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**Title:** Describing complex processes

**Abstract:** There has long been a gulf between most process modellers and statisticians. While statistics is the premier science for the description of phenomena and the inference about these phenomena from observed data it sits uneasily with process models which endeavour to include "key" phenomena in models but often leave the parametrisation and final reconciliation of observation and model to qualitative techniques.

In this talk I discuss some examples from my work which explore aspects of these issues. In particular I will discuss how we can statistically represent processes in a coherent and empirical way. I consider examples involving zero inflated count data, modelling complex quarantine risks from importation of goods and modelling the probability of eradication of pests.