

# OSE SEMINAR SERIES

Dr. Tara Drake

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Thursday, September 12, 2019 at P&A, Room 190 from 12:15 AM to 1:15 PM

## Microresonator Optical Frequency Combs

### Abstract:

The invention of optical-frequency combs has transformed the fields of precision metrology, spectroscopy, and electronic/photonics signal generation. Now, a new and incredibly promising platform for frequency combs has emerged—one in which phase coherent combs are generated in nanofabricated ring resonators using quantum nonlinear photonics. I will present the principles behind microresonator combs, their recent application in integrated-photonics optical synthesizers and optical clocks, and a new experiment using laser cooling to control the particle-like properties of the comb light itself.

### Biography:

Tara Drake is a new UNM professor in CHTM and the department of physics. She was previously an NRC postdoctoral fellow at the National Institute of Standards and Technology in Boulder, Colorado, where she worked on the design and implementation of microresonator combs for integrated-photonics applications. Tara got her PhD at JILA and the University of Colorado in the group of Deborah Jin, where she created and studied exotic superfluids in gases of ultracold atoms.

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