1086-97-2193 Emily S Cilli-Turner* (ecilli2@uic.edu), 851 S. Morgan, M/C 249, Chicago, IL 60608. Proof Construction and Collaborative Revision in Undergraduate Mathematics. Preliminary report.

Although the ability to construct proofs is an integral part of being a mathematician, it is well documented that many undergraduate students struggle when faced with this task. Additionally, there is evidence that students do not understand the myriad roles that proof plays in mathematics. Thus, teaching methods need to be developed that highlight different roles of proof and are effective in aiding students with proof construction skills. In this project, the effects on student thinking about the role of proof in mathematics, student ability to judge the validity of a proof, and student proof construction of teaching proof through the process of collaborative revision will be examined. Collaborative revision refers to the process in which students present a proof they have constructed to their classmates and the other students are encouraged to make comments and point out inconsistencies in order to ensure that the proof portfolios will be collected. The research questions will be addressed by a mixed method analysis of data collected from treatment and comparison groups. (Received September 25, 2012)