

We investigate the basic molecular mechanisms that underlie neuronal wiring, function, and survival. We are interested in understanding how neuronal function and in particular synaptic function is regulated during aging and whether optimally tuned synaptic function can reduce age-dependent decline in different tissues and organs. We are also interested in understanding the role of translational mechanisms in maintaining functional and structural homeostasis in aging neurons. In our studies, we combine molecular biology and genetics with electrophysiology and imaging in several disease models in both *Drosophila* and mice.

**Potential research project options include:**

1. Investigate the molecular mechanisms that control blood barrier function in aging *Drosophila*.
2. Study how peripheral inflammatory signals influence the progression of neurodegeneration in an Alzheimer's disease model.
3. Investigate the role of protein translation mechanisms in the progression of Parkinson's disease related neurodegeneration.
4. Investigate the role of epitranscriptomic modifications in the regulation of SARS-CoV-2 mRNA translation.
5. Investigate the role of sympathetic nervous system in regulating the ovarian function in aging mice.

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

To apply to the Haghighi lab, return to the [Internships Homepage](#).