



**The Maseeh Mathematics and Statistics Colloquium Series\***  
presents

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## Singularities of Schubert varieties with a topological perspective

**Abstract:** The study of singularities of Schubert varieties is an area of research that involves an interesting interplay between algebraic geometry, combinatorics, Lie theory and algebraic topology. Though Schubert varieties are studied for generalized flag varieties, in this talk I will introduce this topic using examples in the simple case when the flag variety is a Grassmannian. Grassmannian,  $G(k,n)$ , is the collection of all  $k$ -dimensional subspaces of an  $n$ -dimensional vector space, and Schubert varieties are a particular collection of subvarieties of  $G(k,n)$ . There is vast literature on singularities of Schubert varieties dealing with the following fundamental questions: When is a Schubert variety smooth and what is its smooth locus? In this talk, along with stating some nice results that try to answer these questions, I will introduce and analyze a new question: What is the local topology of Schubert variety at a singular point?

The talk is aimed at a general audience. All of the terms used above will be defined in the talk.

**Friday, November 2nd, 2012 at 3:15pm**  
**Neuberger Hall room 454**

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