1155-05-452 **Xiaofeng Gu***, University of West Georgia, 1601 Maple St., Carrollton, GA 30118. *Graph rigidity in the Euclidean plane.*

A bar-and-joint framework in Euclidean plane is a pair (G, p), where G is a graph and p is a map from $V(G)$ to the Euclidean plane. Given a framework (G, p), a natural question is to ask, is it rigid? This question has both combinatorial and geometric aspects. A combinatorial characterization of rigidity in the Euclidean plane has been obtained by Laman in 1970, which results the following definition of rigid graphs. A graph G is sparse if $|E(H)| \leq 2|V(H)| - 3$ for every subgraph H of G with $|V(H)| \geq 2$; if in addition $|E(G)| = 2|V(G)| - 3$, then G is minimally rigid. A graph is rigid if it contains a spanning minimally rigid subgraph. It is interesting to find sufficient conditions for graph rigidity. Some old and new results on related topics will be presented in this talk. Joint work with Wei Meng, Martin Rolek, Yue Wang, and Gexin Yu. (Received January 20, 2020)