

Neural circuits for walking control in *Drosophila*

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Understanding how neural circuits control arm and leg movements is a major challenge in neuroscience. I tackle this challenge in the fruit fly, *Drosophila*, where genetic tools, connectomes, and neural recordings in behaving animals enable us to develop a detailed, mechanistic understanding of movement control. In the first part of my talk, I will discuss my work in the Tuthill Lab at the University of Washington on how neural circuits in the fly's "spinal cord" (ventral nerve cord) predictively inhibit specific proprioceptive signals from the legs during walking. In the second part of my talk, I will discuss my current work in the Ache Lab at the University of Würzburg on how brainstem-like circuits in the fly's brain start, speed up, and stop walking movements.