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Linking influenza virus infection to risk of cardiovascular events: a mechanistic approach

Friday February 22nd at 3pm in RT 1516

Bio: Zack is a member of the Lab for Industrial and Applied Mathematics and a Ph.D. student in applied mathematics at York University in Toronto, ON advised by Jianhong Wu. Previously, Zack was at Cleveland State University where he obtained an M.S. in applied mathematics under advisors Daniel Munther and Shawn D. Ryan while winning the CSU Outstanding Graduate student award for the entire University.

Abstract: Influenza induced cardiac events are associated with multiple biological pathways in a human host. To study the contribution of influenza virus infection to cardiovascular events, we develop a dynamic model which incorporates the immune response, inflammatory system, and blood coagulation. We synthesize these biological systems and integrate them into a cohesive modelling framework to study their connections to blood clotting. The primary outcome of this model is a blood clot of an artery or blood vessel resulting from influenza virus infection. This model may be used to aid epidemiological study of how individual biological components contribute to blood clotting events. This research is part of the NSERC Sanofi–York Industrial Research Chair Program in Vaccine Mathematics, Modelling and Manufacturing (IRC), a collaboration between York University and Sanofi Pasteur.
Refreshments at 2:30pm in RT 1517