Poster Presentation
Characterizing an Abnormal Action Potential Pattern in Ion-Channel-Mutant Drosophila
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Repetitive activities such as flight are organized by neural networks called central pattern generators and the patterns of action potentials they produce is thought to be influenced by membrane ion channels that alter electrical signals. It’s known that in Drosophila melanogaster with mutations of potassium channels, the motor neurons for flight exhibit an abnormal pattern of action potentials (distinct from the flight pattern) when the animal is not flying. This lets us examine how ion channels shape and alter the output of a central pattern generator. This can let us examine how ion channels shape and alter the output of a central pattern generator. Using flies from a strain with two potassium channel mutations, eag\textsuperscript{1} and Sh\textsuperscript{120}, I am recording action potentials from the flight muscles, for the fact that their action potentials faithfully follow the action potentials of the motor neurons without the difficulty of recording directly from the neurons. The patterns created during these recordings will be later analyzed. This will be used to determine if the action potentials being sent to the muscles are being generated by one central pattern generator (CPG) or multiple. Following the retrievals the flies will be immersed in methyl blue to stain the electrode impalement sites and dissected to confirm the identities of the muscles recorded from.