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Title: *Embeddings into Finitely Presented Simple Groups*

Abstract: In this talk, we describe a process whereby we can embed any hyperbolic group into a finitely presented infinite simple group. This gives a proof of what is, in some sense, the "typical" case of the Boone-Higman Conjecture of 1973 (that a finitely generated group G has a solvable word problem if and only if G can be embedded into a finitely presented simple group).

The talk will proceed in three roughly independent parts: A short history of the Boone-Higman Conjecture, a discussion of Hyperbolic groups and an embedding of these into the Rational group of Grigorchuk, Nekrashevych, and Suschanskii, and finally, a discussion of why the topological full group over this rational group is finitely presented and simple, or, at least provides a route to a further embedding in a group that is finitely presented and simple.

Joint with James Belk, Francesco Matucci, and Matthew Zaremsky.