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Nakisa Nassersharif*, Mathematics Department, 215 Carnegie Building, Syracuse University, Syracuse, NY 13244-1150, and **Megan Sinton**, Department of Mathematics, Bucknell University, Lewisburg, PA 17837. *Generating Dynamic Adjustable Weighted Social Networks*.

The DAWN algorithm (Dynamic Adjustable Weighted Network algorithm) randomly generates realistic, dynamic, and weighted artificial social networks. The artificial social networks demonstrate degree distributions that obey a power law, as well as realistic clustering coefficients and average path lengths. The networks are dynamic in that people leave and enter the network, and edges can be created, removed, or re-weighted in each iteration. The edges of the network are asymmetrically weighted in terms of frenergy, a metric that measures the effort put into maintaining a friendship. Due to the dynamic nature of the DAWN algorithm, the network reaches a steady state in the overall network metrics, which include size, clustering coefficient, path length, and degree distribution. However, nodes and edges follow agent based rules, and therefore the network continues to change locally. Locally, friendships form and are strengthened; people join neighborhoods, and some friends leave or become merely acquaintances. These realistic artificial social networks will be invaluable in other mathematical sociology research endeavors and their numeric experiments. (Received August 10, 2011)