GUEST SPEAKER SEMINAR

Molecular Genetics
UNIVERSITY OF TORONTO

CRISPR-Cas systems: from humble beginnings to today's headlines

Four decades after discovering restriction enzymes, another system for cleaving foreign DNA was identified—one that acts as an adaptive immune system in bacteria and archaea. Clustered regularly interspaced short palindromic repeats (CRISPR) and their associated cas genes protect microbial cells against infection by foreign DNA elements such as bacteriophages and plasmids. CRISPR-Cas systems function by first incorporating short DNA 'spacers', homologous to invading phage or plasmid sequences, into a CRISPR array in a process known as adaptation. The array is then transcribed and matured into small RNA molecules (maturation), which, by recruiting a Cas endonuclease, lead to DNA cleavage (interference) of the sequence homologous to the spacer. This adaptive ability, when engineered, has also resulted in many applications for genome manipulation. This seminar will mostly recall the discovery and the biology of CRISPR-Cas systems as well as the latest developments by our group and others.

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Host: Dr. Alan Davidson

Date: Thursday September 11th, 2014
Time: 9:30 AM
Place: Donnelly Centre, 160 College Street, Red Seminar Room