

This fall I would like to attend the 2020 Virtual Annual Meeting held by the Entomological Society of America (ESA 2020) to present information on native bees for the following reasons: Understanding pollinator responses to climate change is increasingly important as we recognize how critical they are to the global community (1). Native bees play vital roles in the pollination of many angiosperms around the world (2). Plants and pollinators are observed to cue off of different abiotic factors like soil moisture and day length. We predict that changing precipitation patterns will play a major role in bee seasonality due, in part, to the nature of arid-land environments. Host plant relationships and ground nesting habits can be strongly tied to precipitation and certain species may be at risk based on the current climate trajectory. Phenological shifts can alter interaction potential and influence the coexistence of competitors in the community. Our study quantifies the phenological niches of bees in order to evaluate these risks. Linear regression models will be used to create metrics by which to statistically analyze the significance of these relationships and a network analysis will be created to help us define coexistence on the community scale. These metrics, once defined, can be projected onto a phylogenetic tree to better understand the role of phenology in evolution. These analyses will become a part of my masters thesis.

This conference will allow me to acquire the much needed exposure for professional growth that has been all too difficult to obtain during these unprecedented times. Additionally, it provides the opportunity to stay current on the scientific trajectory of my field. Sharing our research and results could influence scientists dealing in similar arid-land environments around the world. Presenting at this conference will help me to broaden my horizons in scientific outreach and practice sharing information in a way that is both positive and influential.

Literature Citation

1. Potts, Simon G., Jacobus C. Biesmeijer, Claire Kremen, Peter Neumann, Oliver Schweiger, and William E. Kunin. "Global Pollinator Declines: Trends, Impacts and Drivers." *Trends in Ecology & Evolution* 25, no. 6 (June 1, 2010): 345–53.
2. Ollerton, J., Winfree, R. and Tarrant, S. (2011), How many flowering plants are pollinated by animals?. *Oikos*, 120: 321-326.

