

Project Name: Mechanisms of neuropeptide inactivation

Project Description: The functions of the brain emerge from communication between neurons. The language of neuronal communication is mediated by chemicals that are released from one neuron and sensed by another. These chemical signals consist of both “fast acting” neurotransmitters, as well as more than 200 neuromodulators that act on longer timescales. Neuropeptides are the largest and most diverse class of neuromodulators, and they control vital processes like energy homeostasis, as well as motivational and emotional states such as sleep, arousal, pain, stress, and mood. Yet we still lack a clear understanding of how neuropeptides generate the diverse behavioral outputs of the brain. In particular, the molecular mechanisms by which neuropeptides are turned ‘off’ once they have been released from a neuron are not well understood. To address this challenge, we are systematically identifying neuropeptidases, the enzymes that turn off neuropeptide signaling, and mapping which neuropeptides they inactivate. We are seeking undergraduate student researchers to assist a postdoctoral scholar in the lab to characterize identified neuropeptidases and manipulate their expression within specific cell types to determine their role(s) in behavior and aging.

Desired Skills or Experience: Completed coursework in biology, biochemistry, chemistry, genetics, and neuroscience desired but not necessary. Familiarity and proficiency with the following techniques desirable: *C. elegans* maintenance, PCR, cloning, microscopy, mass spectrometry.

To learn more about the Garrison lab, click [HERE](#).

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