Acoustic Reflections: advanced medical ultrasound imaging and parallels in the mining and construction industries

A public lecture by Professor Jeffrey Bamber, Head, Ultrasound and Optical Imaging Physics, The Institute of Cancer Research London and UWA Institute of Advanced Studies Gledden Short Stay Visiting Fellow.

Compared with other medical imaging technologies, ultrasound is low cost, transportable, rapid, safe and comfortable for the patient. It offers excellent 3D soft tissue visibility, good blood flow information and high frame rate. It has already made enormous contributions to medicine but the potential for further impact is truly exciting.

This lecture will draw on the author's work in cancer research to look at recent progress, mentioning parallels that exist because of lessons learnt from mining and construction industries.

A very promising area is mechanical property imaging, known as elastography. A key aim of Professor Bamber's visit to Perth is to collaborate with The University of Western Australia on this topic. As in geophysics, different types of mechanical wave travel in tissue at different speeds, each providing importantly different information. In medicine, we use a pressure wave (ultrasound) to watch the progress of a shear wave and make images of its speed. This is proving important for diagnosis and assisting treatment of an astonishingly wide range of diseases.

A full abstract of the presentation is available online at www.ias.uwa.edu.au/lectures/bamber

About Professor Bamber

Jeff Bamber has been head of Ultrasound and Optical Imaging Physics at The Institute of Cancer Research London, UK since 1986. He is Professor in Physics Applied to Medicine and Senior Tutor, and an honorary Medical Physicist within the Royal Marsden and other London hospitals. He has a BSc Physics (University of Kent at Canterbury), MSc Biophysics and Bioengineering (University of London), and PhD Biophysics (University London). He has contributed to a wide range of research areas and had sabbaticals at the Tokyo Institute of Technology, Japan, and Hewlett-Packard, Andover, USA. Several of his inventions have been translated to become widely available on commercial ultrasound systems. He is past president of the International Association for Breast Ultrasound, past vice-president of the International Society for Skin Imaging and serves as scientific advisor to a number of companies.

Event Details

When: Thursday 19 October 2017, 6pm-7pm

Where: Fox Lecture Theatre, Arts Building, The University of Western Australia

Cost: Free

RSVP: online via **www.ias.uwa.edu.au/lectures/bamber**

The Institute of Advanced Studies

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