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Sue Whitesides* (sue@uvic.ca), Department of Computer Science, PO Box 3055 STN CSC, Victoria, BC V8W 3P6, Canada. *Motion Planning and Graph Layout: at the Crossroads of Geometry, Discrete Mathematics, and Algorithm Design*. Preliminary report.

To visualize a graph, or to realize the connectivities it represents as a circuit of wires or a network of pipes or highways, one must assign its vertices and edges to concrete locations; that is, one must "draw" the graph. Alternatively, abstract graphs can be realized by a variety of geometric relationships such as visibility, contact, or proximity relations.

When a graph represents a linkage of rods hinged together at their endpoints, its movement properties can exhibit a range of intriguing behaviors and challenging questions, even for a graph as simple as a chain of links.

In this talk, we take a look at problems at the intersection of geometry, discrete mathematics, and algorithm design, focusing on layout and path planning problems. (Received September 21, 2009)