

Heart Valve Replacements: Past, Presents, and Future Directions



Australian Government
Australian Research Council



Australian Government
Department of Health



THE UNIVERSITY OF
SYDNEY

We welcome you to this multidisciplinary meeting highlighting current research in novel heart valve technologies. The day is organized by our group based at Sydney University, comprising bioengineers, computational modeling scientists, and clinicians. We aim to bring a better valve to children who require a heart valve replacement on the right side of their heart, but the work is increasingly relevant to people of all ages with heart valve disease. We are excited to be joined by leading national and international guest speakers, making significant contributions in this field. We acknowledge the Gadigal people of the Eora Nation. It is upon their ancestral lands that the University of Sydney is built.

When:

27 September 2022

Where:

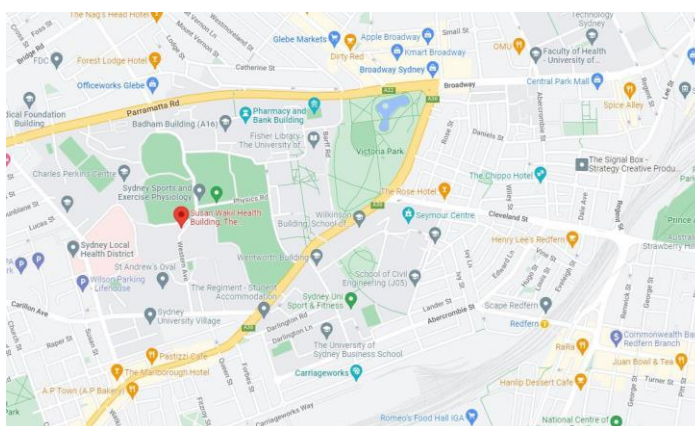
D18.04.416. Susan Wakil Health Building (SWHB) Event Space 416, The University of Sydney Western Ave, Camperdown, NSW 2050, Australia

Registration:

<https://www.eventbrite.com.au/e/heart-valve-replacements-past-present-and-future-directions-tickets-396876848337>

More information:

For more information, please email Dr. Sina Naficy: sina.naficy@sydney.edu.au



Google Map: <https://goo.gl/maps/8bUo4kaw7aKrFVgy6>

Contact

Dr. Sina Naficy, School of Chemical and Biomolecular Engineering, The University of Sydney

sina.naficy@sydney.edu.au

Program

Opening Address – Dr Sina Naficy – 9.30 am		
Acknowledgement of Country		
Session 1 – Problems and Solutions Chair: Professor Fariba Dehghani		
9.35–9.55 am	20 min	Professor David Winlaw – Clinical imperatives and progress in valve substitutes for pediatric cardiac surgery
9.55–10.15 am	20 min	Living with prosthetic heart valves – personal impacts
10.15–10.35 am	20 min	Dr Sina Naficy – Scoping solutions for improvement in polymeric heart valves
10.35–10.50 am	15 min	Questions and Discussion
<i>Morning tea Break – 10.50 am – 11.15 am</i>		
11.15–11.45 am	30 min	Professor Dietmar W. Hutmacher – Convergence of melt electro writing and heart valve design for tissue engineering applications
11.45 am–12.15 pm	30 min	Dr Elena Juan Pardo – Biomimetic scaffolds for heart valve tissue engineering using high-resolution 3D printing
12.15–12.30 pm	15 min	Questions and Discussion
<i>Lunch break – 12.30 pm to 1.30 pm</i>		
Session 2 – Biocompatible materials for heart valve replacement Chair: Professor David Winlaw		
1.30–2.00 pm	30 min	A/Professor Steven Wise – Engineering vascular implants from silk
2.00–2.30 pm	30 min	Dr Mark Bown – The development of biocompatible/biostable polyurethanes and polyurethaneureas for heart valves and other medical device applications
2.30–2.45 pm	15 min	Dr Syamak Farajikhah – Tuning mechanical properties of biocompatible polyurethanes for biomedical applications
2.45–3.00 pm	15 min	Questions and Discussion
<i>Afternoon tea break – 3.00 pm to 3.25 pm</i>		
Session 3 – Integrating design and modelling Chair: Professor David Fletcher		
3.25–3.45 pm	20 min	Dr Luke Mosse – Using LS-DYNA for structural and FSI simulations
3.45–4.00 pm	15 min	Aeryne Lee – From scan to simulation
4.00–4.30 pm	30 min	Professor Marco Biancolini – Digital Twins and Medicine 4.0: from in silico simulations to patient specific solutions
4.30–4.45 pm	15 min	Questions and Discussion
Closing Remarks – Professor David Winlaw – 4.45 pm		