



# PHYSICS COLLOQUIUM: Understanding biological locomotion in fluids

**Date:**

9/30/2022

**Time:**

10:30 AM - 11:50 AM

**Location:**

KOLLIG 217

**Jun Zhang**

Professor, Courant Institute and Department of Physics  
New York University



**About The Speaker:**

Dr. Jun Zhang is a jointly appointed Professor of Physics and Mathematics, NYU and NYU Shanghai. Since 2001 he has been the Co-Director of the Applied Math Laboratory in the Courant Institute of Mathematical Sciences, NYU. He holds a PhD in physics from the Niels Bohr Institute at the University of Copenhagen, and is an elected Fellow of the American Physical Society (APS). His research activities focus on many fluid phenomena arising from the biological and geophysical world. In particular, he is interested in how bird and fish move in the air and water, respectively, and he has been trying to understand the rich dynamics hidden inside the earth.

**Abstract:**

Understanding how animals move is very important to us as we try to comprehend the animal kingdom and be inspired by their strategies when moving around. Subject to physical laws, animal locomotion gaits may look vastly diverse across many species but most of them do share some very common features. For example, birds flap their wings in the air and fish flap caudal fins (tails) in water. Such flapping motions and their interaction with the surrounding fluids has been a central problem in fluid dynamics. In this talk, I will discuss a few simple experiments as we study how animals move in water and air. Through these studies, the familiar phenomena of animal swimming and flying may offer a few surprises.



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