In this microassembly, we will look at a simple and powerful model proposed by Eugene Izhikevich in 2003 (http://www.izhikevich.org/publications/spikes.pdf). This mathematical model is the most recent of a long tradition of models used to study individual neurons that display spiking/bursting behavior. Examples of these models include among others Hodgkin-Huxley, and FitzHugh-Nagumo. The Izhikevic model is particularly interesting because it is a compact model that, via a suitable change of parameters, can simulate a large array of neurons' behavior.