

# GRADUATE SEMINAR

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## The Roots and Weyl Groups of Compact Matrix Lie Groups

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**Date March 5, 2017**

**Time 3:30pm - 4:30pm**

**Location Math/Stat Department Lounge**

**Abstract:** The Weyl group is the group generated by reflections about roots of a compact matrix Lie group. In this talk I will discuss the roots for several examples of compact matrix Lie groups. I will also talk about how the Weyl group acts on the Lie algebras of the maximal torus of compact matrix Lie groups, as well the polynomials on such Lie algebras. The ring of polynomials fixed by the Weyl group turns out to be cohomology of the classifying bundle  $BG$  of a compact matrix Lie group  $G$ .