Northeastern University

**SEMINAR**
**Quantum Materials and Sensing Institute (QMSI)**

# "Superfluids of light"

**Prof. David W. Snoke**
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**Wednesday, October 15, 2025, 10:30 am-11:30 am**
**Venue: QMSI Conference Room, Elliott Hall, Burlington Campus**
**145 South Bedford St, Burlington, MA**

The seminar is both in person and Online

**Abstract:**

It is possible to engineer the properties of photons in an optical medium to have an effective mass and repulsive interactions, so that they act like a gas of atoms. These "renormalized photons" are called polaritons. In the past decade, several experiments have demonstrated many of the canonical effects of Bose-Einstein condensation and superfluidity of polaritons. In this talk I will review some of this past work and present recent results with polaritons that have very long lifetime, including our recent results on persistent circulation of a polariton condensate.

Bio: David Snoke is Distinguished Professor of Physics at the University of Pittsburgh, where he has been since 1994, and co-director of the Pittsburgh Quantum Institute. His undergrad degree in physics is from Cornell University, and his Ph.D. is from the University of Illinois at Urbana-Champaign. After his Ph.D. in 1990, he was a postdoc with Manuel Cardona at the Max Planck Institute in Stuttgart, Germany, and then spent a short time doing optics in industry. In 2006 he was elected a Fellow of the APS "for his pioneering work on the experimental and theoretical understanding of dynamical optical processes in semiconductor systems." He has published over 180 scientific papers and five scientific books, including the recent *Interpreting Quantum Mechanics: Modern Foundations* with Cambridge University Press.