Biology Seminar

Western
UNIVERSITY · CANADA

12:30 - 1:30 pm
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BGS 0165

John Archibald
Professor
Department of Biochemistry and Molecular Biology
Dalhousie University, Halifax, Nova Scotia

Gene sharing across the eukaryotic tree of life: highways, byways, and bike paths

Endosymbiosis has had a profound impact on the evolution of eukaryotic life. Mitochondria and plastids are endosymbiotically-derived organelles—they evolved from once free-living bacteria. Subsequent to the evolution of 'primary' plastids from cyanobacteria, the process of 'secondary' (i.e., eukaryote-eukaryote) endosymbiosis has served to spread plastids horizontally across the eukaryotic tree. Consequently, the nuclear genomes of many microbial eukaryotes are evolutionary mosaics—they are mixtures of genes that have come from different prokaryotic and eukaryotic lineages. In this presentation I will summarize what is known about the genetic and cell biological diversity of protists and single-celled algae, and present new data exploring the extent to which horizontal gene transfers from bacteria and viruses have also contributed to genome mosaicism across the eukaryotic tree of life.

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