

1106-VN-2187      **Thomas P. Reith\*** (threith@davidson.edu) and **Laurie J. Heyer** (lahey@davidson.edu).  
*Motif-based clustering of directed networks.* Preliminary report.

The study of networks has become increasingly relevant in a variety of scientific fields, including biology, sociology, and computing. It has been shown that many real networks divide naturally into clusters, or communities, of related vertices. A large amount of research has focused on the detection of such clusters in undirected networks; their detection in directed networks, however, is a less well-studied problem. Here we introduce a novel clustering algorithm for directed graphs based on the concept of network motifs – recurrent, statistically significant subgraphs found at higher frequencies in real networks than ones that are randomly generated. (Received September 16, 2014)