



presents Guest Speaker :

Nicholas Schork

**Director of Biostatistics and Bioinformatics,
The Scripps Translational Science Institute**

Driver and Passenger Mutations in Cancer

Recent studies investigating the genetic determinants of cancer suggest that some of the genetic alterations contributing to tumorigenesis may be inherited, but most of them are somatically acquired during the transition of a normal cell to a cancer cell. A systematic understanding of the genetic and molecular determinants of cancers has already begun to have a transformative effect on the study and treatment of cancer, particularly through the identification of a range of genetic alterations in protein kinase genes, which are highly associated with the disease. Since kinases are prominent therapeutic targets for intervention within the cancer cell, studying the impact that genomic alterations within them have on cancer initiation, progression, and treatment is both logical and timely. In fact, recent sequencing and resequencing (i.e., polymorphism identification) efforts have catalyzed the quest for protein kinase 'driver' mutations (i.e., those genetic alterations which contribute to the transformation of a normal cell to a proliferating cancerous cell) in distinction to kinase 'passenger' mutations which reflect mutations that merely build up in course of normal and unchecked (i.e., cancerous) somatic cell replication and proliferation. In this review, we discuss the recent progress in the discovery and functional characterization of protein kinase cancer driver mutations and the implications of this progress for understanding tumorigenesis as well as the design of 'personalized' cancer therapeutics that target an individual's unique mutational profile.

Student Presentation (10 mins):

Ismael Vergara, PhD candidate, Chen lab, SFU

*Polymorphic segmental duplications in the nematode *Caenorhabditis elegans**

Thursday, February 12, 2009, 6:00 pm

Gordon and Leslie Diamond Family Theatre,
BC Cancer Research Centre,
675 West 10th Avenue



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