

Motor Control Science Club, March 3, 2023, 11:00 AM CET

The lecture is open to everybody

Spinal Cord Cell Types for Motor Control

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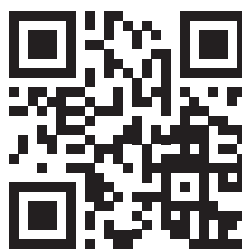
Host: Dr. Graziana Gatto
Clinic for Neurology of the Faculty of Medicine,
University of Cologne



From the mountain goat's nimble locomotion to the precision pounce of a cougar, animal behavior is mediated by cells and circuits distributed throughout the nervous system and body. Various regions of the nervous system work together to govern sensation, motivation, decision making, and more, but ultimately, "the sole executant [of behavior] is muscle, whether in whispering a syllable or felling a forest". In our view, the fundamental role of the nervous system is motor control and the final point of neural control over movement is in the spinal cord. The spinal cord contains the motoneurons that command the muscles of the body, the premotor neurons that are, in turn, the primary regulators of motoneuron activity, and the broad spinal networks that can autonomously orchestrate movements even without input from the brain.

Our overall approach has three parts: first, to define and characterize the cell types of the spinal cord; second, to deconstruct behavior into motor tasks; and third, to relate these two elements, asking how specific aspects of motor control are instantiated in specific neuroanatomical substrates. In this talk, I will present our recent and ongoing work using two complementary approaches to study spinal cord function: characterizing spinal neuron cell types transcriptionally and charting their dynamic neural activity during behavior.

Live @
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