

URL: <https://infuse.ornl.gov>
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INFUSE FY2024 Workshop

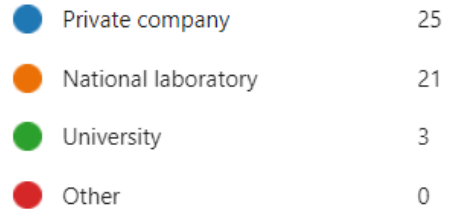
A. Lumsdaine & E. Gilson

Introduction
February 27, 2024

Poll Results from November 2023 Virtual Mini-Workshop

1. What type of organization to you represent?

[More Details](#)



2. Is it likely that you would attend an in-person workshop at Princeton Plasma Physics Laboratory in late February or early March?

[More Details](#)

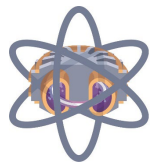
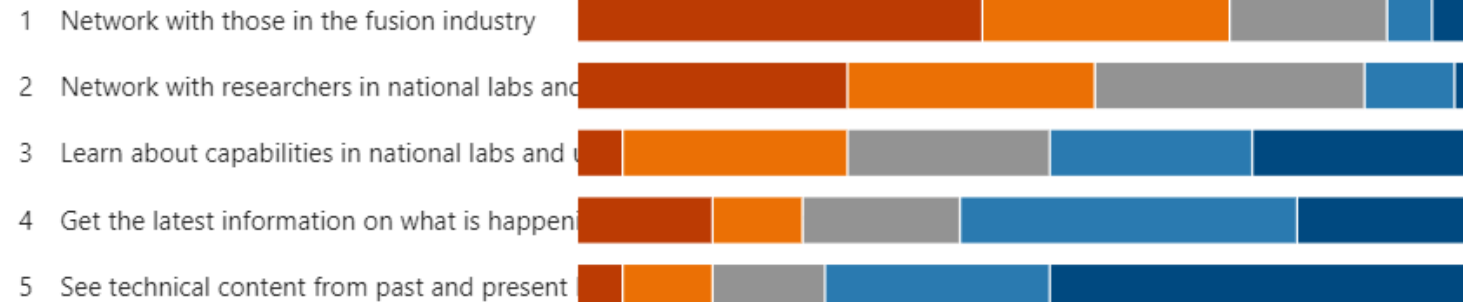


3. If you would attend, rank what the most important parts of attending an in-person workshop would be.

40 Responses

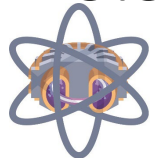
Rank Options

First choice ■ ■ ■ ■ Last choice



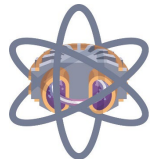
Agenda – Tuesday, February 27

- 9:00 AM Welcome (Cowley), Safety (ES&H), and Opening (Lumsdaine, Gilson, Nehl)
- 9:30 AM FES Perspective (Mandrekas)
- 9:45 AM Update from the Office of the Under Secretary for Science & Innovation (Hsu)
- 10:00 AM Poster lightning talks
- 10:25 AM Coffee break / Poster discussions
- 11:00 AM State of the fusion industry (Holland)
- 11:30 AM Lunch (on site) + Poster discussions
- 12:45 PM INFUSE success stories
- 3:15 PM Coffee break / Poster discussions
- 4:30 PM Panel discussion on early INFUSE cycles (Diallo, Youchison, Nehl)
- 5:15 PM Closing Remarks & INFUSE Program Updates (Lumsdaine)
- 5:30 PM End of Day 1



Agenda – Wednesday, February 28

- 8:30 AM Technical discussions
 - GAIN (Lohse)
 - DEI (Dominguez, Guin)
 - ITER data requests (Lumsdaine)
- 10:00 AM Coffee break / Poster discussions
- 10:45 AM CRADA process (Zimmerman, Paulus, Mempin)
- 11:45 AM Lunch (on-site) + Poster discussions
- 1:15 PM PPPL Tour
- 3:45 PM Townhall meeting on INFUSE future
- 4:45 PM INFUSE in the FES landscape (Allain)
- 5:30 PM Close



INFUSE Leadership

INFUSE Program Manager



Colleen Nehl

INFUSE Director



Arnold Lumsdaine

INFUSE Deputy Director

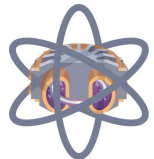


Erik Gilson



U.S. DEPARTMENT OF
ENERGY

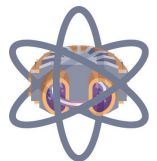
Office of
Science



INFUSE Success Stories

INFUSE success stories

- 12:45 Characterization of predicted confinement and transport in an ARC-class tokamak power plant, Chris Holland, (UC San Diego)
- 1:10 High heat flux exposures of tungsten and novel tungsten alloys for plasma facing components, Travis Gray, (ORNL)
- 1:35 Characterization of plasma stability during magnetized target fusion compression, Aaron Froese, (General Fusion)
- 2:00 Fabrication and characterization of transition metal hydrides for radiation shielding in tokamak devices, Caitlin Kohnert, (LANL) remote
- 2:25 INFUSE blanket projects, Richard Pearson, (Kyoto Fusioneering)
- 2:50 Simulations of global stability in the C-2W device, Elena Belova, (PPPL)



