1086-AE-984   **Todd Plantenga*** (`tplante@sandia.gov`). *Graph Algorithms in MapReduce to Characterize Billion-Node Power Law Networks.* Preliminary report.

Many applications in the "Big Data" world are cast as large-scale graphs, and problems are addressed with well-known graph algorithms. Graph sizes are so large that distributed storage is necessary, and algorithms must be implemented in distributed computing frameworks such as MapReduce. Most application domains, including social networks and the world-wide web, generate graphs whose vertices follow a power law degree distribution, resulting in computational bottlenecks that affect algorithm design. The talk will focus on the seemingly simple task of counting triangles in a graph. Triangles are fundamental entities in characterizing a social network, occurring when a person's friends are also friends with each other. The talk will delve into recent research on probabilistic sampling methods that scale to distributed implementations. (Received September 17, 2012)