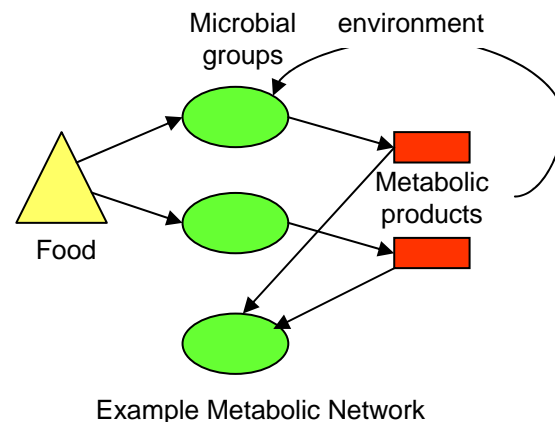


Complex Adaptive Systems: modelling adaptation and diversity in microbial networks

The Research Programme: Complex adaptive systems offer an exciting opportunity for research at the interface between mathematics and biology. This project provides an excellent opportunity for a candidate wishing to develop a research career in the field of mathematical biology and gain expertise in computational, mathematical and analytical methods.

Initial work will develop systems of nonlinear differential equations to investigate how the network characteristics of an ecosystem affects its ability to adapt to environmental change. This work may then be applied to methane production by microbial communities in the stomachs of sheep/cows. Since methane is a greenhouse gas this has important implications for climate change. Furthermore the model systems can be used to investigate how microbial communities may adapt to changes in diet and therefore assist with strategies to reduce methane production.



What we need:

We wish to appoint a mathematical graduate, preferably with computational skills, with a Masters level or top honours qualification. The studentship will be funded jointly by Heriot-Watt University and Biomathematics and Statistics Scotland (BioSS) under the supervision of Dr Andy White and Dr Helen Kettle. The department of mathematics at Heriot-Watt has a very strong mathematical biology group and is internationally renowned for applied mathematics research, and BioSS is one of the leading European research groups in the application of mathematics and statistics in the biological sciences. The successful candidate will benefit from a lively and supportive environment for mathematical research stimulated by close links with biological scientists.

Contact Details: The studentship will be funded for up to 3.5 years and is open to applicants from the European Union. It will pay full fees and a stipend in the region of £13,290 p.a. tax free for 2012. There is also a fund to attend research workshops and conferences. To apply please email your CV with the contact details of 2 referees to Dr Andy White (A.R.White@hw.ac.uk) & Dr Helen Kettle (helen@bioss.ac.uk).