

# 2024 Frontiers in Optics + Laser Science 23–26 September 2024

Colorado Convention Center, Denver, Colorado, USA

Frontiers in Optics + Laser Science will be presented as an in-person event with on-demand content.

Mountain Time (UTC –06:00)

## Agenda of Sessions — Monday, 23 September

Mountain Time (MT, UTC –06:00)	FiO Room 3A	FiO Room 3B	FiO Room 3C	FiO Room 3D	FiO Room 3E	LS Room 3F
07:00–18:00	Registration, <i>Bluebird Pre-Function</i>					
07:30–08:30	Partner and Grow at Optica: Connecting Student Chapters and Technical Groups, <i>Room 103</i>					
08:00–09:00	FM1A • Quantum Technologies Theme: Quantum Sensors	FM1B • Computational Optics for Biological Applications	FM1C • State-Of-The-Art High-Speed Optical Interconnects for Data Centers	FM1D • Advanced Optics in Vision and Biology	FM1E • Frequency Combs, High-Harmonic Generation, and Attoscience I	LM1F • Anderson Dissertation Award Presentations
09:00–09:15	Break					
09:15–10:00	FM2A • FiO Quantum Technologies Visionary Session I, <i>Room 3A</i>					
10:00–10:30	Coffee Break, <i>Bluebird Pre-Function</i>					
10:00–11:00	Optica Publishing Group Meet the Journal Editors, <i>Bluebird Nook</i>					
10:30–12:30	Optica Foundation Challenge Information Symposia, <i>3GH</i>					
10:30–12:30	FM3A • Quantum Technologies Theme: Quantum Computing Hardware	FM3B • Holographic Acquisition and Imaging, and Optical Processing	FM3C • Advances in Free Space Optical Communications and Quantum Networking	FM3D • Advanced Optics in Label-Free Imaging	FM3E • Integrated Devices and Systems for Nonlinear Optics	LM3F • Nanoscale Excitations and Dynamics
12:00–18:00	Laser Science Symposium on Undergraduate Research, <i>Bluebird 2GH</i>					
12:30–13:30	Optica Technical Group Lightning Laser Science Talks, <i>Room 3GH</i>					
12:30–14:00	Lunch on Own					
12:45–13:45	Optica Nonimaging Optical Design Technical Group Special Talks, <i>Room 3B</i>					
14:00–15:00	Optica Foundation Challenge Environment Symposia, <i>Room 3GH</i>					
14:00–15:30	FM4A • Quantum Technologies Theme: Quantum Computing Applications	FM4B • Optical Encoding, Diffractive Processors and Neural Networks	FM4C • Utilizing Optical Fiber Networks for Sensing and Time Transfer	FM4D • Advanced Neuro-Optics and Optical Fabrication	FM4E • Frequency Combs, High-Harmonic Generation, and Attoscience II	LM4F • Attosecond and X-ray Light Sources
15:30–16:00	Coffee Break, <i>Bluebird Pre-Function</i>					
16:00–18:00	FM5A • Quantum Technologies Theme: Quantum Networking and Photonic Integrated Circuits	FM5B • Wavefront Techniques, and Intelligent Optics	FM5C • Photonic and Atomic Quantum Technologies	FM5D • Advanced Optics in Microscopy and Sensing	FM5E • Silicon Photonics and Heterogeneous Integration	LM5F • Strong-Field Driven Quantum Phenomena in Materials and Gases
16:30–17:15	Optica Annual Business Meeting, <i>Rooms 109-111</i>					
18:15–21:30	FiO + LS Awards Ceremony and Reception (Invitation Only), <i>Bluebird Terrace</i>					
18:30–20:00	Optica Technical Group Poster Competition, <i>Bluebird 2A</i>					

### Key to Conference Abbreviations

F – Frontiers in Optics    L – Laser Science    Sp – Special Event    J – Joint Session

Current as of 13 September 2024. The updated schedule is available in the mobile app, and the online schedule.

