

Dr. Mehrdad Hajibabaei - Assistant Professor, Integrative Biology & Biodiversity Institute of Ontario, University of Guelph



## **Bio**

Dr. Hajibabaei's research aims at developing a comprehensive genomics based system to study evolutionary relationships and diversity of life in different environments. He is currently involved in the following projects: Environmental barcoding through next-generation sequencing, DNA Barcoding of tropical Lepidoptera and their host plants, Establishing DNA barcoding systems in plants, protists, and fungi, Molecular biosystematics analysis of archival (museum) specimens, Developing rapid array-based identification systems, Building bioinformatics tools for molecular biodiversity analysis. Dr. Hajibabaei also serves as the Associate Director of the Canadian Centre for DNA Barcoding, and as Associate Editor for the journal *BMC Ecology*.

Dr. Trevor Pugh -PhD, FACMG, Scientist, Princess Margaret Cancer Centre, Assistant Professor, Department of Medical Biophysics, University of Toronto



## **Bio**

Dr. Pugh's research focuses on the application of genome sequence analysis as a routine clinical test, particularly as modern cancer treatments are increasingly predicated on genetic information. Trevor is particularly interested in genome analysis of serial biopsies and circulating tumour DNA collected during clinical trials, genetic relationships amongst metastatic sites suggestive of effective combination therapies, and oncogenic mechanisms underlying rare tumours of unknown etiology, particularly pediatric cancers. I also spend part of my time supporting diagnostic testing as a clinical molecular geneticist through the CLIA-certified Advanced Molecular Diagnostics Laboratory at the Princess Margaret Cancer Centre

Dr. Samir Patel – Clinical Microbiologist, Public Health Ontario. Assistant Professor, Laboratory Medicine and Pathobiology, University of Toronto



Dr. Patel has both clinical and research interests, including identification and diagnosis of pathogens including rare or emerging pathogens. In addition, he is involved in detection and characterization of antibiotic resistant organisms. Accurate diagnosis of infection is crucial in management of patients as well in controlling the spread of disease. The traditional approaches are insensitive for diagnosis of many pathogens including viruses, as well as highly labour intensive and time-consuming. Recently developed next generation sequencing technologies have significantly advanced the capability of labs to identify pathogens causing diseases in humans, animals and plants. At Public Health Ontario Laboratory (PHOL), we are interested in developing a research program that will be capable of identifying emerging or rare pathogens causing disease in humans. This capability will significantly enhance our ability to respond to any threat by quickly and accurately detecting pathogens resulting in implementation of control measures to prevent them from spreading.

Dr. Nicholas Provart – Associate Professor, Plant Cyberinfrastructure & Systems Biology, University of Toronto



Dr. Provart's interests lie in the use of bioinformatics tools to identify novel aspects of plant biology, especially in the area of plant stress biology. For instance, cluster analysis of gene expression data from plants subjected to different abiotic and biotic stresses has provided putative functional roles for several plant transcription factors, cytochrome P450s, and other members within multigene families. Furthermore, gene expression analyses can also provide inferential mechanistic insights into the development of various organs or tissues, e.g. rice seed, at the metabolic or signal transduction level. Being a founding member of the Centre for the Analysis of Genome Evolution and Function, CAGEF – with its numerous high-throughput technology platforms, Dr. Provart's lab is well positioned to utilize and generate large amounts of sequence and gene expression data, following a systems biology approach. Dr. Provart also holds the following positions: Chair, Bioinformatics SC, Multinational Arabidopsis Steering Committee, Member, North American Arabidopsis Steering Committee and IAIC, Member, Centre for the Analysis of Genome Evolution and Function

Dr. Jordan Lerner-Ellis - Head and Director of the Advanced Molecular Diagnostics Laboratory, Mount Sinai Hospital. Associate Scientist, Ontario Institute for Cancer Research. Assistant Professor, Laboratory Medicine and Pathobiology, University of Toronto



Dr. Jordan Lerner-Ellis' laboratory provides clinical diagnostic services for hereditary breast, ovarian and colon cancer, and other genetic testing areas, for downtown Toronto and the province of Ontario. His core interest is the application of molecular diagnostics to breast and colon cancer. His research is focused on providing major improvements in the clinical sensitivity of genetic testing through greater reliance on new sequencing technologies. As part of this effort, he and his colleagues are developing a framework for the analysis and identification of a wide range of genetic disorders characterized by late onset and variable penetrance. Dr Lerner-Ellis is currently looking at the extent to which genomic information can be used in the diagnosis, treatment and prevention of disease. In one study, he is sequencing the exomes of hereditary cancer patients with a view to identifying novel genes and developing improved therapies.

Dr. Ryan Austin – Research Scientist, Southern Crop Protection and Food Research Centre, Agriculture and Agri-Food Canada



### **Bio**

Dr. Austin's primary areas of expertise are next-generation gene mapping, transcriptome assembly and differential expression, microarray analysis, regulatory motif prediction, and functional genomics. His current research projects include characterizing the effects of water deficit on chromatin dynamics and gene expression in cell layers of the root, development of genetic resistance to Plum pox virus in Peach for the eradication of Plum pox virus in Canada, and development of genetic resistance to Soybean mosaic virus (SMV) in Soybean varieties of Ontario.

Dr. Kristiina Timmimies – Postdoctoral Research Fellow,  
The Centre for Applied Genomics, The Hospital for Sick  
Children



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