I’m interested in the neural basis of motor control, especially in understanding the transformation of signals as they pass from cortex to spinal cord. Some recent work in the motor cortex suggests that the dynamics of neural population activity best predicts motor outputs such as kinematics or EMGs. I’m interested in trying to understand how this signal generated from coordinated neural activity in cortex is an appropriate input into the spinal cord to drive complex motor action. Can our growing understanding of neural population activity in motor cortex neatly fit into our physiological understanding of the spinal cord? What are the implications on our understanding that certain basic tasks are largely driven by spinal cord circuitries, such as locomotion, while more complex tasks require input from cortex? I’m interested in answering these questions through a combination of experimental work and computational modeling.