

# Algebra/Topology Seminar

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## FINITELY GENERATED INFINITE SIMPLE GROUPS OF HOMEOMORPHISMS OF THE REAL LINE

Thursday, October 10, 2019  
1:15 p.m. in ES-143

ABSTRACT. A 1980 question of Rhemtulla asks whether there exist finitely generated infinite simple groups of homeomorphisms of the real line. Or equivalently, whether there exist finitely generated simple left orderable groups. In joint work with Hyde, we construct continuum many such examples (up to isomorphism), thereby resolving this question. In recent joint work with Hyde, Navas, and Rivas, we demonstrate that among these examples are groups that satisfy that all their actions on the real line are “globally contracting”—a desirable dynamical property. This resolves Question 4 from Navas’s 2018 ICM proceedings article concerning the existence of such groups. In this talk I will describe these groups and discuss their striking properties.