1135-05-3164 **Bryan L. Williams*** (bryan.l.williams1@navy.mil), **Lucas A. Overbey** and **Lakeisha D. Williams**. *Variants of Competition Graphs in Information Networks.*

Joel E. Cohen introduced the notion of a competition graph (CG) as a way to analyze relationships between a variety of organisms, predators and prey alike, within an ecological system. In an ecosystem, a CG is a mapping of a directed food web onto an undirected graph such that nodes represent predators/prey and edges represent resource competition between organisms. CG variants include common enemy graphs (CEGs), competition-common enemy graphs (C-CEGs), and m-step competition graphs (m-CGs). Each of these variants maps an initial set of directed relationships onto new, undirected graphs that, depending on the application, can reveal competitors for resources or attention, potential adversaries and allies, behaviorally connected communities, and structural relationships therein. In this work, we investigate those applications by deriving the aforementioned CGs and variants in an effort to explore characteristics of relationships between the spread of information and/or misinformation and nodes of interest in social networks. (Received September 26, 2017)