

COLLOQUIUM

Anna Marie Bohmann
Vanderbilt University

Detecting algebraic
structures: K -theory and
Lawvere theories

The logo for Mathematics and Statistics features a large orange circle in the center, containing the text "Mathematics and Statistics" in a bold, black, sans-serif font. This circle is set against a background of four blue squares arranged in a 2x2 grid, with the circle overlapping the center of these squares.

Mathematics
and
Statistics

Date: Friday January 22, 2021

Time: 3:30 - 4:30 PM

Zoom link:

<https://uregina-ca.zoom.us/j/92508741353?pwd=UzFOMjVMelVhRWhqR215cjd6dTICQT09>

Abstract: In the 1950s and 60s, mathematicians began constructing the invariants of rings that are called “ K -theory.” The K -theory of rings is hard to compute, but it contains lots of interesting information about algebra, number theory, and topology. For example, K -theory detects when rings are “the same” in the sense of having suitably equivalent categories of modules, which is called Morita invariance. In this talk, I will discuss the K -theory of rings as well as new work with Markus Szymik about the K -theory of a more general kind of algebraic structure, called a Lawvere theory. In the latter case, we show that while the K -theory of Lawvere theories contains lots of interesting information, it fails to satisfy Morita invariance!