1035-60-282   **Aaron M Yeager*** (`aaronyeager@hotmail.com`), Aaron Yeager, Springfield, MO 65806, and **Thomas A Gassert**. *Characterization of the Vertex-Reinforced Random Walk and Trapping Subgraphs.*

The vertex-reinforced random walk (VRRW) is a random walk on a graph G which is more likely to visit vertices it has visited before. In the long run, the VRRW restricts itself to a finite set of vertices called a trapping subgraph. This behavior of the VRRW differs from that of the usual random walk, which, with probability one, will not be bounded to a finite set except on finite graphs. In this paper we investigate how to find a trapping subgraph and the process by which the VRRW settles down in to one of these subgraphs. We also describe the probability distribution of the VRRW on these trapping subgraphs. (Received August 29, 2007)