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**R. Cavender Campbell\*** ([robert.campbell@mavs.uta.edu](mailto:robert.campbell@mavs.uta.edu)), 527 Button Dr., Mesquite, TX 75150. *Mathematical Problem Solving Practices: A comparison of a student in College Algebra to a student in Calculus.*

Intense focus on increasing science, technology, engineering, and mathematics (STEM) student retention in college requires more attention to mathematical problem solving (MPS) in critical gateway courses. To investigate the MPS practices of students in College Algebra and Calculus, we interviewed students in these courses as part of the MPS Item Development Project. This case study, of one student from each course, contrasts the MPS used by students at different stages of a STEM pathway. We discuss various aspects of their use of MPS and highlight a strong contrast in the use of representing and connecting strategies between the students interviewed. In addition, we explore the distinct use of algebraic notation and interpret the interplay between fluent use of algebraic notation and the observed MPS practices. In their respective courses, each student scored well and conveyed content understanding consistent with their current course level. We also offer considerations for teaching practice linked to observed MPS practices of these two successful students at different stages in their pathway to a STEM major. (Received September 20, 2016)