

The Impact of Genomics in the Clinic

Proceedings of 2009 Conference

High Throughput Genotyping

Leading genomics researcher [Dr Colin Ross](#) and eminent pediatric oncologist, [Dr Rod Rassekh](#) explain Single Nucleotide Polymorphisms (SNPs); what they are, how they can be tested in a patient's DNA sample and how they can be used to identify disease genes. They use the chemotherapeutic agent Cisplatin as an example to show how pharmacogenetics will lead to diagnostic testing that can predict those who are at risk of developing toxicity based on their genetics.

High Throughput Sequencing

World renowned scientist [Dr Marco Marra](#) and clinical researcher [Dr Cornelius Boerkoel](#) explain different DNA sequencing methods, their advantages and limitations and how these genomic technologies can be applied clinically. A specific patient example is provided to illustrate the use of sequencing technology for making diagnoses and guiding care.

High Resolution Detection of Copy Number Variation

[Dr Colin Collins](#), an expert in translational genomics, and [Dr Michelle Demos](#) a pediatric neurologist, explain different strategies for identifying biomarkers and provide an overview of the microarray technologies and software available for advancing translational research. An example of how the technology is impacting patients is provided by showing the use of array technology on patients with idiopathic mental retardation and its potential impact on patients with intractable cryptogenic epilepsy.

Personalized Medicine: Fulfilling the Promise

One of Canada's most prominent clinical geneticists [Dr Michael Hayden](#) discusses how the impact of genomics on health care has been significantly accelerated by advances in technology. He asks "Is this genotype or does it offer hope?" This talk provides a perspective on the benefits and application of new genetic technologies.

Epigenetic Variation and its Impact on Human Health and Disease

In this session, [Dr Michael Kobor](#), a pioneer in the new field of epigenetics helps you understand the biological basis of epigenetic modifications so that you can appreciate the extent of epigenetic variation in human populations and recognize the technologies available to include epigenetic studies into clinical research.

Issues in using Genetic Information in Clinical Practice

Leading health behaviour researcher, [Dr Joan Bottorff](#) discusses some of the issues associated with the effective use of genetic discoveries and their implications for patients, communities and health care professionals including psychosocial issues and the potential usefulness of findings.