To the editorial board:

Thank you for considering our manuscript (“Thank you next: demographic consequences of partner diversity and turnover in a multi-species ant plant mutualism”) for publication in The American Naturalist.

In this manuscript, we parameterize a multi-level integral projection model (IPM) from long-term demographic data to understand the demographic effects of partner diversity in a multi-species ant-plant mutualism. We consider the effects of alternative ant partners on individual vital rates (i.e. growth and survival) using Bayesian hierarchical models, which then parameterize our multi-level IPM and allow us to estimate plant fitness as a function of partner identity and diversity. We tested three potential mechanisms for how partner diversity might be beneficial (sampling effect, complementarity, and portfolio effect); no previous study, to our knowledge, has considered all these mechanisms at once. We found that while all in partners in this system function as mutualists to the plant, there are no benefits of partner diversity, which runs counter to trends in the literature suggesting positive effects of a diverse mutualist assemblage.

We believe this study is well suited to Am Nat because it integrates ideas from mutualism theory, populational demography, and biodiversity-ecosystem function to investigate the dynamics and importance of mutualistic partner diversity. This paper includes long-term field data, conceptual novelty, sophisticated modeling, and novel results. It is our hope that this work advances the understanding of diversity in mutualisms and its ecological consequences.

We have opted out of a double-blind review because this paper builds upon our previous work, so our identities could be easily deduced. Our identities are also obvious from our GitHub repo, where we direct reviewers to find all data and code to reproduce our analyses.

Sincerely,

Ali Campbell

Tom Miller