The mysteries of Chern plethysm

Abstract:
Symmetric functions are highly ubiquitous in algebraic combinatorics, with connections to the representation theory of $GL_n$ and $S_n$, the geometry of Grassmannians, and more. There is a classical way to 'compose' symmetric functions called plethysm which has a nice representation-theoretic interpretation. We will describe a related operation called Chern plethysm which has inputs given by a symmetric function $F$ and a vector bundle $E$ and outputs a symmetric polynomial. Chern plethysm provides numerous Schur-positivity results, indicating a representation-theoretic connection, but finding this connection remains an open problem. Joint with Sara Billey and Vasu Tewari.

Thursday, January 9, 2020
1:00 PM
AP&M 6402