

1135-J5-2071

**William L Hall\*** ([w.hall@wsu.edu](mailto:w.hall@wsu.edu)). *The Role of Context in How Students Majoring in the Biological and Life Sciences Solve Calculus Tasks Involving the Definite Integral.*

Calculus serves students from many fields of study. Investigations into how students from these fields reason about calculus concepts are vital, yet lacking. The biological and life sciences make up 30% of traditional Calculus I students and yet we know very little about how these students utilize context as they reason about calculus ideas like the definite integral. In this study, task-based interviews were conducted with 12 undergraduate students majoring in the biological and life sciences. In this session, I share results from two tasks in which students were asked to reason about the accumulation of a quantity (distance traveled and number of plants in a species) given a rate of change graph. Results indicate that context played a role in the students' mathematical reasoning. Students were more likely to interpret the graph of the rate of change in the plant task as if it represented accumulated quantity than they were for the velocity graph in the distance traveled task. Several students indicated that the context directly influenced how they approached each task and how difficult they felt each task was. These results imply that our approaches to calculus may need to include diverse applications, specifically in courses intended for the biological and life sciences. (Received September 25, 2017)