



ILLINOIS NATURAL  
HISTORY SURVEY  
PRAIRIE RESEARCH INSTITUTE

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ILLINOIS NATURAL HISTORY SURVEY SEMINAR SERIES

# WILL MOUNTAINTOP FROGS RAISE TO THE HEAVENS IN RESPONSE TO CLIMATE CHANGE AND DISEASE?



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Climate change is forcing many montane species to move to higher elevations. Tropical mountains, which are characterized by high levels of biodiversity and endemism, are conducive to comparative and experimental studies of species responses to climate change. In the eastern slopes of the Andes, many plant and animal groups are shifting their elevation ranges, but not frogs, which are suffering widespread fragmentation of their elevational ranges. Many biogeographical filters might prevent frogs from moving upslope. For example, high prevalence of fungal disease at mid elevations is associated with the collapse of amphibian communities in a well-protected national park.

By using museum specimens, we illustrate how the spread of this disease in South America is suggestive of a panzootic occurring from the late 70s to the early 2000s, endangering hundreds of species. Narrow tolerances for high or low temperatures, as well as temperature effects on performance and fitness, could also affect the frog's ability to ascend a mountain. Finally, the scarcity of bodies of standing water on the steep slopes requires specialized reproductive modes, such as a recently discovered example of matrotrophy in mountaintop marsupial frogs.

**3:00 PM** FORBES NATURAL HISTORY BUILDING, ROOM 1005  
1816 S. OAK ST, CHAMPAIGN

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The Illinois Natural History Survey seminar series is organized by the INHS Seminar Committee.

