

**Mathematical Sciences and EPSRC Strategic Themes:
*Energy and The Digital Economy***

Wednesday 25 March 2009

Woburn House Conference Centre, London WC1H 9HQ

The workshop aims to encourage mathematical sciences researchers to explore opportunities to fund their research through the multidisciplinary research 'themes' identified in EPSRC's strategic plan. EPSRC Theme leaders will be in attendance to engage in discussion and speakers will provide examples of how they have been able to fund their cutting edge research in this way.

Break-out groups will explore opportunities in more detail and inform further work in this area.

Programme

- | | |
|--|------------------|
| 9.30 Registration and refreshments | Tavistock |
| 10.00 Welcome and introduction from Conference Chair <i>Professor Ursula Martin (Vice-Principal for Science & Engineering, QMUL)</i> | Main Hall |
| Session 1 - Mathematical Sciences and 'Energy' | Main Hall |
| 10.05 An introduction to the Energy Theme and opportunities for mathematical sciences <i>Rachel Bishop (Energy Theme Director, EPSRC)</i> | |
| 10.20 Financial mathematics and stochastic storage: how PDEs can be used to manage the unpredictability of wind power <i>Professor Peter Duck (University of Manchester)</i> | |
| 10.40 Novel mathematics for the radioactive waste problem <i>Professor Andrew Cliffe (University of Nottingham)</i> | |
| 11.00 Questions and Discussion | |
| 11.25 Refreshment Break | Tavistock |
| Session 2 - Mathematical Sciences and 'The Digital Economy' | Main Hall |
| 11.45 An introduction to the Digital Economy Theme and opportunities for mathematical sciences <i>John Hand (Digital Economy Theme Director, EPSRC)</i> | |
| 12.00 Some Maths from the Telecommunications Industry <i>Dr Steve Babbage (Vodafone)</i> | |
| 12.20 Mathematical Sciences in the Digital Economy theme at the University of Reading <i>Dr Roland Potthast (University of Reading)</i> | |
| 12.40 Questions and Discussion | |

| | |
|---|------------------|
| 13.00 Lunch | Tavistock |
| Session 3 - Support mechanisms | Main Hall |
| 14.00 EPSRC mechanisms to help researchers collaborate on theme proposals <i>David Harman (Mathematical Sciences Programme Manager, EPSRC)</i> | |
| 14.10 What can the INI offer to support collaboration? <i>Dr Ben Mestel (Deputy Director, Isaac Newton Institute)</i> | |
| 14.20 Questions | |
| 14.30 Break-out Groups <i>(details attached)</i> | Various |
| A. Opportunities for mathematical sciences in the Digital Economy <i>Main Hall</i> | |
| B. Opportunities for mathematical sciences in Energy <i>Boardroom</i> | |
| C. How can we convince researchers to engage with these themes? How can we promote the role of mathematical sciences research in these areas to other subjects and industry? <i>Mezzanine</i> | |
| 15.30 Plenary – feedback and reflections | Main Hall |
| 16.00 Refreshments and networking | Tavistock |
| 17.00 Conference close | |

Breakout Group A – Opportunities for mathematical sciences in the Digital Economy

Location: Main Hall

Leader: Edward Stansfield

Aim

- To explore what role mathematical sciences research can play in various aspects of the Digital Economy theme

Questions to be explored

- What are the challenges in the Digital Economy theme identified in the morning session?
- What role can mathematical sciences play in problems relating to e.g.:
 - Large datasets and data mining
 - Data security
 - Complex systems
 - Bioinformatics
 - Algorithms
 - Video, graphics and animation

Breakout Group B – Opportunities for mathematical sciences in Energy

Location: Boardroom

Leader: Chris Dent

Aim

- To explore what role mathematical sciences research can play in various aspects of the Energy theme

Questions to be explored

- What are the challenges in the energy theme identified in the morning session?
- What role can mathematical sciences play in problems relating to e.g.:
 - Energy production
 - Energy storage
 - Energy usage and efficiency
 - Climate change

Breakout Group C - How can we convince researchers to engage with these themes? How can we promote the role of mathematical sciences research in these areas to other subjects and industry?

Location: Mezzanine

Leader: Terry Lyons

Aim

- To inform development of general guidance for researchers and strategy for increasing engagement with EPSRC themes

Questions to be explored:

- What factors might dissuade researchers from engaging with these and other EPSRC themes? How might these be overcome?
- How can opportunities for funding be communicated most effectively?
- What in does the mathematical sciences community have to offer to researchers in other subjects and industry? How can this expertise be promoted to prompt collaboration?
- How can we build on existing mechanisms that support collaboration?