1163-I5-1156 **Rachel Rupnow*** (rrupnow@niu.edu) and **Eric Johnson** (ejohnson13@niu.edu). *Algebraists' Metaphors for Sameness: Philosophies, Variety, and Commonality.*

In order to understand how mathematicians relate mathematical concepts to sameness, surveys were sent to algebraists throughout the United States. The relevant portion of the data set for this talk focuses on open-ended responses to three questions on the meaning of sameness in math, the meaning of sameness in abstract algebra, and similarities or differences between sameness in algebra and other branches of math. Responses from 197 participants were analyzed using conceptual metaphors (Lakoff, G., & Nunez, R. (1997). The metaphorical structure of mathematics: Sketching out cognitive foundations for a mind-based mathematics. In Lyn D. English (Ed.), *Mathematical reasoning: Analogies, metaphors, and images* (pp. 21-89). Mahwah, NJ: Erlbaum.). Conceptual metaphors connect a target domain, in this case sameness, to a source domain that provides another way of reasoning (e.g., Sameness is a concept shown by structure-preservation.). Algebraists' metaphors grouped into clusters including philosophical stances toward sameness, discipline-based instantiations of sameness, and informal language for sameness. Implications for discussing sameness-based conceptual connections across courses are discussed in light of the connections made by some of the mathematicians. (Received September 14, 2020)