Oxford Mathematics Public Lectures
Alison Etheridge

30.06.16
# Modelling genes

## The backwards and forwards of mathematical population genetics

How can we explain the patterns of genetic variation in the world around us? The genetic composition of a population can be changed by natural selection, mutation, mating, and other genetic, ecological and evolutionary mechanisms. How do they interact with one another, and what was their relative importance in shaping the patterns we see today?

Whereas the pioneers of the field could only observe genetic variation indirectly by looking at traits of individuals in a population, researchers today have direct access to DNA sequences. But making sense of this wealth of data presents a major scientific challenge and mathematical models play a decisive role. This lecture will distil our understanding into workable models and explore the remarkable power of simple mathematical caricatures in interrogating modern genetic data.

**Alison Etheridge FRS** is Professor of Probability in the University of Oxford.

5–6pm Thursday 30 June 2016
Lecture Theatre 1
Mathematical Institute, Oxford

Register at external-relations@maths.ox.ac.uk

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