

Genetics and Genomics (G2) Seminar Series



**INSTITUTE FOR GENOME
SCIENCES AND SOCIETY**
TEXAS A&M UNIVERSITY

The Interdisciplinary Faculty of Genetics
Genetics Graduate Student Association



Causes and Consequences of Doing It with Yourself: Evolutionary Dynamics of Parasitic Flatworm Mating Systems

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Texas A&M University**

A central focus of my lab is to understand how parasite life histories and ecological dynamics influence parasite evolution. Under the umbrella of hermaphroditic mating systems of parasitic flatworms, I will discuss two systems that illustrate the interplay between parasite ecology/life history and evolution. With the first system, a tapeworm of geckos, we provide the first nature-derived, direct selfing-rate and kin-mating estimates for a hermaphroditic parasite. Notably, we present novel frameworks, metrics, and analyses to study the role transmission, a fundamental element of parasite ecology, has in influencing inbreeding, an evolutionary mechanism with genome-wide effects. In the second system, we explore an evolutionary consequence of a change in life cycle complexity, a key tenet of parasite life history. I will first give our molecular phylogeny of the trematode genus *Alloglossidium*, which contains among-species variation in life cycle patterns, to elucidate the origins of precociousness, i.e., sexual maturation in what is typically regarded as an intermediate host. Then, I will show how in one species, forced self-mating (an outcome of the precocious development) has the consequential impact of causing reproductive trait evolution, i.e., changes in sex allocation. I will conclude with a brief overview of our new NSF funded project tackling the big picture topic of complex life cycle evolution itself. In particular, we will be using comparative population genetic studies to test the theoretical mating system model of complex life cycle evolution.



Monday, September 3, 2018

4:00 p.m.

Auditorium/Room 108

BioBio Building

Refreshments at 3:30 p.m. in the lobby.

Host: Dr. David Threadgill
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Genetics

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