1135-91-462 **Nishant Malik*** (nishant.malik@dartmouth.edu), Department of Mathematics, Dartmouth College, Hanover, NH 03755, **Hsuan-Wei Lee**, Department of Sociology, The University of Nebraska-Lincoln, Lincoln, NE 68588, **Feng Shi**, Odum Institute for Research in Social Science, The University of North Carolina, Chapel Hill, NC 27599, and **Peter J Mucha**, Department of Mathematics, The University of North Carolina, Chapel Hill, NC 27599. *Transitivity Reinforcement in Coevolving Network Models.*

Transitivity is one of the fundamental structural properties of real world networks, yet its role in coevolving network models has remained relatively unexplored. We introduce new modified models for the SIS epidemics and opinion formation on coevolving networks, these new models incorporate innovative rewiring rules which reinforce transitivity. Hence, providing a unique opportunity to study various effects of transitivity on the dynamics of coevolving network models. Using numerical simulations, we identify and examine an extensive set of dynamical features in the new models. Furthermore, we present a derivation of approximate master equations (AME) for the SIS model and show that for some parameter settings, the AME accurately traces the temporal evolution of the system. These methods and results may not only be useful in studying coevolving network models but also in developing ideas for controlling dynamics on networks. (Received September 05, 2017)