

# NIF & JLF User Group Meeting

2025 • LIVERMORE, CALIFORNIA

## **AGENDA**

**February 11 – February  
13, 2025**

**Bella Rosa Event Center  
Garré Vineyard & Winery  
7986 Tesla Road  
Livermore, CA 94550**

**February 11, 2025**

7:00 am ***Registration Opens and Continental Breakfast***

***Opening Session: Chair: Kevin Fournier, LLNL***

8:05 am ***NIF User Office Director, Opening Remarks***  
Kevin Fournier, Lawrence Livermore National Laboratory

8:15 am ***Vice Chair, NIF User Group***  
Maria Gatu-Johnson, Massachusetts Institute of Technology

8:20 am ***Chair, JLF User Group***  
Tom White, University of Nevada, Reno

8:25 am ***Lawrence Livermore National Laboratory Director***  
Kim Budil, Lawrence Livermore National Laboratory

8:35 am ***National Ignition Facility & Photon Science, Principal Associate Director***  
Jeff Wisoff, Lawrence Livermore National Laboratory  
***Physical and Life Sciences, Physics Division Leader***  
Will Evans, Lawrence Livermore National Laboratory

8:50 am ***Jupiter Laser Facility Director***  
Felicie Albert, Lawrence Livermore National Laboratory



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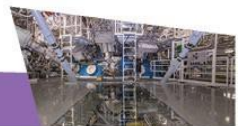
- 8:55 am            ***The New National IFE Ecosystem***  
Tammy Ma, Lawrence Livermore National Laboratory
- 9:10 am            ***Present understanding of ignition and Gain using indirect-drive inertial confinement fusion target designs on the U.S. National Ignition Facility***  
Omar Hurricane, Lawrence Livermore National Laboratory
- 9:45 am            ***Status of the NIF***  
Gordon Brunton, NIF Director, Lawrence Livermore National Laboratory
- 10:05 am           ***NIF User Office: What's New for Users at the NIF***  
Kevin Fournier, Lawrence Livermore National Laboratory
- 10:25 am           ***Break***
- Session 1: Magnetized Plasmas and Proton Acceleration***  
Chair: Tilo Doeppner, Lawrence Livermore National Laboratory
- 10:45 am           ***Spontaneous and Pre-Imposed Magnetic Fields in Laboratory Plasmas on the NIF***  
Chris Walsh, Lawrence Livermore National Laboratory
- 11:15 am           ***Quantifying Magnetic Field Effects in Strongly Magnetized Cylindrical Implosions***  
Mathieu Bailly-Grandvaux, University of California San Diego
- 11:45 am           ***Calming (or not) Kelvin-Helmholtz Instability with Pre-Imposed B-Field***  
Alexis Casner, Commissariat Energie Atomique
- 12:15 pm           ***Group Photo***



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- 12:30 pm      ***Lunch (Transitioning into The Poster Session)***
- 12:30 pm      ***Working Lunch on the ARC-driven Proton Radiography Platform***
- 1:00 pm      ***Poster Session 1***  
Chair: Heath LeFevre, University of Michigan
- 2:30 pm      ***Break***
- Session 2: Nuclear Astrophysics***  
Chair: Annie Kritcher, Lawrence Livermore National Laboratory
- 2:45 pm      ***Questions in Nuclear Astrophysics***  
Hendrik Schatz, Michigan State University
- 3:15 pm      ***Neutron-Induced Reactions in the High-Density NIF Plasma and Their Nuclear-Astrophysics Nexus***  
Michael Paul, Hebrew University, Racah Institute of Physics
- 3:40 pm      ***Towards the First Plasma-Electron Screening Experiment at the National Ignition Facility***  
Daniel Casey, Lawrence Livermore National Laboratory
- 4:05 pm      ***Constraining the  $3\text{He}+3\text{He}$  Gamow Energy Probed in High Energy Density Plasmas at the National Ignition Facility***  
Patrick Adrian, Los Alamos National Laboratory
- 4:30 pm      ***Probing Nuclear-Plasma Interactions at NIF (Virtual)***  
Andrew Ratkiewicz, Lawrence Livermore National Laboratory



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5:00 pm

***Social Function at Meeting Venue (Garré Vineyard & Winery)***

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Computational Sciences**



6:00 pm

***Adjourn for the day***



# NIF & JLF User Group Meeting

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Wednesday, February 12, 2025

7:00 am **Continental Breakfast and Registration**

8:30 am - 10:00 am **NIF PI Meeting with NIF Management (by invitation)**

### **Session 3: Jupiter Laser Facility**

Chair: Bella Pagano, University of Texas Austin

8:00 am **Opening Remarks**  
Felicie Albert, Lawrence Livermore National Laboratory  
Tom White, University of Nevada Reno

