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VERTEX-MINIMAL PLANAR GRAPHS WITH PRESCRIBED AUTOMORPHISM  
GROUPS

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**Abstract of Report Talk:** In 1939, Frucht proved that for any finite group  $G$ , there exists a graph such that the automorphism group of is isomorphic to  $G$ . Naturally, this result gave rise to numerous extremal problems in graph theory. For instance, vertex-minimal graphs with a prescribed automorphism group are the subject of prior research by numerous authors. In this talk, we will discuss our proof of a conjecture made in 1980 by Marusic on the order of vertex-minimal planar graphs with cyclic symmetry of even order. Our proof completes a theorem giving the order of all vertex-minimal planar graphs with cyclic automorphism groups. We will also discuss further our proof regarding the order of vertex-minimal planar graphs with dihedral symmetry.

[Joint work with Sarah E. Lubow]

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