

Preliminary Program

(December 4, 2018)

**Advances in Optics for Biotechnology,
Medicine and Surgery XVI**

June 2-6, 2019

**Fairmont Tremblant
Mont Tremblant, Quebec, Canada**

Conference Co-Chairs

Erin Buckley

Emory University/Georgia Institute of Technology, USA

Christophe Moser

Polytechnique Fédérale de Lausanne (EPFL), Switzerland

Brian Pogue

Dartmouth College, USA

David Sampson

University of Western Australia, Australia



Engineering Conferences International

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Sunday, June 2, 2019

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| 16:00 – 18:00 | Conference Check-in |
| 18:00 – 19:30 | Dinner |
| 19:30 – 21:00 | <u>Session I: TBD</u>
Session Chairs: Brian Pogue, Dartmouth College, USA
Christophe Moser, EPFL, Switzerland |
| 19:30 – 20:00 | New technological directions for imaging at depth
Kishan Dholakia, University of St Andrews, Scotland |
| 20:00 – 20:30 | Imaging multiple molecular markers under surgical light illumination
Viktor Gruev, University of Illinois at Urbana-Champaign, USA |
| 20:30 – 21:00 | Molecular guided surgery advances
Eban Rosethal, Stanford University, USA |
| 21:00 – 22:00 | Poster Session |

Monday, June 3, 2019

07:00 – 08:30 Breakfast and Discussion Time

Session II: Engineering Optical and Fiber Systems

Session Chair: Rongguang Liang, University of Arizona, USA

08:30 – 09:00 Design, fabrication, and test of micro-optics for biomedical applications
Rongguang Liang, University of Arizona, USA

09:00 – 09:30 Development of compact ultrafast fiber laser sources for nonlinear optical
microscopy
Khanh Kieu, University of Arizona, USA

10:00 – 10:30 OCT for image-guided therapy and surgery
Thomas Milner, Texas A&M University, USA

10:30 – 11:00 Coffee break and discussion time

Session III: Optical-Radiation Interactions

Session Chair: Brian Wilson, University of Toronto, Canada

11:00 – 11:30 Radiation-optical interactions
Brian Wilson, University of Toronto, Canada

11:30 – 12:00 Liposomal optical activation delivery of agents
Jonathan Lovell, University of Buffalo, USA

12:00 – 12:30 TBD

12:30 – 14:00 Lunch

14:00 – 18:00 Networking/Discussion

18:00 – 19:30 Dinner

Session IV: Neurophotonics

Session Chair: Chair Erin Buckley, Emory University/Georgia Institute of
Technology, USA

19:30 – 20:00 Increasing depth sensitivity and brain specificity of diffuse correlation
spectroscopy blood flow measures
Maria Angela Franceschini, Massachusetts General Hospital, USA

20:00 – 20:30 TBD
Andrew Dunn, University of Texas at Austin, USA

20:30 – 21:00 Non-invasive optical measurement of cerebral critical closing pressure in
pediatric hydrocephalus
Wesley Baker, Children's Hospital of Philadelphia, USA

21:00 – 22:00 Poster Session

Tuesday, June 4, 2019

07:00 – 08:30 Breakfast and Discussion Time

Session V: Optics and Biomechanics

Chair: David Sampson, University of Western Australia & University of Surrey, Australia and UK

08:30 – 09:00 Biomechanics of cells and tissues: What can we learn when we combine mechanical stimuli with microscopy?
Davide Iannuzzi, Vrije University, Netherlands

09:00 – 09:30 Translational shear-wave optical coherence elastography
Kirill Larin, University of Houston, USA

10:00 – 10:30 TBD
TBD

10:30 – 11:00 Coffee Break and Discussion Time

Session VI: Molecular Guided Surgery

Chair: Sylvain Gioux, University of Strasbourg, France

11:00 – 11:30 TBD
Jonathan Sorger, Intuitive Surgical, USA

11:30 – 12:00 TBD
Frederic Leblond, University of Montreal, Canada

12:00 – 12:30 TBD
Sylvain Gioux, University of Strasbourg, France

12:30 – 14:00 Lunch

14:00 – 18:00 Networking/Discussion

18:00 – 19:30 Dinner

Session VII: Commercialization Case Studies

Chairs: Kate Bechtel, Triple Ring Technology, USA

19:30 – 20:00 Development of the MediBeacon transdermal GFR measurement system
Martin Debreczeny, Medibeacon Inc., USA

20:00 – 20:30 TBD
Nicolas Loebel, Ondine Biomedical, Inc., Canada

20:30 – 21:00 TBD
David Cuccia, Modulated Imaging, Inc., USA

21:00 – 22:00 Poster Session

Wednesday, June 5, 2019

07:00 – 08:30 Breakfast and Discussion Time

Session VIII: Microscopy Advances

Chairs: Paul Campagnola, University of Wisconsin, USA

08:30 – 09:00 Advances in computational wide field imaging
Peter So, Massachusetts Institute of Technology, USA

09:00 – 09:30 TBD
Elizabeth Hillman, Columbia University

10:00 – 10:30 Spectroscopic single-molecule localization microscopy (sSMLM)
Hao Zhang, Northwestern University, USA

10:30 – 11:00 Coffee Break and Discussion Time

Session IX: Imaging Through Turbid Media

Chairs: Ivo Vellekoop, University of Twente, Netherlands

11:00 – 11:30 TBD
Herve Rigneault, Institut Fresnel, France

11:30 – 12:00 TBD
Ivo Vellekoop, University of Twente, Netherlands

12:00 – 12:30 TBD
Emmanuel Bossy, University of Grenoble, France

12:30 – 14:00 Lunch

14:00 – 18:00 Networking/Discussion

Session X: Learning in Optical Systems

Session Chair: Aydogan Ozcan, University of California Los Angeles, USA

18:00 – 18:30 TBD
George Barbastathis, Massachusetts Institute of Technology, USA

18:30 – 19:00 TBD
Rafael Piestun, University of Colorado at Boulder, USA

19:00 – 19:30 TBD
Aydogan Ozcan (introduced by C. Moser), University of California Los Angeles, USA

19:30 – 21:30 Farewell Dinner

Thursday, June 6, 2019

07:00 – 08:30 Breakfast and Discussion

08:30 – 11:00 Checkout and Departures