

**The University of Chicago**  
**ALGEBRAIC GEOMETRY SEMINAR**

Wednesday, April 22<sup>nd</sup>, 2015  
4:30 – 6:00 pm, Eckhart 312

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**Sequences of curves with growing gonality**

Given a smooth irreducible complex curve  $C$ , there are several isomorphism invariants one can attach to  $C$ . One invariant is the genus of  $C$ , that is, the number of handles in the corresponding Riemann surface. A subtler invariant is the gonality of  $C$ , that is, the minimal degree of a dominant map from  $C$  to  $\mathbb{P}^1$ . A lower bound for either invariant has diophantine consequences when  $C$  can be defined over a number field, but the ability to give non-trivial lower bounds depends on how  $C$  is presented. In this talk we will consider a sequence of finite unramified covers of  $C$  and give spectral criteria for the gonality of the curves in the sequence to tend to infinity.