

# Statistical Applied Mathematics at Bath



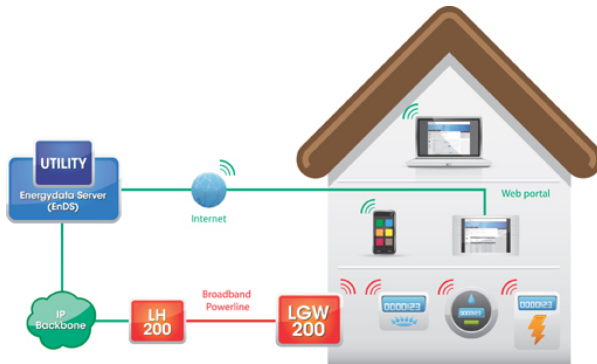
# Statistical Applied Mathematics

SAMBa will create a new generation of interdisciplinary mathematicians, trained for careers in both university and UK industry focusing on the fusion of statistics, stochastics and computation in industrial and applied mathematics.

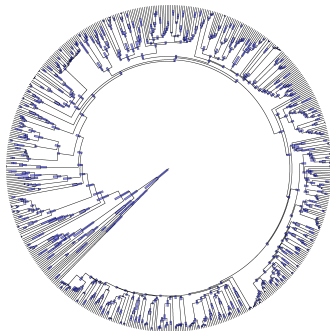
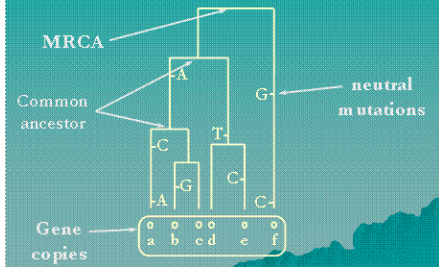
Their primary strengths will be:

- Ability to distill industrial and interdisciplinary problems into mathematical ones, and solve them.
- Breaking the cultural separation between applied mathematics, numerical analysis and statistics.
- Preparation to work in a world of combining models and big data.

# Statistical Applied Mathematics

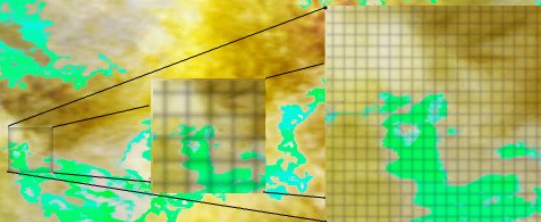


# Coalescent



# Statistical Applied Mathematics

## Multilevel Monte Carlo Methods for Elliptic Problems with Applications to Radioactive Waste Disposal



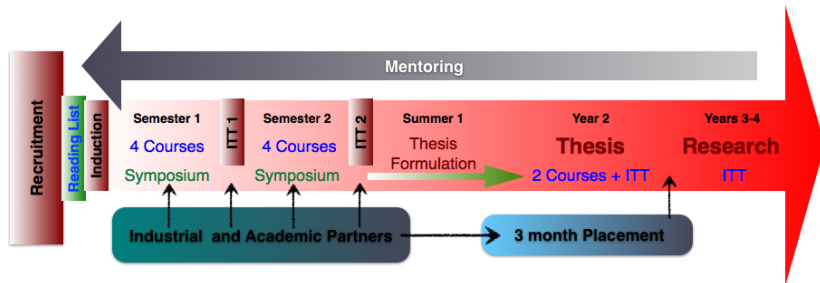
# Environment

- One of 12 EPSRC Centres for Doctoral Training in the UK focused on or related to mathematical sciences.
- 50 fully funded studentships over five years based around a 1+3 Ph.D. training model (MRes + PhD).
- Further students will be funded by industry and international sources
- 7 students started Sept 2014. Target of at least 11 students for 2015 intake.
- Good links with industrial partners for collaborative projects, placements and studentships.
- Physically housed at the Department of Mathematical Sciences, University of Bath.
- SAMBa is led by academics Professors Andreas Kyprianou (Stochastics), Paul Milewski (Applied Mathematics) and Simon Wood (Statistics) and manager Dr. Susie Douglas.

# SAMBa industrial partners



# Student Progression through SAMBa

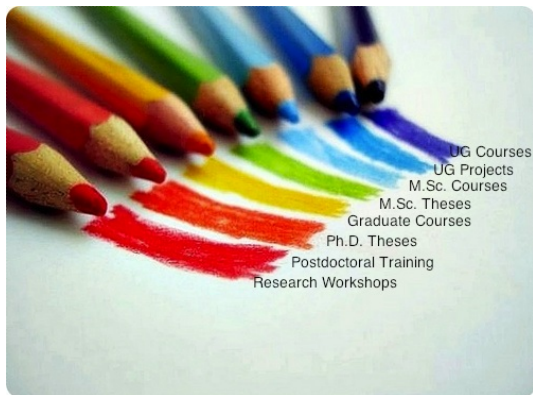




# Prob-L@B and UK probability

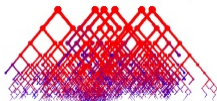


# Prob-L@B is a mini-CDT

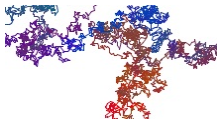


- 8 core probabilists + 8 associated (numerical analysis/math bio/etc)
- 2-5 research fellows (postdocs)
- 12+ Ph.D. cohort
- Currently £1M research funding excluding PhD scholarships

# Research themes



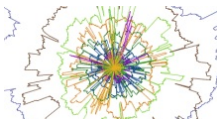
Branching Structures



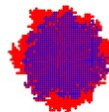
Brownian motion



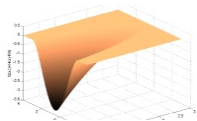
Self-organised criticality



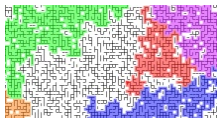
Lévy processes



Interacting particle systems



Mathematical Finance



Percolation



Random Graphs

# Probability groups in The UK

- Most UK universities have probability research groups.
- Some groups have a focus on a particular speciality within probability: e.g. Stochastic Analysis, Financial Mathematics or Actuarial Mathematics.
- The UK is world leading in probability theory and its applications and there is exceptional quality and a lot of activity.

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# And finally.....

- Bath has a regular Ph.D. programme, funded by EPSRC DTG and Faculty scholarships covering all areas of mathematics
- $\exists$  two masters programmes in Bath
  - M.Sc. Modern Applications of Mathematics
  - M.Sc. Mathematical Sciences
- Bath is a great place to live - all the social benefits of a big city in a small town

