1086-92-1381 **Carrie Diaz Eaton*** (ceaton@unity.edu), ceaton@unity.edu. *The Evolution of Ecological Communities.*

Networks are of current interest in many fields from informatics to economics and ecology. In particular, the building of networks over time and their emergent properties is of interest. Mathematical theory has been developed to explain the formation of various link distributions and connectivity patterns in standard networks. However, current models of ecological networks, in particular, have focused on replicating the observed patterns while neglecting the ongoing evolutionary and ecological dynamics. I discuss a variation on preferential attachment theory incorporates evolutionary and ecological dynamics to explain the formation of some ecological networks, called mutualistic webs. I also discuss why the history of interactions between community members are important in determining the emergent structure of networks. (Received September 24, 2012)