Brooke Flammang

Assistant Professor, Biological Sciences at New Jersey Institute of Technology

Newark, NJ, US

Professor Flammang specializes in functional morphology, biomechanics, and bioinspired technology of fishes, including sharks and remora.

Biography

Flammang leads the Fluid Locomotion Laboratory where her team integrates comparative anatomy and physiology, biomechanics, fluid dynamics and biologically inspired robotic devices to investigate ways in which organisms interact with their environment and drive the evolutionary selection of morphology and function. Over the course of her research career, Flammang has published more than 30 peer-reviewed papers that span fields of biomechanics, bioinspired robotics, comparative anatomy and physiology, and hydrodynamics. Flammang was featured in Bioinspiration & Biomimetics for her team?s study showcasing the novel design of a biologically inspired adhesive device capable of replicating the suction ability of remora fish. Since her arrival at NJIT in 2014, Flammang has received multiple fellowships and awards, including the 2017 Carl Gans Award by the Society for Integrative and Comparative Biology for distinguished contributions to the field of comparative biomechanics. She has been awarded numerous research grants including a current $997,510 National Science Foundation Understanding Rules of Life grant to launch the first evolutionary study of the unique pelvic structure and walking mechanics of blind cavefish (Cryptotora thamicola), and use bioinspired robotics to understand the physics underlying the evolution of terrestrial locomotion. Her work has been profiled by major news outlets including The New York Times, The Washington Post, Wired, BBC Radio 5, Discovery Channel, and National Geographic Wild. She was named one of the "best shark scientists to follow" by Scientific American in 2014.

Areas of Expertise

Marine Biology, Physiology, Biomechanics, Biology, Biomechanics of Animal Locomotion, Anatomy

Affiliations

Rutgers University : Graduate Faculty, Ecology and Evolution, Columbia University : Seminar Associate, Museum of Comparative Zoology, Harvard University : Associate of Ichthyology, Fluid Locomotion Laboratory: Principal Investigator

Education

Harvard University

Ph.D. Biology

California State University, Monterey Bay

MS Marine Science

Fairleigh Dickinson University
BS Marine Biology

Accomplishments

Dorothy M. Skinner Award, Society for Integrative and Comparative Biology
2013

The Carl Gans award, Society for Integrative and Comparative Biology
2017

Letter of Commendation for Distinguished Teaching Performance, Harvard University
2009

Commendation for Outstanding Technical Service, US Environmental Protection Agency
2003
