Department of Biology
College of Arts + Sciences | Indiana University Bloomington

Distinguished Alumni Lecture Series

"Choanoflagellates and the origin of animals"

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Monday
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4 pm

Myers Hall 130

Refreshments served prior to seminar

Abstract:
The evolution of animals from their protozoan ancestors marks one of the most pivotal, and poorly understood, events in life's history. Although the fossil record is silent on the matter of animal origins, studies of the closest living relatives of animals, choanoflagellates, offer unique windows into animal origins and core features of animal cell biology. I will first provide a historical retrospective of choanoflagellate research, from their discovery in the 1800s to their recent establishment as experimentally tractable model organisms. From there, I will describe how our study of choanoflagellates has enriched our understanding of the first animals. Finally, I will describe our most recent work, in which we found that a multicellular choanoflagellate from Curaçao undergoes actomyosin-mediated apical cell contractility in response to light/dark transitions. This finding, and the subsequent discovery that actomyosin contractility is widespread in choanoflagellates, suggests that cellular mechanisms underlying gastrulation and neurulation predate the origin of animals.