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Jeff Connor* (connor@math.ohiou.edu), Department of Mathematics, Ohio University, Athens, OH 45701. *Using experience as a prelude to proof*. Preliminary report.

The vast majority of undergraduate mathematics major never have the experience of creating mathematics. This talk describes a 'College Geometry' course where students develop some of their own axioms and then use these axioms to prove some standard results in geometry. Their proofs, based on these axioms, can be developed and discussed in the context of their experience. The students explore the validity of their axioms in a variety of geometric models by using manipulatives and software programs. The students work in cooperative groups and there is a strong emphasis on writing. (Received September 15, 2000)