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**RYAN LUKEMAN**, St. Francis Xavier University  
*Transition Dynamics in Collective Animal Motion*

One striking feature of collective motion in animal groups is a high degree of alignment among individuals, generating polarized motion. When order is lost, the dynamics process of reorganization provides information about both the nature of the interaction rules governing the motion of individuals, and how these rules affect the functioning of the collective.

In this talk, I describe a dataset of trajectories of collectively swimming surf scoters (an aquatic duck) during transitions between order and disorder. The data is used to determine signatures of the transition, and what inter-individual interactions permit efficient recovery of order in these groups. Results suggest an adaptive explanation for the individual rules adopted by group members: those which permit flexibility and efficient recovery of order from a perturbation.