8:10 am **Single-Shot, All-Optical, 2D Time-Resolved Measurements of Laser-Produced Underdense Plasmas at The COMET Laser**  
Elizabeth Grace, Lawrence Livermore National Laboratory

8:30 am **Laser-Plasma Doping as A Tool for Material Research: From Quantum Emitters to Superconducting Diamond**  
Arun Persaud, Lawrence Berkeley National Laboratory

8:50 am **Single Line-Of-Sight Multimodal Radiography with The Titan Laser**  
Matthew Selwood, Lawrence Livermore National Laboratory

9:10 am **Investigating the Electrical Conductivity and Dielectric Properties of Compressed Hydrocarbons Using Ultrafast Terahertz Radiation**  
Eric Sung, SLAC National Accelerator Laboratory

9:30 am **Tensile Strength of High Entropy Alloys by Pulsed Lasers On Janus**  
Sheron Tavares, University of California San Diego



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9:50 am ***Mode Conversion of The COMET Laser And Probing Intense Magnetic Fields in Underdense Plasmas***  
Andrew Longman, Lawrence Livermore National Laboratory

10:10 am ***Break***

10:30 am ***JLF Updates and Overview***  
Félicie Albert, Lawrence Livermore National Laboratory  
Brent Stuart, Lawrence Livermore National Laboratory

11:30 am ***Community Feedback and Discussion***  
Tom White, University of Nevada Reno

12:30 pm ***Lunch (Transitioning into The Poster Session)***

1:00 pm ***Poster Session 2***  
Chair: Chair: Heath LeFevre, University of Michigan

2:30 pm ***Break***

***Session 4: Proton Acceleration & New NIF Experiments***  
Chair: Bruce Remington, Lawrence Livermore National Laboratory

3:00 pm ***Enhanced Proton Acceleration Efficiency Through Electron Confinement***  
Derek Mariscal (on behalf of Natsumi Iwata), Lawrence Livermore National Laboratory

## ***New NIF Experiments***

3:30 pm ***Ion Coupling in Dense Matter Using Nuclear Reactions for Applications to Ion Fast Ignition and HED Science***  
Drew Higginson, Lawrence Livermore National Laboratory



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3:50 pm

## ***The Effects of HED Plasma Environments of Nuclear Fission***

Ellie Tubman (on behalf of Lee Bernstein), University of California, Berkeley

4:10 pm

## ***Exploring the High-Pressure Phase Diagram of Carbon Via Hydrocarbon Chemistry***

Armin Bergemann, University of Rostock

4:30 pm

## ***Oxygen opacity experiments for stellar interiors at NIF***

Daniel Mayes, University of Texas Austin

5:00 pm

## ***Adjourn for the day***



# NIF & JLF User Group Meeting

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**Thursday, February 13, 2025**

7:00 am ***Continental Breakfast and Registration***

***Session 5: NIF User Group Meeting***

Chair: Maria Gatu-Johnson, Massachusetts Institute of Technology

8:00 am ***NIF User Group Meeting and Discussion***

Maria Gatu-Johnson, Massachusetts Institute of Technology (Vice-Chair,  
NIF User Group)

***Session 6: Carbon/ Hydrogen Properties***

Chair: TBD

8:30 am ***Hydrogen Shock Experiments and The Structure of Stars***

Ryan Rygg, Laboratory for Laser Energetics

9:00 am ***Low-Temperature Compression of Crystalline Hydrogen***

Raymond Jeanloz, Lawrence Berkeley National Laboratory

9:30 am ***The Ionization of Dense Carbon Plasmas Measured With X-Ray Thomson Scattering At The National Ignition Facility***

Luke Fletcher, SLAC National Accelerator Laboratory

10:00 am ***Uncovering The Novel Post-Diamond Phase Of Carbon Through NIF Experiments and Billion-Atom MD Simulations***

Ivan Oleynik, University of South Florida

10:30 am ***Break***





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## **Session 7: NIF Sustainment**

Chair: TBD

10:45 am            **General Sustainment ARC**  
Brianna Arth, Lawrence Livermore National Laboratory

11:05 am            **Amplifier Refurbishment**  
Matthew Jones, Lawrence Livermore National Laboratory

11:25 am            **Laser Performance Refreshes**  
Larry Pelz, Lawrence Livermore National Laboratory

11:50 am            **Poster Awards**  
**Sponsored by: General Atomics, Luxel Corporation, and Prism  
Computational Sciences**



12:00 pm            **Adjourn Meeting**

12:10 pm            **NIF and JLF Tours - buses depart from meeting venue (Garré Vineyard  
& Winery)**

2:45 pm            **NIF and JLF Tours Conclude - buses return to meeting venue (Garré  
Vineyard & Winery)**



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## NOTES

Thank you to our generous sponsors!

