

## The General Structure of a Neuron

### *Materials*

Styrofoam ball  
Toilet paper rolls  
Plastic containers with the bottom cut off  
Yarn  
Wire  
Styrofoam cones

### *General description of the Model*

The Styrofoam ball will act as the soma (cell body) of the neuron. Attached to the soma are the dendrites, or wires, bend in branch like formation. Toilet paper rolls act as the axon of the neuron. Empty rolls signify unmyelinated axons. Interspersed between the toilet paper rolls with toilet paper are the plastic containers with the bottoms cut off. The plastic containers serve as the nodes of Ranvier. Running along the inside of the axon is a length of yarn. The students will be instructed to cause the yarn to oscillate inside the axon. The myelinated axon will appear to have action potentials only at the nodes of Ranvier, as in an actual myelinated neuron. The unmyelinated neuron will only appear to produce an action potential at the axon hillock, or Styrofoam cone at the end of the axon.