



FRIENDS OF THE KAVLI INSTITUTE FOR THEORETICAL PHYSICS

Chalk Talk



The Tao of Fish Swimming

The ability of animals to sense and navigate complex environments is unrivaled by even the most sophisticated robots. Nowhere is this more challenging to understand than in the three-dimensional environment of water, where animals are unconstrained by gravity with appendages and bodies at the mercy of the complex fluid-structure interactions of turbulent flow. Fishes, which comprise over half of all living vertebrates, have an exquisite control mechanism for negotiating turbulence. I will describe advances my lab has made in understanding how fish swim in unsteady flows, and how by studying nature's designs we can reveal insights into some of the biggest challenges in engineering and robotics.

Tuesday, August 7, 2018
Kohn Hall, UCSB
5:30 Courtyard Reception
6:15 - 7:15 Presentation and Discussion

Attendance by Reservation Only
RSVP by Monday, August 6:

Online: <https://www.kitp.ucsb.edu/chalk-talk-rsvp>
Phone: (805) 893-6350 or friends@kitp.ucsb.edu

Lot 10 parking

As you enter campus from Hwy 217, turn right onto Mesa Rd, merge into the left lane, and at the stop light turn left into Parking Structure 10. Park, buy a permit from the dispenser (near the elevator and stairs), and display the permit on your dashboard. The KITP is right next door to the parking structure.



James Liao

Associate Professor,
University of Florida

James C. Liao is an Associate Professor of biology at the University of Florida and the Whitney Laboratory for Marine Bioscience, a UF University Term Professor, and Affiliate Professor in the Clayton Pruitt Family Department of Biomedical Engineering. His research integrates approaches from engineering, neuroscience and physiology to understand the fundamental principles of animal sensing and locomotion. In particular, understanding how fishes behave from the perspective of multiple biological levels, from single neurons to group behavior. He is a Research Associate at the American Museum of Natural History and an Affiliate Curator of Ichthyology at the Florida Museum of Natural History. James received his B.A. magna cum laude in Biology from Wesleyan University, and his M.A. and Ph.D. in Biomechanics from Harvard University. He was then an NIH postdoc and Research Associate in the Department of Neurobiology and Behavior at Cornell University. He has won research awards from The Society for Experimental Biology and the American Society for Ichthyologists and Herpetologists, and has been recognized by the Derek Bok Center for Excellence in Teaching at Harvard.