**Day 1 – Sunday 30 April 2017**

### Conference Opening & Welcome to Country

8.30 - 9.00am

Conference Welcome: **David Sampson**, The University of Western Australia, ICOB2017 Chair

Conference Opening: **Brian Wilson**, Princess Margaret Cancer Centre, Canada, **Dennis Matthews**, University of California Davis, USA and **Jürgen Popp**, Leibniz Institute of Photonics, Germany

### Session 1: How to Set a Big Picture Biophotonics Agenda

9.00 - 9.50am

**Session Leader:**

**Laura Marcu**, University of California Davis, USA

**Speakers:**

**Stephen Boppart**, University of Illinois at Urbana-Champaign, USA

*Biophotonics Imaging at the Meso/Macro Scale: Technologies, Applications, Directions and Challenges*

**Mark Hutchinson**, University of Adelaide, Australia

*Big Biophotonics Science: Balancing the Journey and the Destination*

**Brian Wilson**, Princess Margaret Cancer Centre, Canada

*Panelist*

**Jürgen Popp**, Leibniz Institute of Photonic Technology, Germany

*Panelist*

### Lunch & Exhibition

9.50 - 10.00am

**Launch of Biophotonics.World: The largest biophotonics network worldwide**

10.00 - 10.30am

Morning Tea & Exhibition

### Session 2: In Vivo Non-Invasive Retinal Vessel and Blood Flow Imaging: Biophotonic Advances and Clinical Applications

10.30 - 12.00pm

**Session Leader:**

**Fred Chen**, Lions Eye Institute, Australia

*Can Biophotonic Advances Overcome Clinical Challenges in Human Retinal Vascular Imaging?*

**Andrew Metha**, University of Melbourne, Australia

*In-vivo Human Adaptive Optics Imaging of Retinal Capillary Structure and Function*

**Chandra Balaratnasingam**, Lions Eye Institute, Australia

*Optical Coherence Tomography Angiography in Ophthalmology*

### Session 3: Tumour Margin Identification: Critiquing Technologies

12.00 - 1.00pm

**Session Leader:**

**Stephen Boppart**, University of Illinois Urbana Champaign, USA

*Intraoperative Stain-Free Histopathology of Tumor Margins and the Microenvironment using Multimodal Multiphoton Imaging*

**J. Quincy Brown**, Tulane University, USA

*Mind the Gaps: An Argument for more Comprehensive Surface Sampling of Tumor Resection Margins using Advanced Microscopy*

**Christobel M. Saunders**, The University of Western Australia, Australia

*How Optical Solutions Can Solve Problems in Cancer Surgery*

**Laura Marcu**, University of California Davis, USA

*Fluorescence Lifetime Techniques for Surgical Imaging, Guidance and Augmented Reality*

**Esther Kho**, Netherlands Cancer Institute, The Netherlands

*Hyperspectral Imaging for Intraoperative Margin Assessment During Breast Cancer Surgery*

**Camile Farah**, The University of Western Australia, Australia

*Panelist*

### Lunch & Exhibition

1.00 - 3.00pm

**Conference Opening:**

**Brian Wilson**, Princess Margaret Cancer Centre, Canada, **Dennis Matthews**, University of California Davis, USA and **Jürgen Popp**, Leibniz Institute of Photonics, Germany

**Plenary Presentation**

**Eugene Arthurs**, PhD, CEO, SPIE – The International Society for Optics and Photonics, USA

*Biophotonics: Sustaining the Endless Frontier*

**Launch of Biophotonics.World: The largest biophotonics network worldwide**

**Morning Tea & Exhibition**

3.00 - 3.30pm

**Conference Opening & Welcome to Country**

**Conference Welcome:**

**David Sampson**, The University of Western Australia, ICOB2017 Chair

**Conference Opening:**

**Stephen Boppart**, University of Illinois at Urbana-Champaign, USA

*Biophotonics Imaging at the Meso/Macro Scale: Technologies, Applications, Directions and Challenges*

