

# BI-CO MATHEMATICS COLLOQUIUM

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## **"Quantitative Mostow Rigidity: Relating volume to topology for hyperbolic 3-manifolds"**

**Monday, April 16, 2018**

**Talk at 4:00 – H109**

**Tea at 3:30 – Foyer outside of H109**

### **Abstract:**

A celebrated result of Mostow states that if  $M, N$  are two closed, connected, orientable, hyperbolic  $n$ -manifolds which are homotopy equivalent in dimension  $n \geq 3$ , then  $M, N$  are equivalent up to isometry. This unique geometric-topological relationship has been the framework for many important results in the field, including notable results providing lower bounds on the volume of  $M$ , and results relating volume to homology (Culler-Shalen). After providing background, we will look at the case where the fundamental group of  $M$  has a property, "k-free," for  $k \geq 5$ , and discuss current work toward an improvement on the volume bound from the current known bound of 3.44 which holds for  $k \geq 4$ .

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