

*Department of Mathematics,
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Food For Thought Seminar

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Subriemannian Geometry: When You Can't Get There From Here

Abstract:

A more accurate subtitle for this talk would have been "When You Can't Get There From Here By Going Thataway, You Got To Go Somewhere Else First," but that was too long to fit. A subriemannian manifold is a sort of space in which certain directions of travel are illegal. This can describe lots of problems involving systems with too many degrees of freedom. I'll talk about several examples, including rolling balls, falling cats, Carthaginian queens, and drunks with planimeters (if you don't know what a planimeter is, go ask John Eggers), and also about Chow's Theorem, which says that maybe you can get there from here after all. If time permits, there might be some applications to PDEs and some open problems mentioned. This talk will be accessible to anyone who has heard of a smooth manifold.

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