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**Brian Wilson**, Princess Margaret Cancer Centre, Canada

*Panelist*

**Jürgen Popp**, Leibniz Institute of Photonic Technology, Germany

*Panelist*

### Afternoon Tea & Exhibition

3.00 - 3.30pm
### Session 4: Hot Posters

**Session Leaders:**

Philip Wijesinghe, The University of Western Australia and Danuta Sampson, Lions Eye Institute, Australia

**Presenters:**

Jiawen Li, University of Adelaide, Australia

3D printed lenses for use in miniaturised endoscopic probes

Lothar D. Lilge, University Health Network, Canada

Optical pre-screening in breast screening programs: Can we identify women who benefit most from limited mammography resources?

Rachel Lloyd, The University of Western Australia

Novel method to measure breast density in younger women

Thomas Bocklitz, University Jena, Germany

Non-linear multimodal imaging for disease diagnostics and treatment monitoring

Piotr Wargocki, Macquarie University

A simple smartphone based device towards biomedical colorimetric and fluorescent signal detection

Philipp Reineck, RMIT University

Near-infrared fluorescent nanomaterials for bioimaging and sensing

Stephen P. Morgan, The University of Western Australia

Optical fibre sensing of fragile skin

Frederique Vanholsbeeck, The University of Auckland

Near-real time enumeration of bacteria

Xuefei (Sherry) He, Australian National University, Australia

Dynamic in-vivo imaging of the mammalian vascular systems

Gerd E. Schroeder-Turk, Murdoch University

Sheet-like chiro-optical material designs based C Y) surfaces

Karol Karnowski, The University of Western Australia, Australia

Evaluation of changes in birefringence for samples subjected to various stress sources measured with polarization-sensitive OCT

Kevin Kin Man Tsia, The University of Hong Kong

Ultrafast laser scanning cellular microscopy by spatiotemporally encoded virtual sources

Kirill V. Larin, University of Houston, USA

Effect of prenatal alcohol exposure on mouse fetal brain development assessed with optical coherence tomography

### 4.30 - 6.00pm

**Poster Session**

### 6.30 - 8.30pm

**Welcome Reception at Bathers Beach House, Fremantle**

Canapés & Beverages Provided

Sponsored by the Centre for Nanoscale BioPhotonics

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### Day 2 – Monday 1 May 2017

**Opening Presentation**

Stephen K Robinson, Professor & Chair, UC Davis Department of Mechanical and Aerospace Engineering and Director, UC Davis Center for Human/Robotics/Vehicle Integration and Performance (and former NASA Astronaut), USA

Life and Science Aboard the International Space Station

**Discussion**

**Morning Tea & Exhibition**

**Session 5: Challenges in Translation: Models to Promote Translation**

**Session Leader:**

Jürgen Popp, Leibniz Institute of Photonic Technology, Germany

Translation Approaches in Photonics Towards Applications for Clinical Routine

**Speakers:**

Dennis Matthews, University of California Davis, USA

The Long Road to Commercialising a Personal Blood Count Monitor

Brian Wilson, Princess Margaret Cancer Centre, Canada

Challenges in Clinical Translation Of Biophotonics Technologies, Exemplified by Optical Spectroscopy/Spectral Imaging

Alfredo Martinez-Coll, MTPConnect, Australia

MTPConnect and Its Role in Driving the Medtech and Pharmaceutical Sector in Australia

