Representation Theory, Geometry & Combinatorics Seminar

Organizer: M. Haiman and N. Reshetikhin

Wednesday, 4:00–6:00pm, 939 Evans

Sept. 30   **Ishai Dan-Cohen**, UCB
             Moduli of unipotent representations

Fix a unipotent group G over a field of characteristic zero. The moduli stack of all representations of a fixed dimension n has some unpleasant properties: its automorphism groups are nonproper and, worse, their dimension can jump in families. We set out instead to construct a quasi-projective variety which will parametrize representations subject to a suitable nondegeneracy condition.

For n not more than a certain invariant of G, which I call the *width*, I have a concrete construction. When G is free, the width is ∞, and, at the opposite extreme, when G is commutative the width shrinks to 1. But in the latter case, a different construction (worked out jointly with Anton Geraschenko) provides a variety parametrizing representations of dimension n for n arbitrary after all.

This talk will have significant overlap with my talk at the RTGC workshop in May, but this time I'll focus more on statements of theorems than on examples.