1106-G5-2506   **Girija S Nair-Hart*** (`nairhaga@uc.edu`), 3585, Applewood drive, Amelia, OH 45102. *Reasons behind rules – aligning the 'unreachable' asymptotes.* Preliminary report.

During my research on student conceptions of different calculus and pre-calculus concepts, calculus students accidentally discovered that asymptotes are geometric constructs that both functions and non-functions can hold. These students came from diverse academic standings in mathematics while they held the commonality of choosing their careers in the engineering track. The students were marveled by their own discovery, they took pride that they explored the concepts by actively listening to their peers, pointing out the discrepancies in each others views, looking at different examples and negotiating meanings that aligned better with the mathematical truth accepted by the mathematics community. In the end, they also cleared their long-standing confusion on what fits and does not fit with characteristics of asymptotes. What I learned from this experience as an instructor was that well-crafted collaborative assignments could help build confidence and enthusiasm in mathematics students. During this presentation I will discuss the details of this episode to demonstrate what collective, discovery learning efforts could accomplish. (Received September 16, 2014)