1056-D1-881 **Christine L. Ebert** (cebert@math.udel.edu), 312 Ewing Hall, Department of Mathematical Sciences, University of Delaware, Newark, DE 19716, **Donna A. Mark*** (mark@math.udel.edu), 114 Ewing Hall, Department of Mathematical Sciences, University of Delaware, Newark, DE 19716, and **Rachael M. Todd** (todd@math.udel.edu), 114 Ewing Hall, Department of Mathematical Sciences, University of Delaware, Newark, DE 19716. *Beginning Behind: The Effect of Background Knowledge and Mathematical Self Image on University Precalculus Students' Success.*

The issue of successfully preparing future STEM majors is important for both the intellectual and financial well-being of the United States. Most students who declare one of these majors were "good in math" in high school. However, to the majority, "doing mathematics" means solving problems that involve a specific procedure or strategy. While they engaged in "problem solving," few of these problems could be described as mathematical explorations or required students to reflect on their learning. For this reason, many students end up re-taking mathematics courses at the university. This presentation will describe the emerging mathematical understanding of students in a university precalculus course intended for STEM majors. Based on the results of a pretest and survey administered at the beginning of the course and subsequent evaluations during the semester, we will describe how students' background knowledge (conceptual and procedural) and view of themselves as a student of mathematics contributed to their success in the course. Thus, given the pervasiveness of this issue, special care should be provided to help students bridge-the-gap between high school and university-level mathematics. This study will provide both research results and practical solutions for this alignment. (Received September 18, 2009)