. DEPARTMENT OF ENERGY Office of Science PPPL NSTX-U

**Upcoming and Past NSTX-U Meetings:**

- [2021-2025 NSTX-U Five Year Plan \(PDF\)](#)
- [NSTX-U IAEA-FEC 2018 Contributions](#)
- [NSTX-U FY2019 Year-End Report](#)
- [NSTX-U Research PAC-41 Meeting - May 13-14, 2020](#)

**Quick Links for Additional Information:**

- [Monday Physics Meetings](#)
- Presentation templates:
  - 4x3: [PPT](#) [PPTX](#) [LaTeX](#)
  - 16x9: [PPT](#) [PPTX](#)
  - [Templates and Graphics Folder](#)
  - Hi-res [NSTX-U cross-section](#) image (for illustration purposes only)



# Much information on data usage, access, publishing, archiving

Data Management Plan - NSTX-U

nstx-u.pppl.gov/data-management-plan

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## Data Management Plan

The NSTX-U Data Management Plan (DMP) describes the elements of data from measured to analyzed and also describes the resources available for the data management and preservation during the course of research operations. In addition, this page describes the resources available for sharing of data and provides a link to user requirements for data access. Finally, web links to the NSTX-U and PPPL computing and analysis resources are provided. Any NSTX-U data management plan questions should be directed to the NSTX-U Head of Physics Analysis: Stan Kaye ([kaye@pppl.gov](mailto:kaye@pppl.gov)).

### I. Data Categories

Data from NSTX-U discharges will be obtained from a suite of diagnostics measuring a broad range of plasma characteristics. The three main categories of NSTX-U data are raw, reduced, and analyzed.

#### A. Raw

Raw (measured) data may take the form of voltages, emissivities, etc, and are not directly useable as input to higher level analysis routines. The raw data will be:

1. OD - temporally and spatially constant information during the course of a plasma discharge such as fixed operational settings, device/facility conditions, etc.
2. 1D - temporally varying measurements (magnetic fluxes, neutron rates, etc.), or spatially varying data taken only at one time
3. 2D - measurements that vary both in time and space (kinetic profiles, etc.)
4. 3D - temporally varying 2D images (visible camera, gas puff imaging, etc.)

#### B. Reduced

Raw data will be converted to reduced data through diagnostic-specific analysis software. Reduced data will be in real physics units (e.g., temperatures, densities, etc.), and once validated by the responsible diagnostician, can be used as input to high level analysis codes. A listing of NSTX-U diagnostics, units for the measurements, and the person responsible for the diagnostic is provided [here](#).

#### C. Analyzed

Validated reduced data that has been synthesized through direct analysis or through higher level analysis codes. Analyzed data, along with some validated reduced data, form the basis for figures and physics conclusions presented in publications.

### II. Data Management Resources, Storage, and Archival

# Data usage, access, publications & presentations

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- [Data Usage Agreement](#) should be filled out by all collaborators intending to present & publish data, analysis and/or modeling
  - **Data access:** If you don't already have access, reach out to your PPPL research contact

## Publications

- Prior to journal submission, should email Head of Physics Analysis ([wgutten@pppl.gov](mailto:wgutten@pppl.gov)) to distribute for ~1 week Team review
- Data in figures should be [archived](#) ([instructions](#), [how-to guide](#)) & the ARK link should be included in the paper
- First PPPL author is responsible for submitting draft (and eventual Accepted Manuscript) to [Publications Office](#) for review, patent clearance and OSTI archiving

***Please read the webpages to educate yourself on your responsibilities***

# Talk & poster presentations

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Archive of slides in this [DragNDrop directory](#) (not sure how up-to-date this is)

- *Bigger conferences (APS, EPS, IAEA, TTF, Sherwood)*: we ask that you do a dry run with appropriate Team members (these will typically be Team-coordinated, especially APS & IAEA)
- *Smaller conferences*: as a courtesy (mostly for awareness) we ask you to please email Head of Research ([skaye@pppl.gov](mailto:skaye@pppl.gov)) and Head of Physics Analysis ([wgutten@pppl.gov](mailto:wgutten@pppl.gov)) that you are contributing
- *Seminar and outreach talks*: no communication required; however, we are (were) keeping a [directory](#) of [Outreach talks](#) to which we would happily update and add new talks for future reference