

Department of Anatomy & Cell Biology Seminar Series

Michael P. Rout, PhD

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A Tour of the Pore: Structural and Functional Mapping of the Nuclear Pore Complex

Nuclear Pore Complexes (NPCs) mediate the transport of RNAs and proteins between the cytoplasm and nucleoplasm. We have used an integrative approach to determine a structure for the entire 52 MDa yeast NPC, revealing the NPC's functional elements in unprecedented detail. The NPC is surprisingly modular, consisting of only 30 proteins of the nucleoporin family (Nups), which assemble into relatively rigid higher-order scaffold whose modules are held together by flexible connectors, imbuing the NPC with both strength and flexibility. The scaffold surrounds a central channel from which multiple intrinsically disordered Phe-Gly (FG) repeat motifs project which mediate selective nucleocytoplasmic transport through specific interactions with nuclear transport factors. I will describe how our latest findings allows us to rationalize key aspects of the architecture, evolutionary origins and transport mechanism of the NPC.



Wednesday, Mar. 1st, 2023
11:30am - 12:30pm



Room 1/12 - Strathcona
Anatomy and Dentistry
Building

Join us in room 1/53 after the seminar for an opportunity to meet the speaker over a pizza lunch!

Hosted by: Dieter Reinhardt, PhD,
and Natalie Zeytuni, PhD



McGill