



BREN SEMINAR

SHIFTING DYNAMICS OF DEMOGRAPHY AND ADAPTATION ACROSS GEOGRAPHIC GRADIENTS



AMY ANGERT

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University of British Columbia

Monday, May 7, 2018 11:00 – 12:00
Bren Hall 1414

Watch live at <https://ucsb.zoom.us/j/781390867>

"Dr. Angert uses experimental, observational, and synthetic approaches to make profound discoveries about what determines the distributions of species, particularly plants. Her work has connected foundational theory from ecology and biogeography to critical questions in conservation and management, making this talk highly relevant to many of us at Bren and UCSB."

— Alexa Fredston-Hermann, Bren School PhD Candidate

ABSTRACT Shifts in species ranges poleward and to higher elevation provide some of the best evidence for widespread biological effects of climate change. However, underneath this globally consistent signal is tremendous variation among species in rates and even directions of recent shifts. A major question is whether species that have failed to keep pace with climate change are among the most vulnerable (because they simply exhibit the greatest lags in demography and dispersal) or the most stable (because they buffer the effects of climate change via greater plasticity or adaptability). I will present results from an ongoing case study on latitudinal variation in demography, life history, and phenology in the scarlet monkeyflower (*Erythranthe cardinalis*). We show that shifts in the pace of life across the species range are insufficient to buffer southern populations from collapse during extreme climatic perturbations. However, while populations were undergoing demographic crashes, they were also rapidly evolving earlier phenology. Rapid evolution suggests the potential for evolutionary rescue to stabilize the southern range edge, allowing these populations to "run in place" and prevent range contraction. These shifting dynamics of demography and adaptation suggest that failure to track climate change could arise from adaptive buffering, not just demographic lags.

BIO Dr. Angert is the Canada Research Chair in Conservation Ecology and an Associate Professor in the Biodiversity Research Centre at the University of British Columbia. She is an evolutionary ecologist by training who brings an evolutionary perspective to the problem of climate-driven range shifts. She completed her PhD at Michigan State University in 2005 and spent two years doing postdoctoral research at the University of Arizona before joining the faculty at Colorado State University. She has been at UBC since 2012, where her lab group studies a variety of problems at the interface of ecology, evolution and biogeography.

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