



**Board on Physics and Astronomy
2025 Spring Meeting**
April 30-May 1, 2025
Hybrid Meeting
Keck Center, Room 106
500 5th Street NW, Washington, D.C. 20001
ALL TIMES EASTERN DAYLIGHT TIME (UTC-7:00)

WEDNESDAY, APRIL 30, 2025

OPEN SESSION

Vimeo Link

<https://vimeo.com/event/5070591>

9:30 AM	DOE SC Update (30-minute briefing & 15-minute discussion/Q&A)	Dr. Harriet Kung , Director, DOE-SC
10:15 AM	Break (15 minutes)	
10:30 AM	NSF MPS Update (30-minute briefing & 15-minute discussion/Q&A)	Dr. David Berkowitz , Assistant Director, NSF-MPS
11:15 AM	NASA Astrophysics Update (30-minute briefing & 15-minute discussion/Q&A)	Dr. Shawn Domagal-Goldman Acting Astrophysics Division Director NASA-SMD
12:00 PM	Working Lunch (1 hour)	
Session on Quantum Sensing for Precision Measurement and the Exploration of Quantum Matter		
1:00 PM	Overview on Precision Measurement (40-minute briefing & 20-minute discussion/Q&A)	Dr. Gerald Gabrielse , Board of Trustees Professor in Physics, Northwestern University
2:00 PM	Precision Measurements and Atomic Clocks (30-minute briefing & 15-minute discussion/Q&A)	Dr. Jun Ye , Fellow of JILA and National Institute of Standards and Technology
2:45 PM	Break (15 minutes)	
3:00 PM	Exploration of Quantum Matter	Dr. Amir Yacoby , Professor of Physics

(30-minute briefing & 15-minute discussion/Q&A)

and Applied Physics, Harvard

3:45 PM **Applications to Physical and Life Sciences**
(30-minute briefing & 15-minute discussion/Q&A)

Dr. Ronald Walsworth, Minta Martin Professor
and Founding Director, Quantum Technology
Center, University of Maryland

4:30 PM Adjourn for the day

THURSDAY, MAY 1, 2025

OPEN SESSION

Vimeo Link

<https://vimeo.com/event/5070672>

Session on Forefront Science Topics on Atomic, Molecular, Optical, Condensed Matter, & Materials Research

9:00 AM **Attosecond Science with X-ray Lasers**
(30-minute briefing & 15-minute discussion/Q&A)

Dr. Linda Young, Argonne Distinguished Fellow
and Group Leader, Argonne National Laboratory

9:45 AM **Quantum Materials and Sensing from an Experimental Basis**
(30-minute briefing & 15-minute discussion/Q&A)

Dr. Laura Kim, Assistant Professor
of Electrical and Computer
Engineering, University of Florida

10:30 AM Break

10:45 AM **Panel Discussion/Q&A with BPA/SSB Committees**
(10-minute presentations & 20-minute discussion/Q&A)
Each set of co-chairs will discuss two overarching challenges and possible actions in their arena.
Committee on Atomic, Molecular, and Optical Sciences
Condensed Matter and Materials Research Committee
Committee on Radio Frequencies
Committee on Astronomy and Astrophysics

Moderator: Dr. Jill Dahlburg, BPA Chair

Dr. Mette Gaarde, Co-Chair
Dr. Leslie Momoda, Chair
Dr. Scott Paine, Chair
Dr. Alycia Weinberger, Co-Chair

11:45 AM Working Lunch

Session on Industry Perspectives on Accelerating Towards Quantum Computers

12:30 PM **Dr. Charles Tahan**, Partner Microsoft Quantum, Microsoft
(30-minute briefing & 15-minute discussion/Q&A)

1:15 PM **Dr. Pedram Roushan**, Staff Research Scientist, Google
(30-minute briefing & 15-minute discussion/Q&A)

2:00 PM Break

Session on Emerging Technology Areas of Atomic, Molecular, Optical, Condensed Matter, & Materials Research

2:15 PM **Q4S Demonstration: Quantum Entanglement in Space**
(30-minute briefing & 15-minute discussion/Q&A)

Dr. Jay Lowell
Principal Senior Technical Fellow
Boeing Corporation

3:00 PM **Laser Plasma Acceleration Science and Applications**
(30-minute briefing & 15-minute discussion/Q&A)

Dr. B. Manual Hegelich
Associate Professor of Physics

3:45 PM Break (transition to closed session)

IMPORTANT NOTES

Presenters:

- Please do not include ITAR-controlled or sensitive information in your presentation.
- A National Academies Board staff member will ask you to sign a form before the meeting allowing us permission to use your likeness and presentation for our livestream video, which will be posted on our Board website after the meeting. Please get in touch with us before the meeting if you have any concerns about this usage.

Committee & Board Members and Presenters:

- Remote access will be provided through Zoom. This will allow you to participate in the meeting even if you can't be physically present.
- Please note that Zoom allows audio and any materials exchanged or viewed during the session to be recorded and shared.
- By participating in this activity, you agree to let your voice, likeness, and any materials you provide be recorded for use and dissemination. This includes any language, format, or media now known or later devised.
- You release the National Academies of Sciences, Engineering, and Medicine from any and all claims, liability, or damages arising from any such use. If you disagree, please do not join the session.

Thank you all for your cooperation, and we look forward to a successful meeting.