

# Medical Acoustics and Ultrasound (MAUS) Seminar

*Co-hosted by the George W. Woodruff School of Mechanical Engineering  
and Georgia Tech's Bioengineering Graduate Association*



**Lilo D. Pozzo, Ph.D.**

The Weyerhaeuser Endowed Associate Professor  
Department of Chemical Engineering  
University of Washington, Seattle, WA

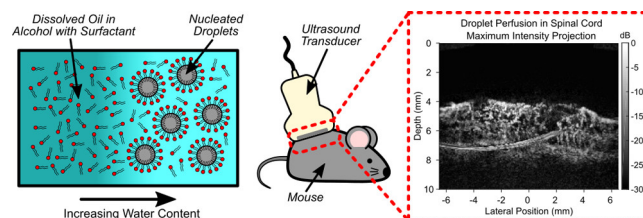
## “Nano-Emulsion design, synthesis and applications in medicine”

**Tuesday, June 18 at 3:00 p.m.**

Molecular Science and Engineering Building, Room 1201A

### Abstract

Molecularly engineered nano-emulsion systems are finding increased interest for use in medicine as imaging and therapeutic agents. In particular, perfluorinated emulsions act as powerful contrast agents with controlled triggering in ultrasound and photoacoustic imaging modalities. In these systems, energy delivered non-invasively by near-infrared light and/or by ultrasound fields promotes the controllable cavitation of nanodroplets to transiently produce micrometer bubbles. Under suitable conditions, abrupt vapor re-condensation and bubble collapse generates strong acoustic fields that are used for sensing, image reconstruction, drug delivery and/or tumor or blood clot ablation. This talk will cover recent results from my group related to the synthesis, characterization, optimization and use of novel phase-change nano-emulsion systems intended for use in medical applications.



### Bio

Prof. Pozzo's research interests are in the area of soft materials and nanotechnology. Her research group focuses on controlling and manipulating materials structure for applications in health, alternative energy and chemical separations. More recently, Prof. Pozzo has been studying the effects of resilient clean energy systems on the health of people living in remote, isolated and impoverished communities. Prof. Pozzo obtained her B.S. from the University of Puerto Rico at Mayagüez and her PhD in Chemical Engineering from Carnegie Mellon University in Pittsburgh PA. She also worked in the NIST Center for Neutron Research as a post-doctoral fellow and is currently the Weyerhaeuser Associate Professor of Chemical Engineering at the University of Washington where she has served since 2007. In addition to her research activities, she is also dedicated to improving engineering education with course development in areas of entrepreneurship and service-oriented global engagement.

Medical Acoustics and Ultrasound (MAUS) is a student-run organization that provides a collaborative environment for graduate and undergraduate students, post docs, and professors whose research pertains to ultrasound and biomedical acoustics. If interested in learning more about MAUS, please contact Phoebe Welch ([pwelch8@gatech.edu](mailto:pwelch8@gatech.edu)) for more information.