1084-05-243 **Michael Ferrara**, **Timothy D. LeSaulnier**, **Casey Moffatt** and **Paul S. Wenger*** (pswsma@rit.edu). *The Asymptotics of the Potential Function.*

A sequence π of non-negative integers is *graphic* if there is a simple graph G whose degree sequence is π; in this case, G is a *realization* of π. Given a graph H, the sequence π is *potentially H-graphic* if there is a realization of π that contains H as a subgraph.

In 1991, Erdős, Jacobson, and Lehel defined the *potential number of* H, denoted $\sigma(H,n)$, to be the minimum integer such that every n-term graphic sequence with sum $\sigma(H,n)$ is potentially H-graphic. Since the sum of the terms of π is twice the number of edges in a realization of π, determining the potential number can be thought of as a potential version of the classical Turán problem. The potential number has been determined for various classes of graphs, including cliques, cycles, and complete bipartite graphs, but relatively little has been known about the potential numbers of arbitrary graphs. Here we determine the potential number asymptotically for all H, providing an Erdős-Stone-Simonovits-type theorem for the Erdős-Jacobson-Lehel problem. (Received September 03, 2012)