Species who coexist in a particular time and place have a combination of characteristics that make them compatible with the local environment and with each other. This delicate balance between morphology, phylogeny, and environment is an interesting, but incompletely understood evolutionary and ecological phenomenon. Dr. David Polly will present on his recent research about ecometrics, which has provided new insight into how changes in the environment affect trait evolution. Using this presentation as a platform, we will look at examples of the complex relationship between morphology and environment and learn about the theoretical issues related to these topics.