UNIVERSITY AT ALBANY
State University of New York

Algebra/Topology Seminar

MATT ZAREMSKY

FINITENESS PROPERTIES OF
INFINITE SIMPLE GROUPS

Thursday, September 13, 2018
1:15 p.m. in ES-143

ABSTRACT. A group is said to be of type F_n if it admits a free, cellular action on a contractible CW complex with finitely many orbits of cells up to dimension n. These "finiteness properties" are a natural generalization of finite generation (F_1) and finite presentability (F_2). I will discuss joint work with Rachel Skipper and Stefan Witzel in which we exhibit the first known family of simple groups $G_1, G_2, \ldots$ such that G_n is of type F_{n-1} but not F_n. As a consequence we obtain the second known infinite family of quasi-isometry classes of simple groups (the first is due to Caprace and Rémy). The groups we use arise from Nekrashevych–Röver groups, which are mash-ups of self-similar automorphism groups of trees with Higman–Thompson groups. In this talk I will start from scratch, and not assume any familiarity with any of the above concepts.