**MATT SPRAGGE**, Simon Fraser University

*On the well-posedness of the Boltzmann equation for kinetic systems*

In this talk we introduce the Boltzmann equation; a nonlinear partial integro-differential equation widely used to model the behaviour of dilute systems of interacting particles. Typical examples of such systems include dilute gases or plasmas, although Boltzmann-type equations have also been applied to study self-organizing behaviours within groups of living organisms, as well as the redistribution of wealth in simplified market economies. However, while its applications are, by now, widespread, the Boltzmann equation still presents numerous problems of great mathematical interest. In particular, the global existence and uniqueness of solutions has yet to be affirmed in general and it is this problem that we focus on in this presentation. A survey of known results as well as some recent progress regarding this problem will be discussed.