

# Colloquium

University of Notre Dame  
Department of Mathematics

**Speaker:** Alishahi Akram

Columbia University

**Will give a lecture entitled**

Homological knot invariants, relations and applications

**Date:** Thursday, January 17, 2019

**Time:** 4:00 PM

**Location:** 117 Hayes-Healy Hall

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



**Abstract:**

Knot theory is about studying knots i.e. image of a smooth injective map from circle to  $\mathbb{R}^3$ . In this talk, we will start by sketching some problems in knot theory. Then we will discuss two knot invariants, Khovanov homology and knot Floer homology, and we will explain how they can be used to answer some of these questions.

Khovanov homology and knot Floer homology are algebraic knot invariants that are defined combinatorially and analytically, respectively. Despite their very different definitions, the two invariants seem to contain a great deal of the same information and are conjectured to be related. In parallel, we will discuss some of their similarities. This talk is based on joint works with Nathan Dowlin and Eaman Eftekhary.