

3D Printing to Support Surgery and Interventions

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Abstract

3D printing offers many advantages including low cost, a wide range of materials, a direct link to computer software and easy deployment. It is therefore not surprising that the use of this technology in healthcare is an active area of research and development with many commercial solutions already deployed, for example in dental practice. At King's Health Partners, we are using 3D printing for a wide range of applications such as pre-operative planning, surgical and interventional training, healthcare education, patient implants and medical robotics. This presentation will highlight our experience and show how 3D printing is positively impacting patient care, research and education at King's.

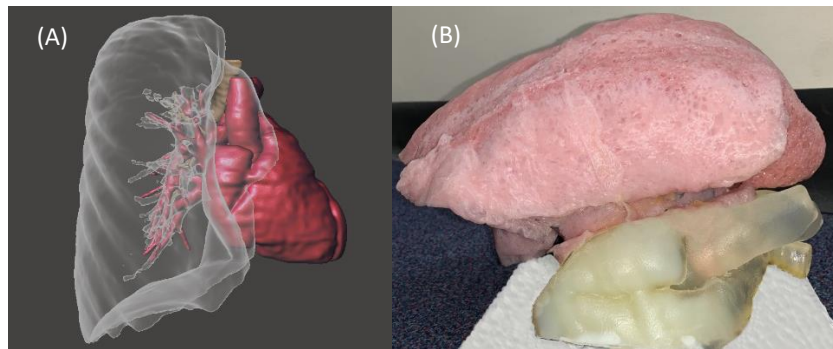


Figure 1: (A) Digital CAD model of thoracic surgery training phantom (B) Physical model of training phantom created using 3D printing.

Biography

Professor Rhode obtained his bachelor's degree in Basic Medical Sciences and Radiological Sciences at Guy's & St. Thomas' Hospitals Medical School in 1992 and his doctorate in Medical Physics from the Department of Surgery, University College London in 2006. He has worked in the field of healthcare technology research at King's College London since 2001 and is currently Professor of Biomedical Engineering and Head of Education for the School of Biomedical Engineering and Imaging Sciences. His current research interests include image-guided interventions, intelligent mechatronics systems for interventions and ultrasound imaging, 3D printing in healthcare and pedagogy for biomedical engineering. Prof. Rhode has more than 350 publications in journals, conference proceedings, book chapters and patents.

