***Preliminary Program***

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

**May 18 - 22, 2025**

 **Maryborough Hotel
Cork, Ireland**

**Conference Co-Chairs:**

**Stefan Andersson-Engels, Tyndall National Institute, Ireland**

**Summer Gibbs, Oregon Health and Science University, USA**

**Melissa Skala, Morgridge Institute for Research, USA**



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**Engineering Conferences International**

**369 Lexington Avenue, 3rd Floor #389 - New York, NY 10017, USA**

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**Sunday May 18, 2025**

17:30 – 18:30 Conference check-in

18:30 – 19:30 Welcome reception

19:30 – 21:00 Dinner

**NOTES**

* *Audio, still photo and video recording by any device (e.g., cameras, cell phones, laptops, watches) is* ***strictly prohibited*** *during the technical sessions, unless the author and ECI have granted prior permission.*
* *This is a conference of invited speakers only with the goal to guide the field. Discussions are strongly encouraged throughout the week.*
* *Speakers – Please have your presentation loaded onto the conference computer prior to the session start (preferably the day before).* ***Material shown at the meeting cannot be cited and photos of slides and posters are not allowed without the presenter’s permission,*** *so that unpublished data can be shown. Speakers are encouraged to present novel results and ideas in an opinionated and possibly controversial way.*
* *Speakers – Please leave at least* ***7 minutes*** *for questions.*
* *Please do not smoke at any conference functions.*
* *Turn your cellular telephones to vibrate or off during technical sessions.*
* *After the conference, ECI will send an updated participant list to all participants. Please check your listing now and if it needs updating, you may correct it at any time by logging into your ECI account.*

**Monday, May 19, 2025**

07:30 – 08:30 Breakfast and Discussion Time

08:30 – 08:40 Conference Welcome – Conference Liaison and Chairs

 **Session 1: Light Sheet Microscopy**

 Session Chair: Kishan Dholakia, University of Adelaide

08:40 – 09:10 **TBA**

 Kylie Dunning, University of Adelaide, Australia

09:10 – 09:40 **TBA**

Kishan Dholakia, University of Adelaide, Australia

09:40 – 10:10 Coffee Break and Networking

 **Session 2: Wavefront shaping**

 Session Chair: Kevin Tsia, University of Hong Kong

10:10 – 10:40 **TBA**

YoungKuen (Paul) Park, Korea Advanced Institute of Science & Technology, Korea

10:40 – 11:10 **TBA**

Puxiang Lai, Hong Kong Polytechnic University

11:10 – 11:40 **TBA**

 Kevin Tsia, University of Hong Kong

11:40 – 12:10 **Quick-fire session**

Poster presenters, Two minutes and one slide each

12:10 – 13:40 Lunch and Networking

**Session 3: Optics in Women’s Health**

 Session Chair: Jessica Ramella-Roman, Florida International University, USA

13:40 – 14:10 **TBA**

 Irina Larina, Baylor College of Medicine, USA

14:10 – 14:40 **TBA**

Kristin Myers, Columbia University, USA

14:40 – 15:10 **TBA**

Tatiana Novikova, Ecole Polytechnique, France

15:10 – 15:40 **TBA**

Jessica Ramella-Roman, Jessica Ramella-Roman, Florida International University, USA

15:40 – 17:30 Coffee Break and **Poster Session I**

**Monday, May 19, 2025 (continued)**

**Session 4: Photodynamic Therapy**

 Session Chair: Lothar Lilge, Princess Margaret Cancer Centre, Canada

17:30 – 18:00 **TBA**

Layla Pires, Texas A&M University, USA

18:00 – 18:30 **TBA**

Anne-Laure Bulin, Inserm, France

18:30 – 19:00 **TBA**

Dominic Robinson, Erasmus University Medical Center, the Netherlands

19:00 – 20:30 Dinner and Networking

20:30 – 22:00 Social Hour / Poster discussions

**Tuesday, May 20, 2025**

07:30 – 08:30 Breakfast and Networking

**Session 5: Surgical guidance**

 Session Chair: Lei Wang, Oregon Health and Science University, USA

08:30 – 09:00 **Clinical implementation of optical spectroscopy**

Theo Ruers, The Netherlands Cancer Institute

09:00 – 09:30 **TBA**

Ethan LaRochelle, QUEL Imaging, USA

09:30 – 10:00 **Improving surgical outcomes with NIR nerve-specific contrast agents**

 Lei Wang, Oregon Health and Science University

10:00 – 10:30 **Mechanical Imaging of Embryos with Reverberant Optical Coherence Elastography and Brillouin Spectroscopy**

