

**Summary of Research Program:**

The overall goal of my research program is to use a multi-level approach, combining molecular biology, anatomy and behavioral neuroscience, to understand the role of cortico-basal ganglia-thalamic circuitry in the development of behaviors that are associated with drug reward and addiction, as well as in the processes that underlie decision-making, motivation and impulsivity. To accomplish these goals, we employ novel molecular and genetic tools to isolate the role of subcomponents of this complex circuitry in rodent models of addiction, attention-deficit-hyperactivity disorder (ADHD) and other impulse control disorders.

The primary strategies that we use include rodent behavioral models, viral-mediate gene transfer of engineered receptors (DREADDs) and pathway tracers, transgenic mouse models and immunohistochemistry. We are also using 2-photon microscopy as well as electrophysiology to address some of our research questions.



**Susan Ferguson, PhD**

[Lab Website](#)

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