

Making and Breaking Spinal Motor Neurons

February 5

Tuesday, 12:30 pm

Weekly Colloquium

Billings Building
Rosedale Conference Room



Speaker: Hynek Wichterle, Ph.D.
Associate Professor of Pathology and Cell Biology, Neuroscience, Rehabilitation and Regenerative Medicine
Co-Director, Motor Neuron Center
Columbia University

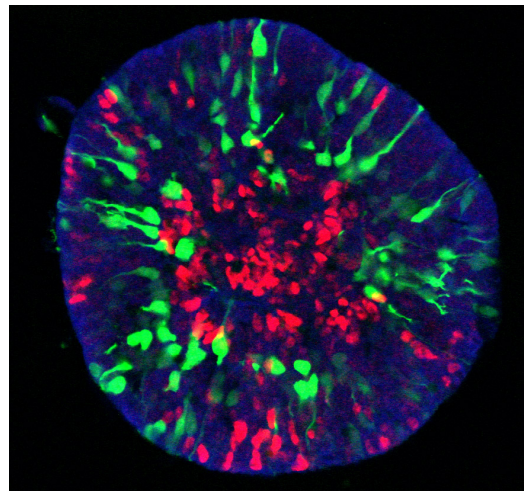
Hosts: Yutaka Yoshida, Ph.D.

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Research

Dr. Wichterle developed groundbreaking methods for producing spinal cord neurons from pluripotent embryonic stem cells in a culture dish. The process faithfully recapitulates normal embryonic development, providing a unique opportunity to study and experimentally probe nerve cells in a controlled environment outside of the embryo. He is using the system to decode transcriptional programs that control expression of genes important for neuronal differentiation, maturation, and function. His lab also capitalizes on the unlimited source of spinal neurons to study motor neuron degenerative diseases, such as amyotrophic lateral sclerosis (ALS or Lou Gehrig's disease), with the goal of discovering new drugs that promote motor neuron survival.



1. A Stem Cell-Based Screening Platform Identifies Compounds that Desensitize Motor Neurons to Endoplasmic Reticulum Stress. Thams S, Lowry ER, Larraufie MH, Spiller KJ, Li H, Williams DJ, Hoang P, Jiang E, Williams LA, Sandoe J, Eggen K, Lieberam I, Kanning KC, Stockwell BR, Henderson CE, Wichterle H. *Mol Ther*. 2019 Jan 2;27(1):87-101. doi: 10.1016/j.yjmthe.2018.10.010. Epub 2018 Oct 19.
2. Expression of Terminal Effector Genes in Mammalian Neurons Is Maintained by a Dynamic Relay of Transient Enhancers. Rhee HS, Closser M, Guo Y, Bashkirova EV, Tan GC, Gifford DK, Wichterle H. *Neuron*. 2016 Dec 21;92(6):1252-1265. doi: 10.1016/j.neuron.2016.11.037. Epub 2016 Dec 8.
3. Subtype Diversification and Synaptic Specificity of Stem Cell-Derived Spinal Interneurons. Hoang PT, Chalif JI, Bikoff JB, Jessell TM, Mentis GZ, Wichterle H. *Neuron*. 2018 Oct 10;100(1):135-149.e7. doi: 10.1016/j.neuron.2018.09.016.



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