

1154-J1-1003 **James H Fife*** (jfife@ets.org), 660 Rosedale Road, Princeton, NJ 08541. *A Learning Progression for Geometric Transformations: From Research to Validation.*

A learning progression is “a sequence of successively more complex ways of thinking about an idea that might reasonably follow one another in a student’s learning” (Smith, Wiser, Anderson, Krajcik, & Coppola, 2004). In this talk, I will present a learning progression for geometric transformations that is based on research that demonstrates the importance of viewing transformations as functions of the plane (Fife, James, & Bauer, 2019). The five levels of the progression reflect a student’s evolving understanding of transformations as functions and their evolving understanding of the domain of these transformations as functions. I will also demonstrate how an analysis of cognitive interview data, conducted as part of a larger NSF-supported project, was used to validate (or not) the learning progression. (Received September 12, 2019)