

NEAMS Agenda

NEAMS Annual Review 2026

February 10-12, 2026

*Idaho National Laboratory, Energy Innovation Laboratory (EIL) Room A102 775 MK Simpson Blvd.
Idaho Falls, Idaho 83415*

Tuesday, February 10th, 2026

Time	Topic	Presenter
8:00	Welcome to INL	Steve Hayes (INL)
8:15	Introduction to NEAMS	David Andersson (LANL)
8:30	Panel: Light water Reactor Research Capabilities and Needs Members: Bob Salko (ORNL), Matt Jessee (ORNL), Ben Spencer (INL), PC Simon (INL), Laurent Capolungo (LANL), Nathan Capps (ORNL)	Moderator: David Andersson (LANL)
10:15	Break	
10:30	Panel: Fast Reactor Research Capabilities and Needs Members: Emily Shemon (ANL), Changho Lee (ANL), Dillon Shaver (ANL), Gary Hu (ANL), Steve Novascone (INL), Bo Feng (ANL)	Moderator: Tanju Sofu (ANL)
12:15	Working Lunch: AI/ML Applications in NEAMS I Multiphysics Applications: MOOSEng Development - a Domain-Specific AI Agent for MOOSE Ecosystem Reactor Physics: Application of Machine Learning in Modeling Multigroup Cross Sections as Neural Networks Fuel Performance: AI/ML applied to fuel performance modeling Thermal Fluids: Transformer-Based Deep-Learning for Turbulence Modeling and Reactor System Simulations Structural Materials & Chemistry: Molten salt thermo-physical property prediction using machine learning interatomic potentials	Mengnan Li (INL) Olin Calvin (INL) Som Dhulipala (INL) Eric Cervi (ANL) Chao Jiang (INL)
13:15	Panel: High Temperature Gas- Cooled Reactors and Fluoride High Temperature Reactor Research Capabilities and Needs Members: David Reger (INL), Josh Hanophy (INL), Laurent Capolungo (LANL), Jake Hirschhorn (INL), Robby Kile (INL)	Moderator: Ling Zou (ANL)
15:00	Break	

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- 15:15 Panel: Microreactor Research Capabilities and Needs **Moderator:** Jan Vermaak (INL)
- **Members:** Yinbin Miao (ANL), Tara Pandya (ORNL), Joshua Hansel (INL), Lynn Munday (INL), Abdalla Abou-Jaoude (INL)
- 17:00 Adjourn Day 1

Wednesday, February 11th, 2026

Time	Topic	Presenter
8:00	Panel: Molten Salt Reactor Research Capabilities and Needs • Members: Ting Fei (ANL), Yaqi Wang (INL), Travis Mui (ANL), Tony Birri (ORNL), Daniel Schwen (INL), Patricia Paviet (PNNL)	Moderator: Mauricio Tano (INL)
9:45	Break	
10:00	Multiphysics Framework & Workflows • Usability-Driven Progress in Multiphysics Tools • GPU Acceleration in MOOSE, Chapter 2 - Parallel Development of Parallel Work • Implementation of a Constructive Solid Geometry Framework in MOOSE for improved Monte Carlo integration • User Oriented Advancements in MOOSE-Workbench	Cody Permann (INL) Alex Lindsay (INL) Kalin Kiesling (ANL) Rob Lefebvre (ORNL)
11:00	Discussion and Feedback	
11:30	Working Lunch: AI/ML Applications in NEAMS II • Multiphysics Applications: MOOSE Stochastic Tools Module: Stochastic Sampling, Surrogate modeling, and Optimization for MOOSE-Based Modeling and Simulation • Fuel Performance: Machine Learning Enabled Multiscale Uncertainty Propagation for Fission Gas Swelling in UN • Thermal Fluids: Advances in the multi-scale bridging within NEAMS for thermal-hydraulics applications: leveraging high-fidelity data • Structural Materials & Chemistry: Use of ML in Surrogate Models to Efficiently Bridge Between Mesoscale and Continuum Scale	Zach Prince (INL) Anton Schneider (LANL) Dillon Shaver (ANL) Laurent Capolungo (LANL)
12:30	Adjourn External Meeting	
NEAMS Internal Meeting		
12:45	SLT Summary of NEAMS Five-Year Plan: Discussion of Stakeholder Input and Future Direction	David Andersson (LANL)
13:45	Multiphysics Applications • Accomplishments and Current R&D Status, Discussion of Five-Year Plan, and Future Direction	Leads: Emily Shemon (ANL) and Cody Permann (INL)

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14:45	Break	
15:00	Reactor Physics Accomplishments and Current R&D Status, Discussion of Five-Year Plan, and Future Direction	Lead: Matthew Jessee (ORNL)
16:00	Early Career Presentations Multiphysics Applications: Demonstration of VERA for Time-at-Temperature Applications using the Peach Bottom Turbine Trip Benchmark Reactor Physics: Sensitivity and Uncertainty Quantification Capabilities in Griffin Thermal Fluids: Saline-Pronghorn-SAM: Applications in the Molten Salt Reactor Experiment Fuel Performance: Development of a BISON Validation Case for TRISO Transient Irradiations in NSRR Using Effective Heat Capacity Methods Structural Materials & Chemistry: MSTDB-TP v4.0 Update and Associated Predictive Modeling	Nick Herring (ORNL) Seoyoon Jeon (ANL) Ramiro Freile (INL) Carlotta Ghezzi (INL) Tony Birri (ORNL)
17:00	Adjourn Day 2	

Thursday, February 12th, 2026 (Internal Meeting)

Time	Topic	Presenter
8:00	Thermal Fluids Accomplishments and Current R&D Status, Discussion of Five-Year Plan, and Future Direction	Leads: Elia Merzari (PSU) and Rui Hu (ANL)
9:00	Structural Materials and Chemistry Accomplishments and Current R&D Status, Discussion of Five-Year Plan, and Future Direction	Leads: Ben Spencer (INL) and Ted Besmann (USC)
10:00	Break	
10:15	Fuel Performance Accomplishments and Current R&D Status, Discussion of Five-Year Plan, and Future Direction	Leads: Steve Novascone (INL) and Michael Cooper (LANL)
11:15	Break	
11:30	GENESIS Mission	Chris Ritter (INL)

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12:00 NEAMS Validation Database: Discussion

Mauricio Tano (INL)
and Emily Shemon
(ANL)

12:30 Lunch (on your own)

14:00 Breakout Sessions

17:00 Adjourn Day 3