# Agenda of Sessions — Tuesday, 24 September

Mountain Time (MT, UTC -06:00)	FiO Room 3A	FiO Room 3B	FiO Room 3C	FiO Room 3D	FiO Room 3E	LS Room 3F
07:00–18:00	Registration, <i>Bluebird Pre-Function</i>					
08:00–09:00	FTu1A • Virtual Reality and Augmented Vision Theme: Perception	FTu1B • Surface and Nanostructure Metrology	FTu1C • Nano-Devices and Applications	FTu1D • Photonic Computing and Sensing on Integrated Platform	FTu1E • Laser-Plasma Based Acceleration, Light Sources, and Frequency Comb	LTu1F • Ultrafast and Nonlinear Probes of Quantum Materials
09:00–09:15	Break					
09:15–10:00	FTu2A • FiO Virtual Reality and Augmented Vision Visionary Session, <i>Room 3A</i>					LTu2B • Laser Science Visionary Session I
10:00–17:30	Science + Industry Showcase, <i>Theater, Bluebird Ballroom 1-2</i>			Science + Industry Showcase, <i>Exhibit Hall, Bluebird Ballroom 1-2</i>		
	<p>JTu3A • Joint Plenary Session I, 10:30–11:30</p> <p>Impacts of Quantum Technologies on Society – Quantum for Good?, 11:45–12:45</p> <p>Academia, Industry, Government... What's Right for You?, 13:30–14:30</p> <p>Did You Know?, 14:45–15:45</p>			<p>Coffee Break with Exhibitors, 10:00–10:30 <i>Sponsored by American Institute of Physics, Reality Labs Research, and Optimax Systems, Inc.</i></p> <p>American Physical Society Division of Laser Science, Booth 405, 10:00–17:30</p> <p>Optica Career Zone, Booth 209, 10:00–17:30</p> <p>Optica Booth, Booth 117, 10:00–17:30</p> <p>JTu4A • Joint Poster Session I, 11:30–13:00</p> <p>Lunch with Exhibitors, 13:00–14:00</p> <p>JTu5A • Joint Poster Session II, 14:00–15:30</p> <p>Coffee Break with Exhibitors, 15:00–15:30 <i>Sponsored by American Institute of Physics, Reality Labs Research, and Optimax Systems, Inc.</i></p> <p>About CPIA (Colorado Photonics Industry Association), <i>Optica Booth 117, 16:00–16:30</i></p> <p>Colorado Photonics Industry Association Happy Hour, 16:30–18:00, <i>Optica Booths 117 and 319</i></p>		
13:00–14:00	Optica Holography and Diffractive Optics Technical Group Networking Event, <i>Room 104</i> Optica Polarization Management and Propagation Technical Group Networking Event, <i>Room 103</i>					
15:30–17:00	Optica Foundation Challenge Health Symposia, <i>3GH</i>					
15:30–17:00	FTu6A • Virtual Reality and Augmented Vision Theme: Enabling Technologies	FTu6B • Cytometry, Deflectometry and Diffractive Networks	FTu6C • Quantum Information, Communication, and Sensing	FTu6D • Metasurfaces and Nanophotonics	FTu6E • Ultrafast Lasers and Applications I	LTu6F • Laser-Based Precision Metrology
17:00–17:30	Break					
17:00–18:00	Meet the Optica Foundation Challenge Winners Happy Hour, <i>Room 3GH</i>					
17:30–18:30	JTU7A • Joint Postdeadline Paper Session, <i>Room 3A</i>					DLS Business Meeting
18:30–20:00	Conference Reception, <i>Bluebird Terrace</i>					

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# Agenda of Sessions — Wednesday, 25 September

Mountain Time (MT, UTC -06:00)	FiO Room 3A	FiO Room 3B	FiO Room 3C	FiO Room 3D	FiO Room 3E	LS Room 3F
07:30–18:00	Registration, <i>Bluebird Pre-Function</i>					
08:00–09:00	FW1A • Virtual Reality and Augmented Vision Theme: Applications I	FW1B • Machine Learning Theme: Biomedical Applications I	FW1C • Laser and Optical Technologies	FW1D • MEMS and Piezo-Optomechanical Devices	FW1E • Optical Interactions	LW1F • Quantum Computing and Sensing
09:00–09:15	Break					
09:15–10:00	FW2A • FiO Quantum Technologies Visionary Session II, <i>Room 3A</i>					LW2B • Laser Science Visionary Session II
10:00–17:30	Science + Industry Showcase, <i>Theater, Bluebird Ballroom 1-2</i>			Science + Industry Showcase, <i>Exhibit Hall, Bluebird Ballroom 1-2</i>		
	<p>JW3A • Joint Plenary Session II, 10:30–11:30</p> <p>Tech talk: Precision Redefined Quantum Sensing and Metrology in Optical Clocks, 11:45–12:45</p> <p>Photonics in Emerging Economies, 13:30–14:30</p> <p>Tech Talk: Physics-Assisted Machine Learning and Semiclassical Approaches to Quantum System Modeling, 14:45–15:30</p> <p>The 3-Minute Thesis, 16:00–16:30</p>			<p>Coffee Break with Exhibitors, 10:00–10:30 <i>Sponsored by American Institute of Physics, Reality Labs Research, and Optimax Systems, Inc.</i></p> <p>American Physical Society Division of Laser Science, <i>Booth 405</i>, 10:00–17:30</p> <p>Optica Career Zone, <i>Booth 209</i>, 10:00–17:30</p> <p>Optica Booth, <i>Booth 117</i>, 10:00–17:30</p> <p>JTu4A • Joint Poster Session III, 11:30–13:00</p> <p>Lunch with Exhibitors, 13:00–14:00</p> <p>JTu5A • Joint Poster Session IV, 14:00–15:30</p> <p>Coffee Break with Exhibitors, 15:00–15:30 <i>Sponsored by American Institute of Physics, Reality Labs Research, and Optimax Systems, Inc.</i></p>		
15:30–17:00	FW6A • Virtual Reality and Augmented Vision Theme: Applications II	FW6B • Machine Learning Theme: Optical Design Applications	FW6C • Quantum Computing and Communication	FW6D • Imaging Exploiting Encoding and Decoding	FW6E • Ultrafast Optical Interactions in Nanostructured Materials	LW6F • Quantum Photonics and Entanglement
17:00–17:30	Break					
17:30–19:00	FW7A • Virtual Reality and Augmented Vision Theme: Systems Design	FW7B • Machine Learning Theme: Photonic Design Applications	FW7C • Photonic Design and Quantum Optics	FW7D • Integrated Devices and Systems for Quantum Applications	FW7E • Optical Interactions and Resonators	LW7F • Metamaterials I (ends at 19:30)
19:00–20:00	Optica Display Technology Technical Group Networking Event, <i>Bluebird Nook</i>					
19:30–21:00	FiO Movie Night, <i>Room 3G</i>					

