Morikawa lab is currently recruiting two postdocs. There are two ongoing projects.

1) Experience-dependent regulation of reward learning and addiction vulnerability

In this project, we are studying the neurobiological mechanisms regulating the counteractive effects of stressful experience and daily exercise on reward- and drug-based cue learning and the underlying synaptic plasticity in the mesolimbic dopamine system. One focus of this project is to determine how these experiences regulate the cue-reward timing dependence of learning via noradrenergic regulation of synaptic plasticity in the ventral tegmental area.

2) Dopamine regulation of synaptic plasticity in the nucleus accumbens and striatum

In this project, we are studying the calcium-dependent signaling mechanism mediating dopamine regulation of glutamatergic synaptic plasticity in the nucleus accumbens and striatum. Interaction of signaling molecules (cAMP, IP3, calcium) will be examined to determine the dopamine timing dependence of plasticity. We plan to extend this project to address the role of this form of plasticity in reward learning in live animals.

Techniques currently used in the lab include rodent behavioral analyses, brain stereotaxic surgery for injection of drugs and viral vectors, brain microdialysis to measure dopamine and norepinephrine levels, optogenetic and chemogenetic stimulation of specific neurons, and brain slice electrophysiology, calcium imaging, and UV photolysis of caged compounds.

Previous experience in at least one of the following techniques is desirable:

stereotaxic procedures in rodent brain, brain slice electrophysiology/calcium imaging

The candidate should have a PhD or MD. Initial appointment will be 2 years with a possibility of extension (up to 5 years). Salary will be based on NIH scale.

To apply, please send CV, brief statement of research interest and names of 2-3 references to:

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