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Brady A. Tyburski* (tyburski@math.colostate.edu), **Andrew Darling, Cameron Byerley, Steven Boyce** and **Jeffrey Grabhorn**. *The Role of Improper Fraction Schemes in STEM Students' Conception of Measurement*.

Measurement plays a critical role in STEM fields. However, there is evidence that mathematics, chemistry, and medical students at the college level struggle to convert between units and decide if their answers are reasonable. This is despite the fact that these measurement concepts are elementary school standards. Steffe proposed that students must be able to coordinate three levels of units in order to conceptualize the relative sizes of units of measurement. He also stated that many students are not developmentally ready to learn measurement meaningfully at the age it is taught in the United States. This could have a long-term impact on those pursuing STEM majors in college. To model college students' understanding of measurement, we conducted task-based interviews with students taking a calculus I class for biological scientists. In these interviews, we diagnosed students' unit coordination and fraction schemes using validated items from prior research and then presented students with tasks involving unit conversion and ruler drawing. In this talk, we report on the factors that constrain or afford students from successfully completing such tasks. Special attention will be given to the role that students' improper fraction schemes play in accomplishing these tasks. (Received September 25, 2018)