

1096-L1-1775 **Megan Wawro*** (mwawro@vt.edu) and **David Plaxco** (dplaxco@vt.edu). *Analyzing student understanding in linear algebra through mathematical activity.*

The purpose of this study is to characterize students' conceptions of span and linear (in)dependence. The data under consideration are portions of individual interviews with linear algebra students, and grounded analysis revealed a wide range of student conceptions of span and linear (in)dependence. The authors organized these conceptions into four categories: travel, geometric, vector algebraic, and matrix algebraic. To further illuminate participants' conceptions of span and linear (in)dependence, the authors developed a framework to classify the participants' engagement into five types of mathematical activity: defining, proving, relating, example generating, and problem solving. This framework proves useful in providing finer-grained analyses of students' conceptions and the potential value and/or limitations of such conceptions in certain contexts. (Received September 16, 2013)