

Department Colloquium

Mathematics and Statistics
York University



Date, Time, and Room

Wednesday January 29, 2025
1:30PM-2:30PM
Stong College 224

Speaker

Dr. Nantel Bergeron
York University

Title

Thirty Years of Quasisymmetry

Abstract

During the early years of my time at York University, I collaborated with many researchers to make two significant discoveries involving quasisymmetric functions. The first demonstrated the universality of the space of quasisymmetric functions and described a subspace used to detect objects resembling spheres. The second was a promising computation of the dimension of the quotient of polynomials in n variables by the ideal generated by the quasisymmetric polynomials. Remarkably, the resulting dimensions corresponded to the well-known Catalan numbers. These two results continue to resonate within mathematics, and in recent years, we have achieved some remarkable advances.

Symmetry plays a central role in mathematics and physics, and symmetric functions have applications in numerous areas of science. In this talk, I will begin by recalling some well-established results about symmetric functions, framing the aforementioned results as a natural generalization. I will then explore how these insights paved the way for numerous subsequent discoveries.

(In collaboration with F. Sottile, S. Mykitiuk, S. van Willigenburg, M. Aguiar, F. Bergeron, J. C. Aval, M. Zabrocki, L. Gagnon, P. Nadeau, H. Spink, V. Tewari, and several others)

Refreshments in Ross N620 at 2:30PM

science

