

1154-VC-101      **Brianna Gambacini\*** ([brianna.gambacini@uconn.edu](mailto:brianna.gambacini@uconn.edu)) and **Sam Macdonald**. *Open and Closed Convexity in 3-Sparse Neural Codes*. Preliminary report.

Neural codes are mathematical models of neural activity. In the early 1970s, neuroscientists discovered neurons called place cells, which fire when animals are in specific (and usually convex) regions in space. Through monitoring these place cells and recording data on when they fire, we can construct neural codes, which tell us what neurons fire together. Of particular interest to the mathematical community is identifying which codes can be represented by open or closed convex sets. Recently, authors have posed several conjectures regarding conditions that distinguish open convex codes from closed convex codes. In this talk, we discuss the difference between open and closed convexity, and examine counterexamples for two conjectures regarding closed convex neural codes. (Received August 06, 2019)