Kirill Larin, University of Houston, USA

10:30 – 11:00 Coffee Break and Networking

 **Session 6: Early disease diagnostics I**

 Session Chair: Mark Niedre, Northeastern University, USA

11:00 – 11:30 **TBA**

Mikaela Balu, University of California, Irvine, USA

11:30 – 12:00 **Hemodynamic-based early detection of treatment efficacy in brain and breast with diffuse optics**

Regine Choe, University of Rochester, USA

12:00 – 12:30 **TBA**

Ariane Garrett, Boston University, USA

12:30 – 14:00 Lunch and Networking

**Session 7: Early disease diagnostics II**

 Session Chair: Martin Leahy, University of Galway, Ireland

14:00 – 14:30 **Tethered Instrument for Continuous Fluorescence Detection and Counting of Circulating Cancer Cells in Awake, Freely Moving Mice**

Mark Niedre, Northeastern University, USA

14:30 – 15:00 **Photoacoustic stem cell and vesicle tracking in small and large animals using optimized gold nanostars**

Martin Leahy, University of Galway, Ireland

15:00 – 15:30 **Translating Surgical AI Research into Medical Devices**

Danail Stoyanov, University College London, UK

15:45 – 20.30 **Excursion to Kinsale**

15:45 Bus departs for Kinsale

**Tuesday, May 20, 2025 (continued)**

16:20 – 20:00 Free time to explore Kinsale including dinner on your own

20:00 – 20:40 Bus back to hotel (leaving Kinsale 20:00)

20:40 – 22:00 Social Hour / Poster discussions

**Wednesday, May 21, 2025**

07:30 – 08:30 Breakfast and Networking

 **Session 8: Neurophotonics**

 Session Chair: Turgut Durduran, Institute of Photonic Sciences

08:30 – 09:00 **TBA**

 Tiffany Ko, University of Pennsylvania, USA

09:00 – 09:30 **TBA**

 Ilias Tachtsidis, University College London, UK

09:30 – 10:00 TBD

10:00 – 10:30 Coffee Break and Networking

**Session 9: Machine learning**

 Session Chair: Randy Bartels, Morgridge Institute for Research, USA

10:30 – 11:00 **TBA**

Kevin Dean, University of Texas Southwestern Medical Center, USA

11:00 – 11:30 **TBA**

Bryan Plummer, Boston University, USA

**Session 10: Photoacoustics I**

Session Chair: Mallidi Srivalleesha, Tufts University

11:30 – 12:00 **Monitoring of immune responses/stemcells**

Kelsey Kubelick, University of Virginia, USA

12:00 – 12:30 **Photoacoustics for women’s health**

Carolyn Bayer, Tulane University, USA

12:30 – 14:00 **Lunch and Discussion Time**

**Session 11: Photoacoustics II**

Session Chair: Mallidi Srivalleesha, Tufts University

14:00 – 14:30 **TBA**

Rui Cao, Case Western Reserve University

14:30 – 15:00 **Clinical applications of photoacoustics in melanoma**

Aboma Merdasa, Lund University, Sweden

15:00 – 15:30 **Multi-modality, nanoparticle imaging**

Yung Shen Chen, Illinois University, USA

15:30 – 17:00 Coffee Break and **Poster Session II**

**Wednesday, May 21, 2025 (continued)**

**Session 12: Nonlinear microscopy**

 Session Chair: Melissa Skala, Morgridge Institute for Research, USA

17:00 – 17:30 **Label-free multiphoton imaging of metabolic changes during immunotherapy in vivo**

 Alexa Heaton, Morgridge Institute for Research, USA

17:30 – 18:00 **TBA**

Lingyan Shi, University of California San Diego, USA

18:00 – 18:30 **TBA**

Randy Bartels, Morgridge Institute for Research, USA

18:45 – 19:45 **Reception with** **Irish music, Orangery**

19:45 – 21:45 **Conference Banquet**

**Thursday, May 22, 2025**

07:30 – 09:00 Breakfast and Networking

**Session 13 Clinical guidance and endoscopy**

 Session Chair: Nicholas Durr, Johns Hopkins University, USA

09:00 – 09:30 **Intraoperative dual-aperture fluorescence imaging in head and neck cancer patient surgeries: optimization of a system to detect insufficient surgical margins**

Ken Tichauer, Illinois Institute of Technology, USA

09:30 – 10:00 **TBA**

Leo Shmuylovich, Washington University in St. Louis, USA

10:00 – 10:30 **TBA**

Christine O'Brien, Washington University in St. Louis, USA

10:30 – 11:00 **TBA**

 Nicholas Durr, Johns Hopkins University, USA

11:00 Coffee break and boxed lunches available

Check-out (by 12 Noon) and Departures

11:30 – 14:00 Optional Lab tour at Tyndall National Institute for those interested