

1154-N1-2317      **Sarah Hews\*** ([shews@amherst.edu](mailto:shews@amherst.edu)) and **Geremias Polanco** ([gpolanco@amherst.edu](mailto:gpolanco@amherst.edu)).  
*Calculus in Context: An Innovative Approach to Calculus.*

The Calculus in Context (CiC) sequence at Hampshire College uses differential equations as a fundamental object of study. In these inquiry based courses, students learn how to engage in mathematics, take risks, and work in groups. By focusing on concepts, geometry, graphing, and numerical solutions before techniques, algebra, and closed form solutions, students who have already taken a class or classes in calculus are challenged immediately, and students who enroll in the courses with no calculus experience and unpleasant experiences in algebra courses are able to engage with mathematics in a fresh way. Since students are discovering the concepts of calculus through group explorations, advanced students are able to engage deeper with the material and novice students learn how to fill gaps in their mathematical background. These explorations are motivated by real life applications that serve as a natural context to learning calculus. For the last few weeks of the semester, the students work in groups on projects that could be novel research, applied problems, or historical explorations. This talk will describe the CiC courses, how they are broadly accessible and challenging, and present techniques and topics that are transferable to calculus courses at other institutions. (Received September 17, 2019)