



Elizabeth Holly

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Effects of stress and local striatal circuits on goal-directed behavior

Stress has a profound, long-lasting impact on later decision-making, and understanding the neural basis of these effects may lead to better treatments and functional outcomes for those suffering from stress-related disorders. The primary goal of my research is to uncover how stressful events activate and change neural circuits to alter later reinforcement-related behaviors. In this talk, I will first discuss how striatal circuits drive broad goal-directed behaviors. In particular, I will highlight my recent work demonstrating that low-threshold spiking interneurons locally gate dopamine release in the dorsomedial striatum to facilitate goal-directed learning. Next, I will discuss how stress experience alters mesocorticolimbic and corticostriatal circuitry to disrupt decision-making for both appetitive and drug rewards. As a graduate student, I showed that intermittent social defeat stress in adult male and female rats augments the dopaminergic response to drug rewards, promoting escalated cocaine taking and seeking behaviors. As a senior postdoc, I am now integrating my graduate and postdoctoral lines of work to explore how stress across development impacts complex decision making in adulthood. In the age of COVID, now more than ever it is critical to understand the long-lasting impacts of social isolation, so I will also share my most recent K01-funded work exploring how adolescent social isolation impacts value-based choice in adult female and male mice, as well as the underlying corticostriatal circuitry.

The Psychology Department in the College of Science Colloquium

**Thursday,
February 10, 2022**

**Time: 4:00PM
Virtual**

Zoom Link:

[https://northeastern.zoom.us/meeting/register/tJEkcuGoqzktGtlzphZ2nJ2iAAjwm-e6wRmU](https://northeastern.zoom.us/j/6122222222)

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