1077-M1-1586 **Hortensia Soto-Johnson*** (hortensia.soto@unco.edu), Ross Hall 2240C, School of Mathematical Sciences, Greeley, CO 80639, and **Michael Oehrtman**, **Kristin Noblet**, **Lee Roberson** and **Sarah Rozner**. *Experts' Reification of Complex Variables Concepts: The Role of Metaphor.*

Using a conceptual framework of enactivism, we explored how experts (N=6) blended dynamic interpretations of diagrams, gestures, perceptuo-motor activity with metaphors to reason and communicate about complex variables concepts. Using Lakoff & Johnson's (1980) definition of conceptual metaphor, we found that experts who tended to reason at an operational stage failed to bring mathematical objects into being. On the other hand, participants who displayed evidence of reification of a complex variables concept imparted their sense of understanding through dynamic representations blended with metaphors. These metaphors were often invented or reinterpreted, based on personal experiences, and created to convey nuances of the experts' understanding to students. Our research suggests that investigating experts' use of dynamic imagery and metaphor may allow researchers to gain insight into the development of systematically structured conceptual understanding. This insight may support practitioners' efforts to create opportunities for students to reinterpret experts' metaphors into personal meaningful metaphors that both capture important mathematical concepts accurately and align within their own understandings, experiences, and culture. (Received September 20, 2011)