I study sex differences in the noradrenergic regulation of attention to further our fundamental knowledge of neural circuits in attentional processes. Norepinephrine (NE) signaling from the locus coeruleus (LC) in the brainstem is critical for attention regulation and arousal. There are sex differences in the LC with respect to the number of neurons within the LC and dendritic inputs to the nucleus, but their functional consequences are unknown. Understanding sexual dimorphism in the LC impacts behavior will fill a gap in our fundamental understanding of female and male neural circuits and the role of the LC in different disease states. I am testing the ADHD-like behavioral consequences of manipulating LC activity in male and female rats during attentional tasks. We hypothesize that NE regulation of attention differs between sexes due to functional, anatomical, and physiological differences in LC-NE circuitry. Whether mechanisms and consequences are conserved or different between sexes, our knowledge of LC-NE attentional regulation will expand.