

1145-O5-1251      **Aaron Trocki\*** (atrocki@elon.edu), 2320 Campus Box, Elon, NC 27244, and **Ryan Bernardi** (rbernardi@elon.edu), 2320 Campus Box, Elon, NC 27244. *Assessing Student Engagement and Responsibility through Inquiry-Based Learning.*

Traditional instruction in college level calculus is instructor driven and predominantly lecture-based with students being passive recipients of knowledge. Inquiry-Based Learning (IBL) has shown promise to change instructor and student roles in the classroom to more active collaborators through exploring concepts and honoring student questions and contributions (e.g. Greene & von Renesse, 2017). This presentation delineates a case study (Creswell, 2013) of one Applied Calculus course in which IBL strategies were implemented. Investigated strategies include open-ended warm-up questions to begin class sessions, think-pair-shares to structure small group discussions, and concept checks to formatively assess class progress. These strategies emphasized developing mathematical knowledge through discourse, utilizing student questions to unpack concepts, and assessing student progress throughout the semester. Professor reflections, student responses to questionnaires, and recorded professor and student written questions were analyzed to assess broad effects of instructional strategies and in particular student engagement and responsibility for learning. Professors interested in employing IBL strategies into their mathematics instruction will particularly benefit from this presentation. (Received September 20, 2018)