The Lady Davis Institute, The Neuro and the McGill Department of Human Genetics present

A McGill Distinguished Lecture in Human Genetics

Molecular genetic studies of CNS vascular development and disease

Jeremy Nathans, M.D., Ph.D.

Professor of Molecular Biology and Genetics
Professor of Neuroscience
Samuel Theobald Professor of Ophthalmology
Investigator, Howard Hughes Medical Institute
Johns Hopkins Medical School

TUESDAY, October 1, 2019

3:30 PM - 4:30 PM
Jeanne Timmins Amphitheatre
The Neuro
3801 University Street
Montreal, Quebec

Jeremy Nathans is a Professor in the Departments of Molecular Biology and Genetics, Neuroscience, and Ophthalmology at the Johns Hopkins Medical School and an Investigator of the Howard Hughes Medical Institute. Dr. Nathans earned bachelor degrees in Life Sciences and Chemistry from M.I.T. (1979), and a Ph.D. in Biochemistry (1985) and an M.D. (1987) from Stanford Medical School. After one year of postdoctoral research at Genentech, he joined the faculty at the Johns Hopkins Medical School and the Howard Hughes Medical Institute in 1988.

Dr. Nathans is best known for his fundamental discoveries in basic and clinical vision research. Dr. Nathans isolated the genes coding for the human visual pigments and elucidated the molecular basis of inherited variation in human color vision; and he and his students defined the biochemical basis of early onset forms of inherited macular degeneration, the most common form of retinitis pigmentosa, and the retinal vascular disorders familial exudative vitreoretinopathy and Norrie disease. Current research in the Nathans laboratory focuses on vascular biology and disease, including regulation of the blood-brain-barrier and blood-retinal-barrier.

Abstract:
The central nervous system, consisting of the brain, spinal cord, and retina, is supplied by blood vessels with unique barrier properties that protect the surrounding neurons and glia. This barrier, referred to as the blood-brain barrier, arises from a distinctive program of gene expression in vascular endothelial cells that suppresses cell permeability pathways and activates diverse transmembrane transport pathways. In research that started with an analysis of monogenic disorders of retinal angiogenesis, the Nathans laboratory has defined a signaling pathway that is essential both for angiogenesis throughout the CNS and the development and maintenance of the blood-brain barrier. Interestingly, the barrier-competent state remains plastic throughout life and is actively suppressed in a small number of brain regions.

Host: Dr. Rod McInnes, rod.mcinnes@mcgill.ca

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