

Johns Hopkins University

Department of Biology Seminar Series

Thursdays, 4:00pm

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Mudd Room 100 - October 24th, 2024



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Indiana University

Host: Erik Andersen

Molecular canalization and microevolution of a developmental polyphenism

A widespread ability among animals and plants is for their traits to develop differently in response to varying environmental pressures. In some cases, such plastic responses even result in a “switch” between alternative and often strikingly different forms, a phenomenon known as developmental polyphenism. Using species of nematodes that assume different feeding-forms in response to starvation and local competition, my lab asks how polyphenism is regulated at a molecular level, what the genetic basis for change in this regulation is, and what consequences polyphenism may hold for downstream morphological evolution. Here, I present two threads of recent work we have done to address these questions. First, I describe the molecular factors that ensure a polyphenism decision is realized by funneling morphological variation into two stereotyped forms. Second, I show what natural variation and real-time evolution of polyphenism can teach us about how plastic responses change.