



The Department of Ecology and Evolutionary Biology Fall 2017 Seminar Series

Mechanisms of Freeze Tolerance: Lessons from Space and Time

Freeze tolerance is an extreme adaptation that is found broadly across the tree of life, including several animal lineages (both invertebrate and vertebrate) as well as in many plant species. Yet many questions remain about the basic mechanisms of freeze tolerance, particularly since the classical cryoprotectant systems do not seem to correlate well with the degree of freeze tolerance. Comparing organisms both across space and time is a useful method for elucidating novel freeze tolerance mechanisms even in well-described models of freeze tolerance. In this talk I'll focus on my work on insect and intertidal invertebrate freeze tolerance. I start by describing a novel lipid class associated with freeze tolerance in the goldenrod gall fly and its seasonal dynamics associated with the acquisition of freeze tolerance. Then I describe 'omics approaches coupled with exploitation of spatial heterogeneity in degree of freeze tolerance for novel hypothesis generation in freeze tolerance in intertidal mussels and barnacles. While there does not appear to be a single mechanism for freeze tolerance, it appears to be a readily evolvable trait in which many of the same major biochemical players repeatedly appear.

Join us in welcoming Dr. Katie Marshall

Friday, October 20, 2017

SERF 307 - 3:30 PM

Pre-talk Reception 3:00 PM in Dabney 575

