962-05-977 **Joshua D Laison*** (jlaison@dartmouth.edu), Department of Mathematics, Dartmouth College, Hanover, NH 03755. *Geometric Representations of Ordered Sets.* Preliminary report.

A *geometric representation* of an ordered set P is a representation of P by an ordered set S of geometric objects. For example, suppose S is a set of intervals on the real line. We can order the set S by defining one interval x to be less than another interval y whenever every point in x is less than every point in y. We call an ordered set P an *interval order* if there exists a set of intervals of this form such that $P \cong S$. In general, by choosing a type of geometric object and a method of ordering, we define a class of ordered sets representable with these objects. Thus the definition of interval orders can be generalized to higher dimensions and more complex geometric objects. In a paper in 1992, Habib, Kelly, and Möhring generalized the definition of interval orders to n-dimensional convex bodies. I have studied some classes of ordered sets obtained by restricting their definition to various polytopes. For example, *trapezoid orders* are represented by trapezoids contained between two parallel lines in the plane, and *tetrahedron orders* are represented by tetrahedra contained within three parallel lines in 3-space. I will discuss containment relations between some of these classes of ordered sets. (Received September 29, 2000)