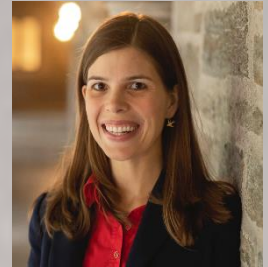


Evolution and Engineering in the Avian World

Friday, January 28th, 2022
12:30 PM



Mary Caswell Stoddard (Cassie)
Princeton University

MAE Seminar Series (Virtual)

Birds evolved about 150 million years ago, and today they are the most diverse and colorful land vertebrates. In my group, we are fascinated by the ecological and evolutionary processes that contribute to avian diversity. We currently study the avian egg, a remarkable structure that is built to break. From an evolutionary perspective, bird eggs are intriguing because they come in a variety of shapes, sizes, colors, and structures despite the fact that they serve the same essential function: to nourish and protect the chick. From an engineering perspective, eggshell is impressive because it is a strong, lightweight material that must serve two competing biomechanical functions. I will describe two recent projects—incorporating evolutionary and engineering perspectives—on egg shape and structure. We also study avian coloration and color vision—especially in wild hummingbirds. I will highlight some recent projects that give a glimpse into the colorful world of birds, with insights from optics, soft matter and mechanics.

Mary Caswell Stoddard (Cassie) is an associate professor in the Department of Ecology and Evolutionary Biology at Princeton. Cassie received her undergraduate degree from Yale University. On a Marshall Scholarship, she completed her Ph.D. at the University of Cambridge before joining the Harvard Society of Fellows as a Junior Fellow. She joined the Princeton EEB Department in 2016. Cassie was a 2018 Sloan Research Fellow and is a current Packard Fellow.

