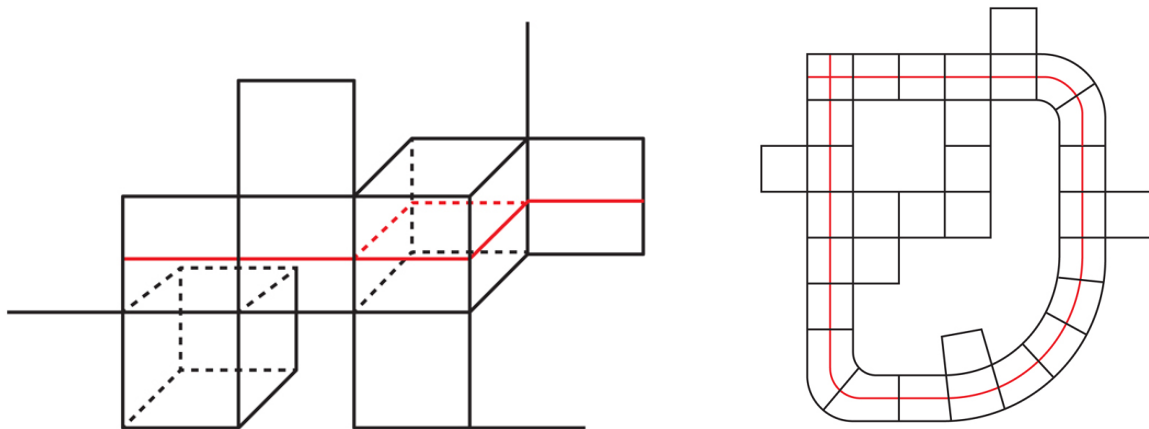


COLLOQUIUM

MATHEMATICS AND STATISTICS
QUEEN'S UNIVERSITY



THE CUBICAL ROUTE TO UNDERSTANDING GROUPS

Abstract. Cube complexes have come to play an increasingly central role within geometric group theory, as their connection to right-angled Artin groups provides a powerful combinatorial bridge between geometry and algebra. This talk will introduce nonpositively curved cube complexes, and then describe the developments that recently culminated in the resolution of the virtual Haken conjecture for 3-manifolds, and simultaneously dramatically extended our understanding of many infinite groups.

Daniel Wise (McGill University)

Daniel Wise earned his Ph.D. in Mathematics from Princeton University in 1996, with a thesis on “Non Positively Curved Squared Complexes, Aperiodic Tilings and Non-Residually Finite Groups”. After a NSF Postdoctoral Fellowship at UC Berkeley (1996-1997), he became H.C. Wang Assistant Professor at Cornell (1997-2000), Visiting Assistant Professor at Brandeis (2000-2001), and Assistant Professor at McGill University (2001-2004). Wise was promoted to Associate Professor in 2004, Full Professor in 2009, and appointed James McGill Professor in 2013. He has also served as Chair of the Institut Henri Poincaré (2015-2016). Prof Wise received the Oswald Veblen Prize in Geometry in 2013, and the Jeffery-Williams the CRM-Fields-PIMS Prizes in 2016. In 2014, he was ICM speaker and became Fellow of the Royal Society of Canada and, in 2016, he became Guggenheim Fellow. Wise’s research is dedicated to the theory of infinite groups – with applications to Geometry and Topology. Specifically, he studies geometric group theory, metric spaces of nonpositive curvature, residually finite groups, subgroup separability, 3-dimensional manifolds, coherence.

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2:30pm · OCTOBER 27 · 2017