

**27TH FEBRUARY AT 11.30 A.M.
ROOM A 222 | POVO 1**

**CIBIO
EXTERNAL
seminar**

INVESTIGATING AXONAL MOLECULAR DYNAMICS IN REGENERATION AND NEURODEGENERATIVE DISEASES

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“Neurons are highly polarized cells with an elongated axon that extends far away from the cell body. In order to maintain neuronal homeostasis, neurons rely extensively on axonal transport of membranous organelles and other molecular complexes in addition to local translation of proteins. **Axonal transport plays a central role** in the establishment of neuronal polarity, axonal growth and stabilization and synapses formation, allowing for precise spatio-temporal activation and modulation of numerous molecular cascades. Anterograde and retrograde axonal transport is supported by **various molecular motors**, such as kinesins and dyneins, **and a complex microtubule network**. In this seminar I will discuss some aspects of **retrograde signaling** in neurons, ranging from injury signals to dynein-mediated axonal transport, which are critical for the survival of neurons. We will also discuss **strategies to promote axonal regeneration** through to use of specialized substrates and the tools we have developed to investigate the mechanisms underlying axonal degeneration in **Amyotrophic Lateral Sclerosis (ALS)**.”



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