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**Greg Mayer\*** ([greg.mayer@gatech.edu](mailto:greg.mayer@gatech.edu)), Skiles Building, Room 116, School of Mathematics, Georgia Institute of Technology, Atlanta, GA 30332. *Developing Community and Collaboration through Active Learning in Synchronous Online Linear Algebra and Multivariable Calculus Courses.*

This presentation will offer a brief overview of three recent studies, conducted between 2012 to 2015, that characterized the learning environment afforded by the use of web conferencing software in synchronous online recitation sessions for linear algebra and multivariable calculus courses. Participants in these studies were geographically isolated and advanced high school students enrolled in Georgia Tech's Distance Calculus Program. One of the primary goals of incorporating web conferencing software into these courses was to foster online community among students through active learning. Research findings from these studies were based on results from a qualitative content analysis of student discussions held during recitations, interview and focus group data, validated survey instrument data, and final grade data. Study findings characterize the development of online community among students, and how they engaged in these sessions using different technologies and different learning activities, including collaborative group work. Findings include evidence that students were able to develop online community, and that, relative to whole group discussions, small group work activities resulted in an increase in student engagement in academic and task-oriented discussion. (Received December 17, 2015)