



Tommy Edmondson

Endowed Biology Seminar

By: Cassie Stoddard

Princeton University | Associate Professor, Department of Ecology & Evolutionary Biology

<https://www.marycstoddard.com/>

The Evolution of Colorful Signals and Structures in the Avian World



Monday, April 18, 2022
12:00pm PST

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 drive this variation. Much of our work investigates coloration and vision in

birds. A fundamental challenge is that birds see differently from humans: they have tetrachromatic vision (four color cone-types) and ultraviolet sensitivity. To estimate a “bird’s-eye view,” we combine advanced imaging techniques with new computational methods. This has allowed us to test ideas about how birds use color to attract mates, avoid predators and deceive rivals. In the field, we are establishing a system for studying color perception in wild hummingbirds in the Rocky Mountains. These tiny iridescent birds lead colorful lives, performing spectacular courtship dives and pollinating diverse wildflowers. We also study the avian egg, a remarkable structure that is tough but breakable. The eggs laid by flightless emus offer insights into avian behavior and evolution. We apply an interdisciplinary approach, combining tools from mathematics, computer vision and bioengineering, to explore the avian world.

Seminar Speaker Host: Yasmeen Erritouni

