1125-N1-1359 **Allison Dorko*** (`dorkoa@oregonstate.edu`), 676 Waterville Road, Skowhegan, ME 04976. *Is it a Function? Generalising from the Single- to Multivariable Setting.*

This talk reports on a longitudinal study regarding how five calculus students generalised what it means to be a function from the single- to multivariable setting. Students answered tabular and graphical classification tasks three times over the span of their differential, integral, and multivariable calculus courses. One student generalised functions as that which represent patterns, which inhibited him from generalising the univalence criterion. The other four students correctly generalised univalence, but had to overcome stumbling blocks such as trying to use the vertical line test in R3 as parallel to the y-axis (as it is in R2). I will talk about what students attended to as they generalised, which includes patterns, the form of equations, the position of coordinate axes, particular coordinate points, and the idea of function as input-output. These results have implications for how we teach students about single-variable functions and what ways of thinking allow them to later build on that knowledge, as well as how we teach multivariable functions. (Received September 16, 2016)