1131-92-62 **Luis David Garcia Puente*** (lgarcia@shsu.edu), Department of Mathematics and Statistics, Sam Houston State University, Huntsville, TX 77341-2206, and **Rebecca Garcia**, **Ryan Kruse**, **Jessica Liu**, **Dane Miyata**, **Ethan Petersen**, **Kaitlyn Phillipson** and **Anne Shiu**. *Gröbner Bases of Neural Ideals.*

The neural ideal was introduced recently as an algebraic object that can be used to better understand the combinatorial structure of neural codes. Every neural ideal has a particular generating set, called the canonical form, that directly encodes a minimal description of the receptive field structure intrinsic to the neural code. On the other hand, for a given monomial order, any polynomial ideal is also generated by its unique (reduced) Gröbner basis with respect to that monomial order. How are these two types of generating sets - canonical forms and Gröbner bases - related? In this talk, we will demonstrate that when the canonical form of the neural ideal is a Gröbner basis, it is the universal Gröbner basis. A natural question to pursue, then, is under what conditions will the canonical form be a Gröbner basis? We will give some partial answers to this question. (Received June 29, 2017)