Peter Hilton Memorial Lecture - 2025

Letting the rank or genus go to infinity can help. Let's do it!

Speaker: Nathalie Wahl, University of Copenhagen
Date: Thursday, March 20, 2025
Time: 3:00pm
Location: Lecture Hall 10, Binghamton University
Abstract: Many objects come in an infinite family: matrices can have as high a rank as we like, surfaces exist for any given genus, configuration spaces can have any number of points, etc. The principle of homological stability is that letting this rank or genus go to infinity can make certain computations easier.

The talk will explain this principle and then proceed to look for useful rank or genus functions where they were maybe not immediately visible. We will consider objects like Thompson groups, paper garlands, or algebraic versions of garlands that will make odd symplectic groups appear.

About the speaker: Nathalie Wahl earned her doctorate from the University of Oxford in 2001, under the supervision of Ulrike Tillmann. Her main research areas are algebraic topology, geometric topology, and homotopy theory. Wahl has been a pioneer in the field of homological stability, and has a particular interest in mapping class groups, loop spaces, string topology, operads, and field theories. In 2008 Wahl won the Young Elite Researcher Award of the Independent Research Fund Denmark. She was elected in 2016 to the Danish Academy of Natural Sciences, and in 2020 to the Royal Danish Academy of Sciences and Letters. She gave invited talks at the International Congress of Mathematicians in 2022, and at International Congress of Women Mathematicians in Hyderabad in 2010. She is currently the director of the Copenhagen Centre for Geometry and Topology, funded by the Danish National Research Foundation.

The lecture will be followed by a reception at 4:15 p.m. in the Anderson Center Reception Room, Anderson Performing Arts Center, Binghamton University. This reception is for the whole Binghamton Mathematics Community as well as for our visitors.

For details contact cmalkiew at binghamton dot edu.