



Speaker: Patricia Hersh
North Carolina State University

Wednesday, October 3, 2018

4:00 PM

117 Hayes-Healy Hall

Title: Combinatorics and topology of totally nonnegative spaces

Abstract:

We will discuss results, both old and new, regarding the topological and combinatorial structure of totally nonnegative parts of varieties. Interest in these spaces comes from geometric representation theory. In many cases, these arise as images of quite interesting maps, with the fibers of these maps describing relations for instance amongst exponentiated Chevalley generators. We will discuss what is known about the structure both of these spaces themselves and also for these fibers, reviewing background along the way. A running theme will be the finding of new ways to play the combinatorics of posets of closure relations off of limited topological knowledge regarding how cells attach to each other. Parts of this story are joint work with Jim Davis and Ezra Miller and with Rick Kenyon.