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Nida K. Obatake* (nobatake@tamu.edu), **Elizabeth Gross** (nobatake@tamu.edu) and **Nora E. Youngs** (nobatake@tamu.edu). *Rat GPS: Drawing Place Field Diagrams of Neural Codes Using Toric Ideals.*

A rat has special neurons that encode its geographic location. These neurons are called place cells and each place cell points to a region in the space, called a place field. Neural codes are collections of the firing patterns of place cells. In this talk, we investigate how to algorithmically draw a place field diagram of a neural code, building on existing work investigating neural codes, ideas developed in the field of information visualization, and the toric ideal of a neural code. (Received August 18, 2016)