THE HONG KONG POLYTECHNIC UNIVERSITY 香港理工大學

Department of Health Technology and Informatics 醫療科技及資訊學系

Hong Kong Association of Medical Physics 香港醫學物理學會

HTI Seminar

Recent Progress in Radiotherapy Planning and Delivery: 4π, VMAT and Robotics

Prof. Ke Sheng

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Department of Radiation Oncology,
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Date:	**25 March 2019 (Monday)**
Time:	**7:00 p.m. – 8:00 p.m.**
Venue:	**Room Y303, 3/F**
	Lee Shau Kee Building, PolyU

Abstract

There is a constant need to deliver better and more efficient radiotherapy to patients. Recent advances in optimization methods, computer vision and robotics afford the potential for markedly improved radiotherapy treatment. The presentation will provide an overview of these advances and their applications. Specifically, the following topics will be covered. 1. 4π radiotherapy exploring the non-coplanar beam geometry space for more conformal dose distribution. 2. Non-progressive sampling volumetric modulated arc therapy (VMAT) that is more robust and efficient than the existing progressive sampling VMAT methods. 3. Breakthroughs in hardware development to fully take advantage of the advanced treatment planning and delivery techniques. Status of clinical applications and trials will be discussed.

Biography

Prof. Sheng received his B.S. in Astrophysics from the University of Science and Technology of China, and Ph.D. in Medical Physics from the University of Wisconsin, Madison in 2004. He was an Assistant and then an Associate Professor at the University of Virginia before moving to the University of California, Los Angeles in 2011, where he is currently a Tenured Professor and the Associate Vice Chair of the Department of Radiation Oncology. Prof. Sheng has published over 100 peer-reviewed scientific papers on topics including treatment planning, image processing, and radiobiology. He has been awarded eight NIH grants and two DOE grants as PI or co-PI. Prof. Sheng is an AAPM Fellow.

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