UNIVERSITY OF CALIFORNIA
MERCED | School of Natural Sciences

APPLIED MATHEMATICS SEMINAR 291

Helical Swimming and Helical Buckling—Explorations in Elastohydrodynamics at the Microscale

Date: **11/8/19**

Time: **3:00 PM**

Location: **COB1 265**

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Abstract

The motion of actuated or passive elastic filaments in a fluid environment is a common element in many biological systems. Examples include diatom chains moving in the ocean, bacterial flagella propelling a cell body, cilia in pulmonary airways, and the polymers embedded in a viscous fluid whose microscopic behavior give rise to macroscopic rheological properties. In cases where these flexible filaments move through confined environments at zero Reynolds number, the confinement could have a dramatic effect upon the dynamics of the system. We will present recent results on the computational modeling of two such systems: the swimming of helical filaments in narrow tubes and the dynamics of actin-like fibers in straining flow.