



## **Pre-Congress School on Optical Biosensors**

**Tuesday, 27 May 2014, Melbourne Convention Center**

Organised by Fran Ligler and Tanya Monro

08:15            Welcome, Introduction, Aim of the School, Logistics  
                    Tanya Monroe and Fran Ligler

### **Theme 1: Materials for optical biosensing**

To include: Material pros and cons, possible device architectures, surface functionalization approaches, limitations and emerging opportunities.

08:30            **Brett Nener** and **Gia Parish**, *University of Western Australia*  
                    - Semiconductor materials and devices for biosensing

09:10            **A/Prof Heike Ebendorff-Heidepriem**, *University of Adelaide*  
                    - Optical glasses and fibres for biosensing

09:50            **Coffee Break**

10:20            **Prof Ewa Goldys**, *Macquarie University*  
                    - Nanoparticles for biosensing

11:00            **Prof Justin Gooding**, *University of New South Wales*  
                    Interfaces and control of surfaces, photonic crystals and quantum dots

### **Theme 2: Architectures for optical biosensing**

An overview of a range of optical architectures for biosensing, including performance limits and practical considerations.

11:40            **Prof Jim Piper**, *Macquarie University*  
                    Time-gated luminescence sensing for biomedical diagnostics - strategies and instrumentation including TGL scanning microscopy and flow cytometry.

12:20            **Lunch**

- 13:20      **Dr Alexandre François**, *University of Adelaide*  
Optical fibre-based label-free biosensors – an overview of architectures, applications and emerging opportunities
- 14:00      **A/Prof Tomasz Tkaczyk**, *Rice University*  
Imaging sensors (miniature confocal devices, molecular imaging, colloidal nanoparticles) use in resource-limited settings
- 14:40      **Prof Matt Cooper**, *University of Queensland*  
Biomarkers, label-free technologies for drug screening, strategies for innovation and commercialization
- 15:20      Afternoon Tea and Panel Discussion formed by the speakers that will tackle questions from the audience as well as consider the following discussion points:
- What do you see as the priorities for materials science research to support advances in optical biosensors?
  - What key research questions or practical challenges need to be addressed to facilitate the translation of these biosensors into point of care and clinical applications?
  - What emerging research developments do you think will make the biggest difference to the capabilities of optical biosensors in coming years?
- 16:30      End of Day

\*\*Talk slots include 10 minutes discussion. Demonstrations or device prototypes are encouraged.