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# Agenda of Sessions — Thursday, 26 September

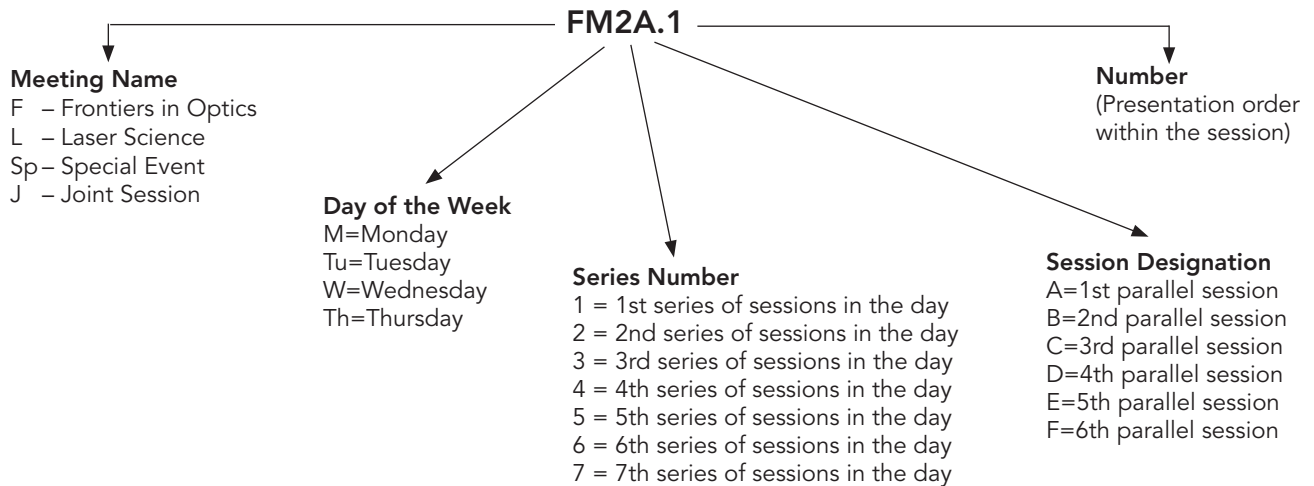
Mountain Time (MT, UTC -06:00)	FiO Room 3A	FiO Room 3B	FiO Room 3C	FiO Room 3D	FiO Room 3E	LS Room 3F
07:30–10:30	Registration, <i>Bluebird Pre-Function</i>					
08:00–09:00	FTh1A • Machine Learning Theme: Biomedical Applications II	FTh1B • Quantum Information Control	FTh1C • Interferometry and Frequency Combs	FTh1D • Advanced Integration and Fabrication	FTh1E • Ultrafast Lasers and Applications II	LTh1F • Metamaterials II
09:00–09:15	Break					
09:15–10:00	FTh2A • FiO Machine Learning Visionary Session, <i>Room 3A</i>					LTh2B • Laser Science Visionary Session III
10:00–10:30	Coffee Break, <i>Bluebird Pre-Function</i>					
10:30–12:30	FTh3A • Machine Learning Theme: Computational Imaging and Machine Learning	FTh3B • Novel Optical Fiber Design	FTh3C • Waveguides and Nanostructures	FTh3D • Integrated Devices on Silicon and SiN Platform	FTh3E • Complex States of Light	LTh3F • Nanophotonics

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## Explanation of Session Codes



The first letter of the code signifies the topical. The second letter of the code denotes the day of the week (Monday=M, Tuesday=Tu, etc.). The third element indicates the session series in that day. For instance, 1 would denote the first parallel sessions in that day. Each day begins with the letter A in the fourth element and continues alphabetically through a series of parallel sessions. The number on the end of the code (separated from the session code with a period) signals the position of the talk within the session (first, second, third, etc.). For example, a presentation coded FM2A.1 indicates that this FiO paper is being presented on Monday (M) in the second series of sessions (2), and is the first parallel session (A) in that series and the first paper (1) presented in that session.

### Online Access to Technical Digest

Full Technical Attendees have both EARLY and FREE perpetual access to the digest papers through the Optica Publishing Group platform.

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