1135-52-587 Alan Arroyo and Dan McQuillan* (dmcquill@norwich.edu), Norwich University, Department of Mathematics, 158 Harmon Drive, Northfield, VT 05663-1035, and R. Bruce Richter and Gelasio Salazar. Convex Drawings of the Complete Graph: Topology meets Geometry. Preliminary report.

We introduce a notion of convex drawings of complete graphs, naturally leading to a hierarchy of drawings, from restrictive to general: rectilinear, face-convex, hereditarily-convex, convex and general topological. We present general results that shed light on Aichholzer's computer proof (personal communication) showing that all optimal drawings of K_n with $n \leq 12$ are also convex drawings. We have distinguishing examples, characterizing theorems and many new and exciting open questions. (Received September 09, 2017)