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**KATHARINE FAULKNER**, University of British Columbia

*Modelling Glucose Regulation: Lipotoxicity and the Progression to Type 2 Diabetes*

As an individual moves from healthy to pre-diabetic to diabetic, there are many physiological changes that occur, but it is not known which of these changes are the main drivers of the progression to type II diabetes. In this talk, I will describe a simple model for glucose regulation and how modeling can help determine which of these physiological changes are capable of pushing an individual from healthy to diseased. By framing this problem in terms of bifurcations, we can find models that create qualitative changes to the system that allow for movement between healthy and diseased states. We will examine a model that includes the toxicity of lipids in the pancreas, and find a bifurcation that describes the progression to type II diabetes.