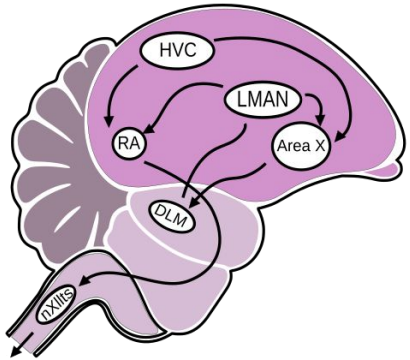
Project: Modeling

The aim of the project is to implement and investigate **a simplified model of HVC in songbirds**.

Background: In several sensory and motor related parts of the brain, neurons present an activity that depends on particular features of the sensory stimuli or of the motor output. For example, neurons in the premotor song control nucleus HVC of singing birds fire preferentially at ***specific times*** during the song production.



Implementation: In this project, we will build **a computational model of the HVC** which consists of interconnected neurons or populations of neurons. Each neuron in the network fires at different time instants during song production. We aim to build step by step a chain of populations of neurons featuring a propagating neuronal activity.

We will see how to model neurons and synapses with mathematical equations, and how synaptic connections should be tuned to ensure proper propagation.