Colloquium

University of Notre Dame
Department of Mathematics

Speaker: Anna Pun

University of Virginia

Will give a lecture entitled
Symmetric functions -- a gem in algebraic combinatorics

Date: Tuesday, December 14, 2021
Time: 4:00 PM
Location: 129 DeBartolo Hall

Zoom URL: https://notredame.zoom.us/j/95724323404?pwd=cUc3RGh1TTFLZE1xL3RydzN4Rm1Zdz09

Departmental Tea: Tea in Room 257 (lounge in Hurley Hall) at 3:30 p.m.

Abstract:

Algebraic combinatorics is a subject that interprets algebraic objects combinatorially and combinatorial objects algebraically, thereby obtaining deep connections between the two areas. The study of polynomial rings is one of the important topics in algebraic combinatorics, as the associated combinatorial tools provide profound connections with partitions of integers and the representation theory of the symmetric group, the general linear group, Lie algebra, Hecke algebras, elliptic Hall algebra, shuffle algebra and other important algebras. It also gives fruitful information on objects in algebraic geometry such as the multiplicative structure of the cohomology ring of the Grassmannian. In this talk, I will introduce the ring of symmetric functions and discuss some important bases and their associated combinatorial objects. I will then discuss some conjectures and theorems in algebraic combinatorics that are inspired by the Macdonald positivity conjecture and end with a brief introduction to Catalanimals, an exciting powerful tool to prove these theorems.

Anna Pun - University of Virginia