Practical Graph Drawing: A Tutorial
## Emden R. Gansner, AT&T Labs Research

June 4, 12:30 – 1:30 and June 5, 12:30 – 3:00
DIMACS Seminar Room, CoRE Building 431
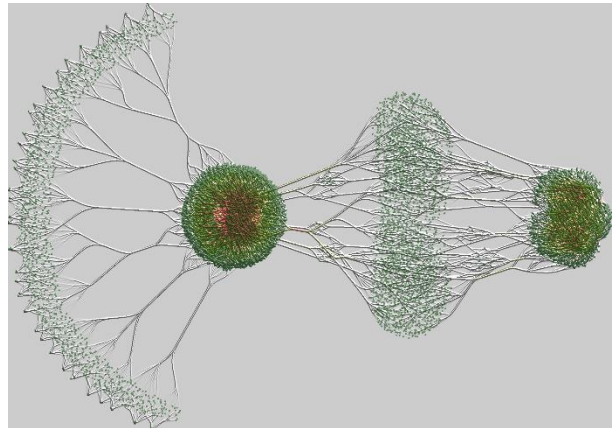**Hosted by James Abello**

Abstract

Some forms of graph drawing date back to the Middle Ages, but it has only been in the last 30 years, with the development of computers and the ensuing explosion in the amount of discrete data, that work in graph drawing has blossomed. Much of this work has focused on basic layout

algorithms as node-link diagrams, and related theoretical results. But graph drawing is inherently a tool: it provides a visual way to explore relational, multivariate data. Practical graph drawing requires one to consider a host of secondary algorithms to assist in the effective understanding of the data. These may deal with occlusion (If nodes are not points, how can one be sure data are not hidden?), more complex data models (loops, multiedges, ports, edge lengths), simplification (assist the user in finding main features and exploring the graph), and massive graphs.
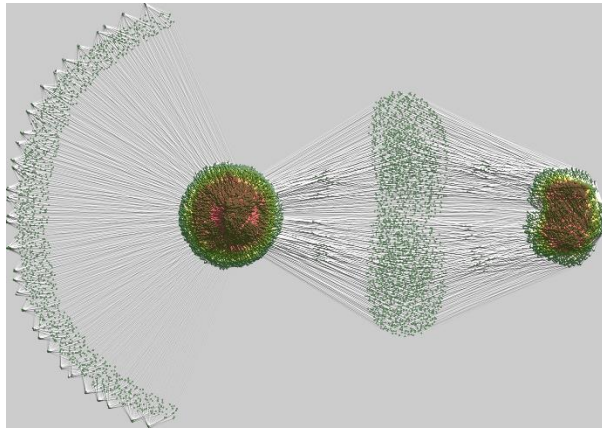
This tutorial will provide an introduction to graph drawing and its main trends and results. This will lead us into a detailed consideration of some of the corollary problems that need to be solved for a drawing be used effectively with real data. We will look at how various research has addressed these problems, and which problems beg for better solutions.

Speaker

Emden R. Gansner received a B.S. in mathematics from Caltech in 1973 and a Ph.D. in mathematics from MIT in 1978. After teaching at the University of Illinois, he joined Bell Laboratories in 1980 and was a Distinguished Member of Technical Staff in the Software Engineering Research Department. At present, he is a Lead Member of Technical Staff in the Information Visualization Research Department. His research interests include graphs

(drawing, theory, and algorithms), information visualization, graphical user interfaces, programming tools and environments, programming languages, and combinatorics.