

# Representation Theory, Geometry & Combinatorics Seminar

Organizer: Mark Haiman & Kolya Reshetikhin

Wednesday, 4:00–6:00pm, 939 Evans

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Dec. 5     **Erik Carlsson**, Princeton

*Vertex Operators on Hilbert Schemes*

It is well known that there is a natural way of identifying the cohomology ( $T^2$  equivariant, with coefficients over  $\mathbb{Q}$ ) of the Hilbert scheme of points with the space of symmetric polynomials. Furthermore, the interplay between the combinatorics of symmetric functions and the geometry of Hilbert Schemes goes both ways, leading to results on either side. I'll geometrically construct a class of “vertex operators” on these spaces which on the one hand help the study of integrals on Hilbert Schemes, and on the other lead to some interesting identities in Jack polynomials.