



University at Buffalo Spring Lectures in Geometry and Topology

April 23-24, 2026

Speaker: Brandis Whitfield (University of Wisconsin – Madison)

Lecture 1: The geometries of subgroups of the mapping class group
April 23 at 4 pm in 250 Mathematics Building

Mapping class groups of surfaces play a prominent role in understanding the geometry and topology of three-manifolds. These connections have inspired decades-long research programs toward a notion of geometric finiteness for mapping class subgroups. In this talk, we'll introduce the mapping class group, discuss methods of embedding different groups into it and how topological properties of a mapping class determine geometric data of its associated 3-manifold.

Lecture 2: Constructing reducibly geometrically finite subgroups of the mapping class group
April 24 at 4 pm in 122 Mathematics Building

A longstanding goal within low-dimensional geometry and topology is to establish parallels between the theory of Kleinian groups and subgroups of the mapping class group. Convex-cocompact subgroups of the mapping class group have been well-studied in the past few decades; current research aims to extend this analogy to the more general class of geometric finiteness. Dowdall–Durham–Leininger–Sisto introduce parabolically geometrically finite (PGF) subgroups of the mapping class group whose coned-off Cayley graphs, with respect to a collection of twist subgroups, quasi-isometrically embed into the curve complex. In joint work with Aougab, Bray, Dowdall, Hoganson and Maloni, we extend this definition to allow the coned-off subgroups to be more generally reducible, and produce plentiful examples of this behavior. Our examples include free products of reducible subgroups and the beloved right-angled Artin constructions of Clay–Leininger–Mangahas.



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