OPTICA

Incubator on Cryogenic Integrated Photonics for Classical and Quantum Systems

10 - 12 September 2025

Hosted by:

Paolo Pintus, University of Cagliari, Italy
Galan Moody, University of California, USA
Mo Soltani, RTX BBN Technologies, USA

Wednesday, 10 September 2025

Afternoon **Attendees arrive in DC and check into into the Royal Sonesta Hotel**
2121 P St NW, Washington, D.C. 20037

18:00 **Welcome Dinner**
La Tomate, 1701 Connecticut Ave NW, Washington, D.C. 20009

Thursday, 11 September 2025

08:00 EDT **Breakfast at Optica Headquarters**
2010 Massachusetts Ave NW

08:30 EDT **Welcome Remarks from Optica**

08:45 EDT **Program Overview & Goals**
Hosts

Session - Optical Data Links / Ingress & Egress Data Links

09:00 EDT **Overview Talk (25 minutes)**
Franklyn Quinlan (NIST) - ***Cryogenic photonic link for control and readout superconducting qubits***

09:30 EDT **Flash Talks (12 minutes)**
Invited Speaker 1: Matthew J. Weaver (QPhox) - ***Scalable quantum computing with optical links***

Invited Speaker 2: Milos Popovic (Boston University) - ***Recent progress in cryogenic modulators on CMOS platforms***
Invited Speaker 3: Karl Berggren (MIT) - ***Single photon detectors***

10:10 EDT Panel Discussion

10:40 EDT Coffee Break

Session - Classical and Quantum Sensors and Transducers

11:00 EDT Overview Talk
Amir Safavi-Naeini (Stanford) - ***Cryogenic electro-optic and piezo-optomechanical transducers***

11:30 EDT Flash Talks
Invited Speaker 1: Paul Seidler (IBM Research GmbH) - ***Recent progress in barium-titanate and gallium phosphide transducers***
Invited Speaker 2: Hong Tang (Yale) - ***Superconducting electro-optic modulators for quantum transduction***
Invited Speaker 3: Mohammad Mirhosseini (Caltech) - ***Integrated devices for microwave-to-optical quantum transduction***

12:10 EDT Panel Discussion

13:00 EDT Lunch at Optica Headquarters

Session - Device Scalability / Integration / Manufacturing

14:00 EDT Overview Talk
Jeff Shaineline (Great Sky) - ***Integrated photonics and superconducting electronics for high-speed, large-scale AI***

14:30 EDT Flash Talks
Invited Speaker 1: Nicolas Maring (Quandela) - ***Cryogenic optical devices for photonic quantum computing***
Invited Speaker 2: Evan Jeffrey (Google) - ***The needs and requirements of superconducting quantum computers***
Invited Speaker 3: Robert Hadfield (University of Glasgow) - ***Superconducting single-photon detectors***

15:10 EDT Panel Discussion

15:40 EDT Coffee Break

Session - Systems Architectures

16:00 EDT Overview Talk

Reza Nejabati (Cisco) - ***Architectures for quantum data center networks***

16:30 EDT **Flash Talks**
Invited Speaker 1: Chi Xiong (IBM) - ***Optical interconnects for scaling superconducting quantum systems***
Invited Speaker 2: John Jarman (Nu Quantum) - ***Distributed quantum computing architectures based on entanglement fabric***
Invited Speaker 3: Sean Sullivan (MemQ) - ***Extensible Quantum Network Architecture (xQNA)***

17:10 EDT **Panel Discussion**

18:00 EDT **Networking Dinner**
Bistrot Du Coin, 1738 Connecticut Ave NW, Washington, D.C. 20009

Friday, 12 September 2025

08:00 EDT **Breakfast at Optica Headquarters**
2010 Massachusetts Ave NW

08:30 EDT **Industry Capabilities Showcase**

09:00 EDT **Programming - roadmap breakout sessions**

10:30 EDT **Coffee Break**

10:45 EDT **Programming - roadmap discussion**

12:00 EDT **Lunch**

13:00 EDT **Wrap-up/Discuss Next Steps**

14:00 EDT **Adjourn**