

1096-M5-1584 **Robert Talbert*** (talbertr@gvsu.edu), Department of Mathematics, Grand Valley State University, 1 Campus Drive, Allendale, MI 49401. *Technology as a tool for self-regulated learning in an inverted calculus class.* Preliminary report.

For many, Calculus 1 is the first mathematics course taken in a college environment where personal responsibility, independent thinking, and higher-order reasoning play a significant role. Calculus 1 is also the first course in the Mathematics major and as such leaves a lasting impression on students regarding the nature of the discipline of Mathematics. If we want students to be successful not only in mastering calculus content but also in preparing for learning later in their majors and professions, Calculus 1 must engage students in *doing mathematics in the style of a professional*.

At Grand Valley State University, an effort is underway to re-invent the Calculus 1 course to place a deliberate emphasis on independence, self-regulated learning, and higher-order thinking by converting Calculus 1 to an inverted or “flipped” class design. In this talk, we will examine the role technology plays in this inverted calculus course and how its use by students is changing the ways they learn and do mathematics. In particular, we will focus on the use of screencasting to replace in-class lectures; classroom response systems to promote a conceptual approach to calculus topics; and dynamic geometry software and spreadsheets for modeling and coding. (Received September 16, 2013)