Zenith

INTERNATIONAL PHD PROGRAM IN NEUROSCIENCE

ZENITH SEMINARS

FRIDAY, 18 DECEMBER 2020
AT 5:00 PM (CET)

SANDEEP KISHORE

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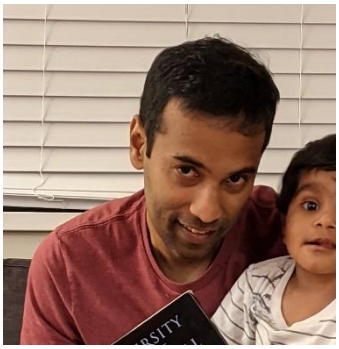

FISHING FOR PRINCIPLES OF ORGANIZATION IN DEVELOPING SPINAL MOTOR CIRCUITS

Even the simplest vertebrate nervous systems consist of hundreds of thousands of neurons connected by a very large number of synapses. How this web of neurons leads to behavior is now being investigated using approaches such as whole brain imaging and whole brain electron microscopy reconstructions. However, are there overarching schemes of circuit organization that can simplify our quest for understanding the neural basis of function? We ask this question in the context of circuits that drive locomotion in the developing zebrafish spinal cord. Studying the development of spinal circuits in larval zebrafish provides an opportunity to investigate the emergence of circuits in parallel with the emergence of motor behaviors. Developing zebrafish offer the advantage of studying the nervous system unobscured by pigmentation or age. By employing a combination of genetic, imaging and electrophysiology tools, we have recently discovered a novel organization of inhibitory circuits in relation to the speed of locomotion. Using our work as a case study, I hope to convey the broader utility of studying developing nervous systems as a lens into adult nervous system function.

Sandeep Kishore received his PhD in Neuroscience from Cornell University. After being a Postdoctoral Fellow, he is currently a research associate at Northwestern University, working with David L. McLean, and interested in the development and organization of inhibitory synaptic drive in locomotor networks.

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