

## HKES Seminar

# Guiding clinician attention with advanced auditory patient monitoring systems

### Prof. Penelope Sanderson

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School of Information Technology and Electrical Engineering,  
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Date: 1<sup>st</sup> April 2015 (Wed)

Time: 6pm – 7:30pm

Venue: Y5-302, 5/F, Academic 1,  
City University of Hong Kong

#### Abstract:

Many clinicians complain that alarms from medical electrical equipment are often uninformative and that auditory alarm sounds can be annoying and even confusing. Recently, there have been concerns that so-called "alarm fatigue" may sometimes lead clinicians to ignore or silence auditory alarms; fatal consequences have been reported in some high-profile cases. In this talk I will present alternative approaches to providing information to clinicians about the well-being of their patients, in a way that provides reassurance in the periphery of a clinician's attention when all is well, but that brings information into the clinician's focal awareness if a patient's status starts to deteriorate. To provide examples, I will outline recent research on how alternative forms of auditory display might extend the principles underlying variable-tone pulse oximetry (the audible "heart monitor") to help clinicians monitor the anaesthetised patient or care for the preterm neonate. I will also discuss how auditory display might be extended to the monitoring of multiple patients by one clinician. Approaches to clinical evaluation will also be discussed.

#### Speaker bio:

Penelope Sanderson is Professor of Cognitive Engineering and Human Factors at The University of Queensland in Brisbane, Australia, where she has appointments in the School of Psychology, the School of Information Technology and Electrical Engineering, and the School of Medicine. She heads the Cognitive Engineering Research Group, whose researchers investigate human-system integration in healthcare, aviation, and defence contexts. Sanderson is a Fellow of the Academy of the Social Sciences in Australia, and of the Human Factors and Ergonomics Society (HFES) in the USA, where she started her career at University of Illinois at Urbana-Champaign. Sanderson was awarded the HFES Distinguished International Colleague Award and the Paul M. Fitts Educator Awards, as well as twice winning the HFES Jerome H. Ely Award for the best paper in Human Factors. She was also awarded the American Psychological Association's Franklin V. Taylor Award for Distinguished Contributions to Engineering and Applied Experimental Psychology. Sanderson's main contributions to human factors have been in theory and application of principles for visual and auditory information systems and she has collaborated with the healthcare, power generation, defence, and aviation industries in her research.

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