Capability Posters

Title	Presenter	Institution
BNL Capabilities for the Fusion Community	Kathleen Amm	Brookhaven National Lab
Fusion-Relevant Technology Development at Fermilab	Stephen Gourlay	Fermilab
ANL Capabilities for Fusion Breeding Blanket	Thanh Hua	Argonne National Laboratory
ANL Capabilities for Fusion Research	Thanh Hua	Argonne National Laboratory
LBNL Capabilities for Fusion Partnerships	Soren Prestemon	Lawrence Berkeley National Lab
Sandia Capabilities for Fusion Partnerships	Rob Kolasinski	Sandia National Laboratory
ORNL Capabilities for Fusion Partnerships	Arnie Lumsdaine	Oak Ridge National Laboratory
PPPL Capabilities for Fusion Partnerships	Erik Gilson	Princeton Plasma Physics Laboratory
INL Capabilities for Fusion Partnerships	Masa Shimada	Idaho National Laboratory
Los Alamos National Laboratory's capabilities to advance both magnetic and inertial fusion energy partnerships	John Kline	Los Alamos National Laboratory
Fusion Capabilities at PNNL: Scalable Manufacturing, Multi-scale Modeling, Mechanical Testing, Atomic-Resolution Characterization, and Tritium Science	Dalong Zhang	Pacific Northwest National Laboratory
SRNL Fusion Program Partnering Opportunities	Luke Olson	Savannah River National Laboratory
Equilibrium, Stability, and Disruption Calculations Supporting the Design & Assembly of the SPARC Tokamak	Carlos Paz-Soldan	Columbia University
Extreme Environment Electron Beam High Heat Flux Testing and Evaluation Capabilities	Ryan L. Romesberg	Penn State ARL

Technical Posters

Title	Presenter	Institution
Fusion Device Comprehensive Neutronics Analysis and Multiphysics Coupling	Jin Whan Bae	Oak Ridge National Laboratory
SCLL Fusion Blanket Design & Tritium Breeding Analysis with PHITS: EX-Fusion & UC Berkeley Collaboration	Max Monange	EX-Fusion
Hybrid Magneto-Electrostatic Orbitron Fusion Reactor: Overview of Scientific Program at Avalanche Energy	Robin Langtry	Avalanche Energy
Materials Synthesis, Scalable Manufacturing, Extreme Environment Testing, and Performance Evaluation Capabilities	Christopher DeSalle	Penn State ARL
Gyrokinetic-Optimized Equilibria For a Spherical Fusion Pilot Plant	Jason Parisi	PPPL
Mechanical Characterization of PFC Candidate Fine-Grain Dispersion-Strengthened Tungsten Materials	Zak Koyn	Energy Driven Technologies, LLC
Extended-MHD simulations of disruption mitigation via massive gas injection in SPARC	Andreas Kleiner	Princeton Plasma Physics Laboratory
Stable Plasma Confinement by Cross-Helicity Generation at the Alfvén Velocity	Daniel Prater	Second Sun Energy
Fiber Optic Tritium Gas Detector	Roman Samulyak	Penn State University
Tritium Fuel Cycle Modelling and Optimization to Enable Fusion Pilot Plant Development	Patrick Ellis	General Fusion
Machine learning assisted multi-scale multi-physics modeling of Plasma facing materials under thermal shocks	Mohammed Alnaggar	Oak Ridge National Laboratory

Office of Science Statement of Commitment & other Guidance

- ◆ **SC Statement of Commitment** – SC is fully and unconditionally committed to fostering safe, diverse, equitable, inclusive, and accessible work, research, and funding environments that value mutual respect and personal integrity. <https://science.osti.gov/SW-DEI/SC-Statement-of-Commitment>
- ◆ **Expectations for Professional Behaviors** –SC’s expectations of all participants to positively contribute to a professional, inclusive meeting that fosters a safe and welcoming environment for conducting scientific business, as well as outlines behaviors that are unacceptable and potential ramifications for unprofessional behavior. <https://science.osti.gov/SW-DEI/DOE-Diversity-Equity-and-Inclusion-Policies/Harassment>
- ◆ **How to Address or Report Behaviors of Concern**– Process on how and who to report issues, including the distinction between reporting on unprofessional, disrespectful, or disruptive behaviors, and behaviors that constitute a violation of Federal civil rights statutes. <https://science.osti.gov/SW-DEI/DOE-Diversity-Equity-and-Inclusion-Policies/How-to-Report-a-Complaint>
- ◆ **Implicit Bias** – Be aware of implicit bias, understand its nature – everyone has them – and implicit bias if not mitigated can negatively impact the quality and inclusiveness of scientific discussions that contribute to a successful meeting. <https://kirwaninstitute.osu.edu/article/understanding-implicit-bias>