# Overview

In this assignment, we will be using NEURON-Python to simulate the activity of a network of neurons across the subthalamic nucleus (STN) and the Globus Pallidus pars externa (GPe). In this project, we simulated 3 STN and 3 GPe neurons. The STN neurons provide excitatory input to GPe and GPe provides inhibitory feedback to the STN. Each of these connections have a weight which signifies how active the postsynaptic cell will be after receiving the stimulation.

**Figure 1.** Connectivity between STN and GPe. The dendritic synaptic strenght for the incoming connection is signified by the h.NetCon.weight[0] variable in neuron. We will signify the value for STN neurons as stn\_con\_wt and for GPe as gpe\_con\_wt.

In this report, we varied the connection weights. We tried a grid of 10, 15, and 20 for each of the GPe and STN synaptic strengths.

**Observation 1:** If we increases the GPe connection strength while keeping the