1145-01-142 **Nicholas Scoville*** (nscoville@ursinus.edu), 601 E Main Street, Math and CS, Collegeville, PA 19465. *Build your own topology: A history of some of the axioms of a topology with applications to the classroom.* Preliminary report.

Day 1 of a course in point-set topology usually begins with the open set axioms of a topology. During the course, one might show that the open set axioms are equivalent to the closed set axioms, but that tends to be the only equivalent system investigated. Yet there are other, less obvious equivalent sets of axioms for a topology. In this talk, we will look at two other sets of axioms for a topology, due to Hausdorff and Kuratowski. Hausdorff gives axioms in terms of neighborhoods while Kuratowski uses the closure operation. In both cases, different terms act as the "undefined terms" of the axiomatic system. This leads us to the idea of having students come up with their own set of undefined terms and axioms to create their own "topology," much like students in a college course in geometry can create their own geometry through undefined terms and axioms. (Received August 08, 2018)