



CHINESE ACADEMY
OF SCIENCES

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Dear Editor of Nature Ecology and Evolution,

We are pleased to submit our manuscript, *Genotypic variation in a foundation tree results in heritable ecological network structure*. The manuscript examines the variation of interaction networks of lichen communities growing on the bark of genotyped cottonwood trees in a long-term common garden experiment. Although studies there have been studies over the last decade that have explored the impact of genetic variation on interaction networks, we are not aware of a study that has quantified the heritability of these effects, which is a key component for evolution by natural selection. Given the difficulty of obtaining ecological interaction network data, let alone replicated in space, this is not surprising, and this work is unique in its combination of a genetics-based experiment with replicated network observations. We report that there is detectable broad-sense heritability of lichen interaction network similarity ($H^2 = 0.41$), which is strongly correlated with one tree trait, bark roughness, but not other bark chemistry traits (pH, tannin concentration and C/N ratio). As this study provides important insights at the interface of ecological and evolutionary dynamics, we believe that it is within the scope of the *Nature Ecology and Evolution*, and hope that you will consider it for publication. We look forward to your response and reviewer comments on this work.

Sincerely,

Dr. Matthew K. Lau, PhD.