

1114-97-50

Milos Savic* (savic@ou.edu), **Gulden Karakok**, **Gail Tang**, **Houssein El Turkey** and
Emilie Naccarato. *Understanding the Proving Process with the Lens of Mathematical Creativity*.

Proof is central to the development of mathematics. More importantly, the process of proving reveals many aspects of a human endeavor such as making connections, creation, taking risks, and evaluation. Undergraduate students have had difficulty with developing proofs and persevering through proving processes (e.g., Moore, 1994; Selden and Selden, 1995). There are many suggestions to guide students through their difficulties, however such guidance should also encourage and value each student's creative potentials. In this talk, we share the studies we have conducted to alleviate students' difficulties, but also nurture students' creativity, during the proving process. Through interviews with mathematicians and students, analyzing students' proving processes via Livescribe pens, and focusing on past K-12 mathematical creativity literature, our research group have created a rubric, the Creativity-in-Progress Rubric (CPR) on Proving. This rubric, coupled with well-chosen (or crafted) tasks, and an environment that allows for the sharing of the proving process, may help undergraduate students improve their proving process. In our talk, we will share some experiences of using the rubric in teaching and research. (Received July 31, 2015)