**Lunch & Exhibition**

Outreach with Stephen K Robinson and Naked Scientist Chris Smith

The Optical Society Student Chapter will run outreach activities for high school students: Origami Microscope, How Safe is My Green Laser Pointer? and Seeing Beneath Your Skin with Light
<table>
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<th>Time</th>
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| 1.30 - 3.00pm| **Session 6: SPARK Co-Lab, Training People to Identify a Commercial Pathway for Unmet Needs**<br>Session Leader: Peter Santa Maria, The University of Western Australia, Australia<br>Speakers: Ming Yew, St John of God’s Hospital, Australia and Dylan Beinart, The University of Western Australia, Australia<br>Arjun Kaushik, The University of Western Australia, Australia and Sarah McGarry, Princess Margaret Hospital for Children and Fiona Stanley Hospital, Australia<br>Identifying Areas of Clinical Need for Innovation<br>How to Progress an Area of Need through to the Clinic: A Case Study of Iris Medical<br>**Session 7: Neurophotonics**<br>Session Leader: Anita Mahadavan-Jansen, Vanderbilt University, USA<br>Speakers: Paul Stoddart, Swinburne University of Technology, Australia<br>Mark Hutchinson, The University of Adelaide, Australia<br>Pushing the Boundaries in Neuro modulation<br>Understanding the Brain with Light<br>**Session 8: Radical New Ideas in Biophotonics**<br>Session Leader: Kishan Dholakia, University of St Andrews, Scotland<br>Speakers: Chris Xu, Cornell University, USA<br>Carola Thoni, Lastek<br>In Vivo 3-Photon Microscopy of the Mouse Brain<br>From Live Cell STED Superresolution to State of the Art Ultramicroscopy, New Tools for Biological Imaging<br>Tomasz Tkaczyk, Rice University, USA<br>Paradigm Shifts in Biomedical and Diagnostic Imaging<br>**Afternoon Tea & Exhibition**<br>**Session 6 Wrap-up: Working on White Papers**<br>**Conference Dinner & Conference Close at Little Creatures Brewery, Fremantle**<br>**Day 1 Science on the Swan Conference – Tuesday 2 May 2017**<br>**Science on the Swan - Conference Opening & Welcome to Country**<br>Welcome to Country by Dr Richard Walley OAM<br>Welcome by Conference Co-Chairs Professor David Morrison and Professor John Callis<br>Formal Conference Opening by The Honourable Roger Cook MLA, Deputy Premier; Minister for Health; Mental Health<br>**Science on the Swan - Opening Keynote**<br>Nobel Laureate Professor Barry Marshall AC<br>How Advances in Technology Enable Unexpected Breakthroughs in Medicine: Examples from the 2005 Nobel Prize<br>**Morning Tea & Exhibition**<br>**Science on the Swan - Session 1: ONE HEALTH: Microbiome**<br>Professor Jeremy Nicholson, Head, Department of Surgery & Cancer, Imperial College, London<br>Microbiome-Host Interactions and their Healthcare Implications<br>Professor Una Ryan, Biochemistry, Murdoch University, Perth<br>Lyme-Like Disease in Australia: A Tick-Borne Illness?<br>Professor Katherine Kedzierska, Head, Human T cell Lab, Doherty Institute, Melbourne<br>Immunity to a New Avian Influenza Virus H7N9<br>Speaker Q&A<br>**Science on the Swan - Presentation Dr Stephen K Robinson, Professor & Chair, UC Davis Department of Mechanical and Aerospace Engineering and Director. UC Davis Center for Human/Robotics/Vehicle Integration and Performance (and former NASA Astronaut), USA**<br>Life and Science Aboard the International Space Station<br>**Lunch & Exhibition**<br>**Science on the Swan - Post Conference Workshop: Biophotonics Publishing (Science on the Swan delegates welcome)**<br>Session Leader: Eric Pepper, SPIE – The International Society for Optics and Photonics, USA – SPIE Director of Publications<br>Panelists: Christoph Hitzenberger, Medical University of Vienna, Austria - Biomedical Optics Express<br>Jürgen Popp, Leibnitz Institute of Photonics, Germany – Journal of Biophotonics<br>Martin Delahuntly, Springer Nature, United Kingdom - Global Director, Nature Partner Journals<br>**Afternoon Tea**