



The Royal Academy  
of Engineering

UK Focus for  
Biomedical Engineering

# Towards personalised medicine: integration of the bio-profile

18 July 2006, 2pm for 2.30pm  
29 Great Peter Street, London SW1P 3LW



# Towards personalised medicine: integration of the bio-profile

**Advances in biomedical engineering, data mining and genetics have set the challenge of tailoring treatment to the individual patient. This briefing reviews progress to-date and emerging trends in the integration of the complete bio-profile, comprising genetic markers through physiological measurements and clinical signs, with the ultimate aim of achieving personalised patient care.**

The briefing will be chaired by Professor Paulo Lisboa, member of the UK Focus for Biomedical Engineering. The programme will consist of three 30-minute presentations, covering different aspects of the topic.

**Professor Paulo Lisboa** is Head of Graduate School for Liverpool John Moores University and Professor in Industrial Mathematics in the School of Computing and Mathematical Sciences. He will introduce the meeting with a presentation on the road map for integration of multimodal data for decision support in cancer, reflecting the work of the European BIOPATTERN Network of Excellence.

**Dr Richard Saumarez** trained in Medicine at Guy's Hospital and had post-graduate training in Biomedical engineering at Imperial College. He is currently in the departments of Medicine and Engineering at the University of Cambridge. His presentation will describe how signal processing techniques are used to make deductions about the abnormalities in the heart that predispose to sudden death.

**Dr Elaine Holmes** obtained a BSc in Biology and a PhD in Chemistry from London University before taking up a post doctoral position in metabonomics, funded by GlaxoSmithKline. She joined the division of Biomedical Sciences at Imperial College as a lecturer in 1998. Her talk will focus on how best to understand fundamental gene-environment interactions and their impact on the risk and prevalence of major diseases.

**Dr Leonard Fass** is the Director of Academic Relations at GE Healthcare. He graduated with first class honours in Electrical Engineering and was granted a PhD in Materials Science at Imperial College. He will discuss convergent technologies for the treatment of diseases and the shift from a post-symptomatic and systemic treatment model to a pre-symptomatic and targeted one.

## Programme

2.00pm	Registration
2.30pm	Chairman's introduction, Professor Paulo Lisboa, Liverpool John Moores University
2.45pm	An integrated approach to sudden cardiac death Dr Richard Saumarez, Papworth Hospital and Cambridge University
3.15pm	Metabonomics: A Tool for 21st Century Medicine Dr Elaine Holmes, Reader in Biological Chemistry, Imperial College London
3.45pm	Converging Technologies in Disease Management Dr Leonard Fass, Director, Academic Relations, GE Healthcare
4.15pm	Discussion and concluding remarks
5.30pm	Drinks reception
7.00pm	Close

# Towards personalised medicine: integration of the bio-profile

**I wish to book a place to attend the briefing seminar on 18 July 2006  
(2.30pm to 5.30pm)**

**I will/will not\* attend the drinks reception which will follow the seminar  
(5.30pm to 7.00pm)**  
*(\*delete as appropriate)*

Title: \_\_\_\_\_

First Name: \_\_\_\_\_

Surname: \_\_\_\_\_

Honours: \_\_\_\_\_

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This form may be photocopied if you wish to book more than one place.

The Academy is keen to receive feedback on the value of its activities. Please tick this box if you are content for us to contact you by email after this event as part of our evaluation programme and to inform you of future UK Focus for Biomedical Engineering Briefing Seminars. Please also ensure that we have your correct email address.

Please return to:

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# 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.

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## UK Focus for Biomedical Engineering

The UK Focus for Biomedical Engineering provides a forum through which the principal organisations concerned with biomedical engineering can communicate, debate and act jointly upon issues which affect the field as a whole. It seeks to influence high level decision makers in the Department of Health, central government, research funding sources and industry by highlighting the important contribution that biomedical engineering makes to healthcare and by encouraging industry to exploit the opportunities available in this field.



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

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