SickKids | PETER GILGAN CENTRE FOR RESEARCH AND LEARNING

Models of Congenital Malformation and Disease

Faculty Search Seminar

Dr. Michelle Collins

Postdoctoral Fellow
Didier Stainier's Lab
Max Planck Institute for Heart & Lung Research

How to build a heart – from organ formation to function

Cardiovascular diseases are the leading global cause of morbidity and mortality worldwide. Many of these diseases have a significant genetic component that perturbs cardiac development and function. Genome-wide association studies and whole-exome sequencing approaches have identified a wealth of genetic risk factors for cardiovascular disease. However, a major barrier to the development of new therapeutics and personalized medicine is our limited understanding of the fundamental biology underlying disease-associated variants. The overarching aim of my research is to decipher the genetic and cellular abnormalities underlying defective cardiac rhythm and function using state-of-the-art genetic and imaging approaches in zebrafish and iPSC-derived cardiomyocytes. In this seminar, I will highlight my work on how the loss of a key transcription factor, Pitx2c, leads to developmental defects in sarcomere organization and cardiac metabolism that precede the onset of cardiac arrhythmia in zebrafish. Additionally, I will discuss future plans to elucidate the function of genes associated with inherited forms of cardiac rhythm disorders and cardiomyopathies.

Wednesday | February 19th | 2020 | 3 pm

PGCRL Auditorium

Hosts: Drs. Brian Ciruna & John Brumell

Dr. Michelle Collins is being interviewed for a Scientist position at the Research Institute