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Incubator

Bio

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Our experiences come to shape our future behaviors and can have lasting effects on our quality of life. My research aims to understand how chronic exposure to particular stimuli (i.e. stress, food, drugs) alters the functioning of specific neural circuits. Following identification of the relevant circuits, I investigate the mechanisms that regulate these experience-dependent changes. This ultimately aids in our understanding of how maladaptive changes in brain function occur and how these changes result in psychiatric disorders.

My current focus is on specific neural circuits involved in reward processing and feeding behavior. I am discovering how various excitatory inputs to the nucleus accumbens, a critical brain node involved in processing the salience of events, modulate reward-related behaviors utilizing converging lines of inquiry. Specifically, I observe neuronal activity in awake behaving mice, and assess the mechanisms underlying changes in activity with electrophysiology. Finally, I then modulate specific circuits using optogenetics, a technique that provides spatio-temporal control over genetically identified cells, to determine the causal role of these circuits in reward-related behavior.