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5:30 PM - 6:30 PM  
Li Ka Shing Center - Room LK120

"Molecular Imaging with Ultrasound:  
Basic Concepts and Emerging Clinical Applications"

ABSTRACT  Ultrasound imaging is a widely available, relatively inexpensive, and real-time imaging modality that does not expose patients to radiation and which is the first-line imaging modality for assessment of many organs. Through the introduction of ultrasound contrast agents, the sensitivity and specificity of ultrasound for detection and characterization of focal lesions has been substantially improved. Recently, targeted contrast-enhanced ultrasound imaging (ultrasound molecular imaging) has gained great momentum in preclinical research by the introduction of ultrasound contrast agents that are targeted at molecular markers over-expressed on the vasculature of certain diseases. By combining the advantages of ultrasound with the ability to image molecular signatures of diseases, ultrasound molecular imaging has great potential as a highly sensitive and quantitative method that could be used for various clinical applications, including screening for early stage disease (such as cancer), characterization of focal lesions, quantitative monitoring of disease processes at the molecular level, assisting in image-guided procedures, and confirming target expression for treatment planning and monitoring. In this talk, the concepts of ultrasound molecular imaging are reviewed along with a discussion on current applications in preclinical and clinical research.

Global Learning Objectives
- Critically analyze research, guidelines and appropriate use criteria to develop best-practice diagnosis and treatment strategies
- Evaluate latest innovations in imaging to assess safety and effectiveness

Session Learning Objectives
- To understand the acquisition and quantification principles of ultrasound molecular imaging
- To understand the characteristics and biodistribution of molecularly targeted ultrasound contrast agents
- To understand the role of ultrasound molecular imaging in preclinical and clinical applications

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