

**NORTHERN ARIZONA UNIVERSITY  
DEPARTMENT OF BIOLOGICAL SCIENCES  
FLAGSTAFF, ARIZONA, U.S.A. 86011-5640**

**APPROVAL FORM FOR Ph. D. DISSERTATION PROSPECTUS**

This form is submitted to the Graduate College before, or along with, the student's application for admission to candidacy.

**CANDIDATE'S NAME:** Matthew K. Lau

**Brief Statement of the research problem:**

Understanding the interplay between ecological and evolutionary dynamics in the context of multi-species communities is a major research frontier. This is based on the now sizeable body of research showing community and ecosystem level impacts of genetic variation. Recently, the merger of findings from the fields of community genetics and network ecology has lead to a new, more complete perspective of evolutionary ecology. The primary contribution of network ecology has been the development of a perspective that enables the study of structures beyond isolated species pairs; however, studies of the influence of genetic variation on network structure have only utilized phylogenetic patterns at the species level. The goal of this dissertation is to synthesize the findings and approaches of both community genetics and network ecology to elucidate how intra-specific variation influences the structure of ecological networks. This work will potentially reveal mechanisms for evolution to occur in complex networks of interacting species.

Members of Committee:

\_\_\_\_\_, Program Committee Chair

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\_\_\_\_\_, Department Chair

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