# Departments of Physics and Math Colloquium

# Plasmonically-Powered Nonlinear Dynamics in Nanofluids

**Dr. Luat T. Vuong**

Queens College and the Graduate Center of the City University of New York

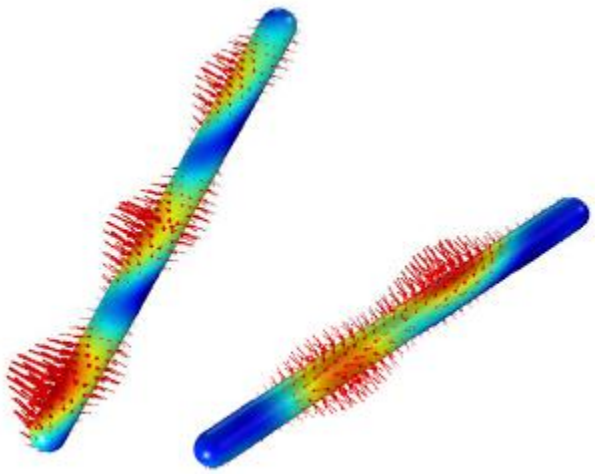
**Friday, February 13, 2015**

**1:30 – 2:30 PM**

**Venue: GC280, MMC**

**Refreshments will be served at 1:15 PM**

**Abstract:** Plasmonic metal nanoparticles are well-known to absorb and concentrate light, but less well-studied are the complex, cascaded thermal, electrochemical, and mechanical interactions of nanoparticles when placed in liquids, *i.e.*, nanofluids. In this talk I will describe my recent investigations of the nonlinear light-induced magnetic and mechanical responses of gold and silver nanofluids. The processes point to new methods of bottom-up self-assembly, materials synthesis, and optomechanical control that employ sunlight and LEDs. From a fundamental standpoint, the results highlight several anomalous behaviors of nanofluids that are not yet well understood.



**Biography:** Professor Luat T. Vuong received her B.S. in Engineering Physics from the University of California at Berkeley and her Ph.D. in Applied Physics from Cornell University. She was a Fulbright Scholar at the Technical University of Delft in the Netherlands and a postdoctoral researcher at ICFO- The Institute of Photonic Sciences in Spain before she joined Queens College in 2010 as Assistant Professor in the Physics Department. She was awarded an NSF CAREER in 2012. Her current research is at the intersection of plasmonics, nonlinear dynamics, and nanofluids, with foci on angular momentum and vortices.

*The event is free and open to the public.*

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