



HARRY PERKINS INSTITUTE
OF MEDICAL RESEARCH



PERKINS Seminar Series

THURSDAY 12 OCTOBER

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Professor Jeffrey Bamber

Team Leader

Institute of Cancer Research

"Ultrasound research in cancer medicine"

Professor Jeff Bamber's medical ultrasound interest began with an MSc developing microthermal measurement of acoustic power in diagnostic ultrasound beams, and continued with a PhD on the ultrasonic characterisation of normal and cancerous tissues.

Later work included:

- Improving understanding of the physics of ultrasound image formation and perception
- Inventing and evaluating adaptive speckle noise reduction for ultrasound images
- Initiating the use of Doppler ultrasound to evaluate tumour response and microbubble kinetics for assessing tumour vasculature
- Creating the first elasticity image using ultrasound
- Inventing and commercially disseminating freehand strain imaging of tissue elasticity
- Reconstruction of Young's modulus from strain images and its use for radiation dosimetry
- Extracting mobile fluid and permeability information from strain images
- Co-inventing a microbubble and retrovirus method for highly targeted gene therapy
- Establishing ultrasound and optical methods for skin cancer diagnosis
- Working on novel imaging and tissue tracking methods to guide and monitor high-intensity ultrasound tissue ablation and radiotherapy.

His current and planned research aims to increase the functional and molecular imaging capability of ultrasound, thus providing new tools to experimental cancer biology and helping to personalise cancer treatment by bringing the cost-effectiveness, safety, repeatability, speed and convenience of ultrasonic methods to clinical problems such as assessing tumour aggressiveness and response, and guiding treatment.

Jeff is also a Senior Tutor of the Institute of Cancer Research. He has honorary appointments with the Royal Marsden NHS Trust and the Royal Free Hampstead NHS Trust. He greatly values the ability to collaborate with medical colleagues in these hospitals, and colleagues in the biological sciences in the ICR, to carry out clinical and preclinical studies.

He is a Member of the Institute of Physics, the British Medical Ultrasound Society, the Institute of Electrical and Electronic Engineers, the Society of Photo-optical Instrumentation Engineers and the International Society for Biophysics and Imaging of the Skin.

He is past president of the International Association for Breast Ultrasound and past vice-president of the International Society of Skin Imaging. He has been a visiting scientist at the Tokyo Institute of Technology, Japan, and the Medical Products Group, Imaging Systems, Hewlett-Packard, USA.

12:00pm till 1:00pm
followed by a light lunch

For more information please contact Dr Brendan Kennedy

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MCCUSKER AUDITORIUM, HARRY PERKINS INSTITUTE OF MEDICAL RESEARCH, NORTH CAMPUS

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