

## *Graduate Mathematics Seminar*

*Modeling of thin liquid films flowing down a cylindrical fiber -  
experiments and applications.*

**Dr. Claudia Falcon**  
*University of California Los Angeles*



**Abstract:** Recent experiments of thin films flowing down a vertical fiber with varying nozzle diameters present a wealth of new dynamics that illustrate the need for more advanced theory. Determining the regime transitions from absolute (Rayleigh-Plateau) instability is useful in the design of heat and mass exchangers for applications that include cooling systems and desalination. We present a lubrication model that includes slip boundary conditions, nonlinear curvature terms, and a film stabilization term. This theory is compared with the observed velocity and stability of traveling droplets in the experiments.

***When:*** Monday, September 9, 2019, 6:00 – 7:00 pm

***Where:*** CSUCI, Sierra Hall 2411

One University Drive, Camarillo, California 93012-8599 Tel: (805) 437-8967 Fax: (805) 437-8864 [www.csuci.edu](http://www.csuci.edu)