



Agenda

NEAMS Annual Review Fast Reactors

May 29, 2025

11:00 AM-4:00 PM (Eastern Time)

11:00 **Opening remarks and meeting objectives**

David Henderson, DOE/David Andersson, LANL

11:05 **NEAMS overview and Fast Reactors research plan**

David Andersson, LANL

Research presentations on Fast Reactors by NEAMS Technical Areas

11:15 **Multiphysics Applications**

Introduction to Multiphysics Applications Technical Area
(5 min)

Emily Shemon, ANL/Cody Permann, INL

Impact of uncertainties on peak temperatures using high fidelity multiphysics simulation
(10 min)

Yiqi Yu, ANL

Progress on an integrated multiphysics approach to predict reactivity
feedback due to core bowing
(15 min)

Nick Wozniak, ANL

Initial progress on NEAMS tool validation using Southwest Experimental Oxide
Fast Reactor (SEFOR) experimental data
(5 min)

Donny Hartanto, ORNL

Q & A
(10 min)

12:00 **Reactor Physics**

Introduction to Reactor Physics Technical Area
(5 min)

Matthew Jessee, ORNL/Javier Ortensi, ORNL

Overview of Griffin R&D activities for Fast Reactor systems
(15 min)

Shikhar Kumar, ANL

Overview of Shift R&D activities for Fast Reactor systems
(15 min)

Friederike Bostelmann, ORNL

Q & A
(10 min)

12:45 **Thermal Fluids**

Introduction to Thermal Fluids Technical Area
(5 min)

Elia Merzari, ANL/Rui Hu, ANL

Development of an advanced 1-D mixing model in SAM
(10 min)

Eric Cervi, ANL

High-fidelity simulations using Nek and NACIE-UP benchmark
(10 min)

Dillon Shaver, ANL

Subchannel capability and CDAP model development
(10 min)

Aydin Karahan, ANL

Q & A
(10 min)

13:30 **Break**

14:15 **Fuel Performance**

Introduction to Fuel Performance Technical Area
(5 min)

Stephen Novascone, INL/Michael Cooper, LANL

BISON capabilities for metallic and nitride Fast Reactor fuels
(10 min)

Topher Matthews, LANL

Historical database implementation with FIPD and OPTD
(10 min)

Yinbin Miao, ANL

Improved FCCI predictions via mechanistic modeling
(10 min)

Jake Hirschhorn, INL

Q & A
(10 min)

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15:00 **Structural Materials and Chemistry**

Introduction to Structural Materials and Chemistry Technical Area
(5 min)

Benjamin Spencer, INL/Ted Besmann, USC

Longterm stress relaxation modeling of Alloy 709 for accelerated qualification
(10 min)

Mark Messner, ANL

Release of NEML2 high-performance constitutive modeling library
(10 min)

Gary Hu, ANL

Incorporating irradiation effects in predictive models of Grade 91 alloy
(10 min)

Laurent Capolungo, LANL

Q & A
(10 min)

15:45 **Feedback and conclusion**

16:00 **Adjourn**