ROGER D. KAMM   CV

PARTICIPANT AT:

FUTURE TOOLS FOR BIOMEDICAL RESEARCH. IN VITRO, IN SILICO AND IN VIVO DISEASE MODELING

October, 1st-2nd, 2015, Barcelona

Roger D. Kamm, Cecil and Ida Green Distinguished Professor of Biological and Mechanical Engineering, Massachusetts Institute of Technology, Baltimore, USA

Roger D. Kamm is the Cecil and Ida Green Distinguished Professor of Biological and Mechanical Engineering at MIT. He is the recipient of numerous awards including the ASME Lissner Award and the Europen Society of Biomechanics Huiskes Medal. He was elected to be a member of the National Academy of Medicine in 2010. A primary objective of Kamm's research group is the application of fundamental concepts in fluid and solid mechanics to better understand essential biological and physiological phenomena. His lab focuses on the molecular mechanisms of cellular force sensation, and the development of new microfluidic technologies for vascularized engineered tissues and models of metastatic cancer.

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ABSTRACT

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Emergence of Organ-on-a-Chip Technologies: The Hype and the Reality

The use of microfluidic technologies to create three-dimensional organ models with multiple organ-specific or even patient-specific cell types has experienced tremendous growth since the early microfluidic cell culture systems of about ten years ago. Today, such systems are increasingly capable of recapitulating certain aspects of in vivo biology, with potential applications in drug screening or in the creation of models of human physiology or pathology.   In this presentation, I will discuss the range of organs-on-a-chip technologies that is currently available, the limited success of these to date, and the prospects for future applications. Some examples from our lab will be discussed including models of microvascular networks, neuromuscular junctions, and the blood brain barrier.