

SÉMINAIRES ET CONFÉRENCES



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« Clinical Genomics for infectious diseases? »

Genomics holds enormous potential for infectious disease diagnostics and surveillance. More than two decades of fruitful academic research with next-generation sequencing technologies (NGS) has led to many discoveries on microbial genomes, as well as the development of a large arsenal of genomic methods and bioinformatic tools. Despite these advancements, genomics is relatively absent from the clinical setting. Many factors, including the high cost of analyses, inadequate computer infrastructure and the lack of required skilled personnel have delayed its adoption.

In my presentation, I will describe the current state of clinical genomics for infectious disease diagnostics and surveillance at the Public Health Laboratory of Quebec (Laboratoire de Santé Publique du Québec, LSPQ). I will also present my work, which consists of laying the foundations for a new platform of Genomics and Bioinformatics, in addition to developing new diagnostic tests. Finally, I will provide an overview of some of the many applications of genomics in public health laboratories including the search for resistance genes, the investigation of transmission chain during outbreaks and the identification of pathogens based on clinical metagenomics.

My role includes an important translational research component aimed at conveying basic genomic knowledge to clinical applications, thus offering the best of genomic research to patients. Conversely, I will highlight how routine clinical cases could contribute interesting new knowledge and data to basic research in academic laboratories, therefore fueling new collaborations. My aim is to bridge the gap between academic research in genomics and the public health laboratory, in order to accelerate the implementation of cutting-edge genomic and bioinformatic methods into the clinical environment. This virtuous circle could ultimately benefit both researchers and patients.



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