

Tuesday, 2 October 2018: 3:30 PM–5:00 PM Grand Ballroom D

PLENARY SESSIONS WILL BE LIVE-STREAMED

Tu14 Plenary Session I

Session Chair: Amr Helmy, *University of Toronto, Canada*

3:30 PM–4:15 PM

Breaking Spectral and Performance Barriers for Diode Lasers with Material Innovation

Manijeh Razeghi, *Northwestern University, IL, USA*

From humble beginnings, diode laser technology has evolved to become an invaluable tool for many aspects of our daily lives. Diode lasers exhibit a number of favorable properties which have led to their wide adoption, including compactness, robustness, and mass producibility.

4:15 PM–5:00 PM

Implantable, Insertable and Wearable Micro-optical Devices for Early Detection of Cancer

Christopher Contag, *Michigan State University, MI, USA*

Current technologies for the detection of cancer lack the sensitivity for early detection at times when therapy would be most effective, and cannot detect minimal residual disease that persists after conventional therapies. Therefore, it will be necessary to develop image-guided approaches for multiplexed molecular characterization of cancer and methods to visualize small numbers of cancer initiating cells.

Wednesday, 3 October 2018: 3:30 PM–5:00 PM Grand Ballroom D

PLENARY SESSIONS WILL BE LIVE-STREAMED

WI4 Plenary Session II

Session Chair: Amr Helmy, *University of Toronto, Canada*

3:30 PM–4:15 PM

Ian Walmsley, *University of Oxford, UK*

Ian Walmsley is Provost of Imperial College London, UK, and Professor of Experimental Physics. His research in optical science and technology ranges from ultrafast optics to quantum information science. Currently he is the Director of the Networked Quantum Information Technology Hub, the largest collaboration in the UK National Quantum Technologies Programme. He is a Fellow of the Royal Society, the Optical Society (OSA), the American Physical Society and the Institute of Physics. Currently he is President of the Optical Society.

4:15 PM–5:00 PM

Ultrafast Lasers for Multi-photon Microscopy

Jim Kafka, *MKS Instruments, Inc., CA, USA*

Combining femtosecond laser sources with microscopes has created the flourishing field of multi-photon microscopy and provided the ability to produce stunning 3 dimensional images in biological disciplines including neuroscience. Specialized ultrafast sources are required for successful 2-photon and 3-photon microscopy as well as CARS and optogenetics.