

1135-C1-2489 **Sepideh Stewart*** (sepidehstewart@ou.edu), 601 Elm Ave, Norman, OK 73019. *Moving between the Three Worlds of Mathematical Thinking in Linear Algebra*. Preliminary report.

Linear algebra consists of many languages and representations. Instructors often move between these languages and modes fluently and expect students to follow along. In reality, many students do not have the cognitive framework to perform the move that is available to the experts. In this talk, employing Tall's three-world model, I will present a set of linear algebra tasks that are designed to encourage students to move between the embodied, symbolic and formal worlds of mathematical thinking. We anticipate that creating opportunities to move between the worlds of mathematical thinking will encourage students to think in multiple modes and in the long term broaden their mathematical knowledge. Some preliminary data illustrating students' abilities in moving between the worlds will be presented. (Received September 26, 2017)