Department of Mathematics and Computer Science

Thursday, April 1, 2021, 4:00 pm

COLLOQUIUM TALK

Speaker: William Worden (Rice University)

Zoom Meeting (ID: 91501525063)

Hyperbolic 3-manifolds and polyhedral decompositions

Abstract:

In the early 1980's William Thurston revolutionalized the field of low-dimensional topology with his hyperbolization theorem and geometrization conjecture. His work brought to the forefront the study of hyperbolic 3-manifolds, and made possible computational tools like SnapPy that have led to further insight through experimentation. We will survey some of this history, explore some families of hyperbolic 3-manifolds that can be understood through their decompositions into polyhedra, and discuss some of our own work that relies on the structure of such polyhedra decompositions along with computational tools and experimentation.