9 Dec 2015, 2pm (Ingram Lecture Theatre)	Adrien Desjardins (UCL)	Next Generation Medical Devices with Integrated Optical and Ultrasonic Sensors

Recent advances in optical sensing techniques have the potential to transform medical devices and minimally invasive procedures. Traditionally, medical devices such as needles and catheters have been passive conduits for accessing tissue targets. There is currently significant interest in integrating sensors that provide real-time information about the micro-structure and molecular composition of biological tissue. These new active medical devices can also interact with image guidance modalities such as ultrasound or X-ray to identify their locations within patients. This talk will particular focus on techniques involving optical transmission and reception of ultrasound, photoacoustic imaging, ultrasonic medical device tracking, and optical spectroscopy.