

## ***CLUSTER ALGEBRAS SEMINAR***

**Speaker: Nick Ovenhouse**  
**University of Minnesota**



**Date:** Tuesday, October 29, 2019

**Time:** 12:00 PM

**Location:** 125 Hayes-Healy Hall

***Lecture Title:***

**Poisson Brackets for Grassmann Pentagram Maps**

***Abstract***

The pentagram map is a discrete dynamical system on polygons in the projective plane. Mari-Beffa and Felipe generalized this to polygons in a Grassmannian, and proved integrability by finding a Lax representation. We will show how to define a Poisson structure on the phase space by generalizing some combinatorial techniques of Gekhtman, Shapiro, Vainshtein, and Tabachnikov, and we produce integrals in involution under this Poisson structure, which correspond to the integrals coming from the Lax representation.