

1163-A5-1054

Theresa A. Jorgensen* (jorgensen@uta.edu), **Elizabeth M. Griffith**, **W. Ashley Griffith**, **Brittan Wogsland**, **Lindsey Hernandez** and **J. Lowe**. *Integrating Geoscience Contexts into Precalculus*.

Motivated by the goals of 1) improving the success of intended STEM majors in first year mathematics courses and 2) introducing first year students to the geosciences to increase the number and diversity of students who choose a geoscience major, our team of mathematicians and geoscientists are modifying the curriculum of Precalculus by integrating current geoscience research. We successfully piloted this collaboration in College Algebra and are extending it to Precalculus. For each Precal unit our geoscientists chose a corresponding geoscience theme and a scientist who does research related to that theme. We have developed videos featuring each geoscientist describing how the mathematical skill the students are learning is essential for her research. A portion of student homework exercises and problem-solving labs are cast in the context of that geoscience research. We present pre- and post-course survey results that assess student interest and self-efficacy in science and math as well as career perceptions of geoscience and related sciences. We highlight curricular examples from implementation of the geoscience themes, in particular volcanology aligned with a unit on functions, and planetary geoscience aligned with a unit on unit circles, trig functions, and right triangles. (Received September 14, 2020)