



The Royal Academy  
of Engineering

UK Focus for  
Biomedical Engineering

## Engineering better health

Conference, annual lecture and dinner

Wednesday 19 November 2008

The Royal Society of Medicine  
1 Wimpole Street  
London  
W1G 0AE



# Engineering better health

Wednesday 19 November 2008

The UK Focus for Biomedical Engineering provides a forum through which the principal organisations concerned with biomedical engineering can communicate, debate and work together to improve the diagnosis and treatment of major medical conditions. The UK Focus is nearing its 20-year anniversary and to celebrate this we have organised a one-day conference and evening lecture. The purpose is twofold: to explore the impact of biomedical engineering on society over the last 20 years and to examine the future of engineering in healthcare.

## Programme

9.25am **Welcome**

*Professor Anthony Unsworth FEng, Chair,  
UK Focus for Biomedical Engineering*

9.30am **Keynote lecture: The past, present and future impact of engineering in healthcare**

*Professor David Delpy FEng FMedSci FRS, Chief Executive, EPSRC*

9.55am **A patient's perspective**

*Mr John Prové*

## Session 1 - Detection and imaging

10.05am **Ultrasound imaging**

*Professor Peter Wells FEng FMedSci FRS, Cardiff University*

10.30am **Watching the infant brain grow with magnetic resonance imaging**

*Professor David Edwards FMedSci, Imperial College, MRC Clinical Sciences Centre,  
London*

10.55am **Break**

## Session 2 - Surgery

11.15am **Robotic and computer assisted surgery**

*Professor Brian Davies FEng, Imperial College London*

11.40am **From engineering dream to clinical cardiovascular reality**

*Professor Gianni Angelini, University of Bristol*

12.05pm **Pushing boundaries in bioengineering the musculo-skeletal system**

*Professor Patrick Prendergast, Trinity College Dublin*

12.25pm **Discussion (morning speaker panel)**

1.00pm **Lunch**

### Session 3 - Therapy and patient monitoring

- 2.00pm **Patient Monitoring in and out of hospital**  
*Professor Lionel Tarassenko FEng, University of Oxford*
- 2.25pm **Ultrasound for cancer therapy: a non-invasive treatment for deep-seated tumours**  
*Dr Gail ter Haar, Institute of Cancer Research*
- 2.50pm **Break**

### Session 4 - The future of healthcare

- 3.10pm **Regenerative medicine**  
*Professor David J Williams FEng, Loughborough University*
- 3.35pm **Towards disposable healthcare devices: a paradigm shift**  
*Professor Christofer Toumazou FEng FRS, Institute of Biomedical Engineering, Imperial College London*
- 4.00pm **Developments in medical imaging**  
*Professor Sir Michael Brady FEng FMedSci FRS, University of Oxford*
- 4.25pm **Discussion (afternoon speaker panel)**
- 5.05pm **Close and drinks reception**

## Annual lecture and dinner

- 5.30pm **From diagnostics to synthetic biology: how micro and nanotechnologies will revolutionise biomedicine**  
*Professor Jon Cooper FEng FRSE, University of Glasgow*
- 6.15pm **Questions**
- 6.30pm **Drinks reception**
- 7.00pm **Dinner**  
*Speech by Professor Duncan Dowson CBE FEng*
- 10.00 **Close**

# The Royal Academy of Engineering

As Britain's national academy for engineering, we bring together the country's most eminent engineers from all disciplines to promote excellence in the science, art and practice of engineering. Our strategic priorities are to enhance the UK's engineering capabilities, to celebrate excellence and inspire the next generation, and to lead debate by guiding informed thinking and influencing public policy.

The Academy's work programmes are driven by three strategic priorities, each of which provides a key contribution to a strong and vibrant engineering sector and to the health and wealth of society.

## Enhancing national capabilities

As a priority, we encourage, support and facilitate links between academia and industry. Through targeted national and international programmes, we enhance – and reflect abroad – the UK's performance in the application of science, technology transfer, and the promotion and exploitation of innovation. We support high quality engineering research, encourage an interdisciplinary ethos, facilitate international exchange and provide a means of determining and disseminating best practice. In particular, our activities focus on complex and multidisciplinary areas of rapid development.

## Recognising excellence and inspiring the next generation

Excellence breeds excellence. We celebrate engineering excellence and use it to inspire, support and challenge tomorrow's engineering leaders. We focus our initiatives to develop excellence and, through creative and collaborative activity, we demonstrate to the young, and those who influence them, the relevance of engineering to society.

## Leading debate

Using the leadership and expertise of our Fellowship, we guide informed thinking, influence public policy making, provide a forum for the mutual exchange of ideas, and pursue effective engagement with society on matters within our competence. The Academy advocates progressive, forward-looking solutions based on impartial advice and quality foundations, and works to enhance appreciation of the positive role of engineering and its contribution to the economic strength of the nation.



The Royal Academy of Engineering promotes excellence in the science, art and practice of engineering.

Registered charity number 293074

The Royal Academy of Engineering  
3 Carlton House Terrace, London SW1Y 5DG

Tel: 020 7766 0600

Fax: 020 7930 1549

[www.raeng.org.uk](http://www.raeng.org.uk)