



Department of Biological Sciences Seminar Series

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Earth and Environmental
Sciences



**Monday,
October 22**

4:10 pm

1220 MRBIII

**Tea Time
3:45
MRBIII Lobby**

Using the past to conserve the future: insights from the fossil record

Animals eat to live, with diet influencing an animal's habitat, foraging or hunting behavior, movement patterns, and even reproduction. The DeSantis DREAM (Dietary Reconstructions and Ecological Assessments of Mammals) laboratory's research program is aimed at clarifying how past climate change has affected mammalian communities and their floral environments—through the lenses of animal diets. We aim to ask questions of relevance to conservation biologist and answer those questions by integrating ecological, macroecological, geochemical, dental microwear, and morphological tools used to study deeper-time records than normally available to neontologists. With a focus on the Late Pleistocene, DeSantis will discuss ways in which mammals have responded to changing climates in both North America and Australia. Results question the assumption that dietary niches are conserved over time and instead demonstrate dramatic dietary responses to changing climates and the extinction of megafauna. In Australia, increased aridification likely stressed some of the largest mammals and contributed to their eventual extinction. Collectively, the fossil record can clarify mammalian responses to climate change and provide cautionary lessons of relevance to modern conservation.