1077-92-2845   **Rosalyn C Rael*** (`rrael@umich.edu`), **Annette Ostling**, **Trevor Bedford** and **Rafael D'Andrea**. *Species abundance distributions in a stochastic niche model.*

Whether and how patterns of species abundance reflect the dynamic processes involved in the formation and maintenance of communities remains an open question in ecology. Recent studies focus on the relative roles of neutral and niche-based mechanisms in shaping these patterns. Neutral dynamics are based on demographic stochasticity and immigration and niche dynamics are generated by trait differences that affect growth rates of competing populations. We find that the differences in species abundance distributions of these two types of communities are more substantial than shown in a recent study. While this previous study used a model with non-interacting niches, we allow for full interaction between all species. These interactions give rise to the niches, suggesting that mechanisms that produce niches can also influence abundance patterns. We compare the patterns resulting from a stochastic Lotka-Volterra competition model which generates either neutral communities (when competition does not depend on traits), or communities with niches (when competition declines with trait distance). Further, we investigate the importance of within and between-niche competition in determining outcomes, and discuss differences in distributions produced at different scales along the trait axis. (Received September 22, 2011)