

Jill Fredericksen-Adams

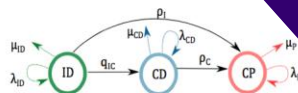
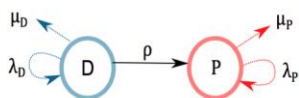
Endowed Biology Seminar

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Integration of traits and diversification: Lessons from small and big phylogenies



Monday, March 29, 2021
12:00 PM PST



VS



Macroevolutionary studies of trait evolution are incomplete without the integration of speciation and extinction rates. The

frequency of a character state on the tips of a phylogenetic tree is not only the result of the trait change *per se* but is also a function of lineage diversification if the character state is linked to speciation and extinction rates. In this talk, I will show three different examples of trait evolution linked to diversification. I will discuss how character state changes, the interaction between traits, and their links to diversification enhance or hinder the speciation and extinction processes. Starting with a tree of nightshades (*Solanaceae*), and finalizing with a large tree with more than 3,000 passerines, I will argue the importance of assumptions for state-dependent diversification models, as well as, the relevance of the integration of ecology and natural history in these models. Finally, I will discuss recent theoretical developments about the estimation of speciation and extinction rates and how these results modify the way we think about state-dependent diversification.

