

Summer School in BioNanoTechnology and Biomedical Engineering

Program

DAY 1	
6 February 2017	
Venue: Level 6 Seminar room, Charles Perkins Centre	
Time	Speaker
10.00am-10.15am	Opening Professor Tony Weiss, <i>McCaughey Professor in Biochemistry, Professor of Biochemistry and Molecular Biotechnology, School of Life & Environmental Sciences, Charles Perkins Centre, The University of Sydney</i> Dr Wojciech Chrzanowski, <i>Australian Institute for Nanoscale Science and Technology, The University of Sydney</i>
	Biomedical-Nanomedicine Chair: Dr Wojciech Chrzanowski
10.15am-11.05am	Cells encapsulation and bioprinting Professor Claudio Migliaresi, <i>The University of Trento, Italy</i>
11.05am-11.55am	Biocompatibility: metamorphosis of a concepts Professor Antonella Motta, <i>The University of Trento, Italy</i>
11.55am-1.00pm	Lunch
1.00pm-1.50pm	Cell-instructive surface for implantable devices Professor Thomas Groth, <i>Martin Luther University, Halle-Wittenberg, Germany</i>
1.50pm-2.40pm	Bioelectronics in tissue imaging and drug delivery Associate Professor Alistair McEwan, <i>The University of Sydney</i>
2.40pm-3.00pm	Afternoon tea
	Frontier technologies in nano-biomaterials Chair: Sally Yunsun Kim, <i>The University of Sydney</i>
3.00pm-3.50pm	Tropoelastin-based nanocomposites in tissue regeneration Professor Tony Weiss
3.50pm-4.40pm	Skin tissue engineering at nanoscale Dr Yiwei Wang, <i>ANZAC Institute</i>
4.40pm-5.10pm	Multiphasic constructs and cell sheet technology in the context of periodontal regeneration Dr Cedryck Vaquette, <i>Queensland University of Technology</i>

DAY 2	
7 February 2017	
Venue: Charles Perkins Centre Auditorium, Charles Perkins Centre	
Time	Speaker
	Bioimaging in nanotherapeutics Chair: Dipesh Khanal, <i>University of Sydney</i>
9.30am- 10.20am	Bio-nano-spectroscopy Professor Peter Lay, <i>The University of Sydney</i>
10.20am- 11.10am	Designing probes for bioimaging and drug discovery Dr Elizabeth New, <i>The University of Sydney</i>
11.10m- 12.00pm	Nanofomulations and imaging in cancer treatment Professor Karsten Mader, <i>Martin Luther University, Halle-Wittenberg, Germany</i>
12.00pm- 1.00pm	Lunch
	From nano to macro tissue engineering Chair: Dr Cedryck Vaquette, <i>Queensland University of Technology</i>
1.00pm- 1.50pm	Discovery in tissue engineering Professor Rui Reis, <i>The University of Minho, Portugal</i>
1.50pm- 2.40pm	Biodegradable scaffolds combined with stem cells and bioactive agents for advanced biomedical devices and therapies Professor Nuno M. Neves, <i>The University of Minho, Portugal</i>
2.40pm- 3.05pm	Afternoon tea
	Additive manufacturing – affording the future Chair: Professor Claudio Migliaresi, <i>The University of Trento, Italy</i>
3.05pm- 3.55pm	Biologically inspired sensors and drug delivery systems Rona Chandrawati, <i>The University of Sydney</i>
3.55pm- 4.45pm	Tissue-instructive engineering Professor Fariba Dehghani, <i>The University of Sydney</i>
4.45pm- 5.35pm	Additive biomanufacturing - state of the art and future perspectives Professor Dietmar Hutmacher, <i>Queensland University of Technology</i>

DAY 3

8 February 2017

Venue: SNH Learning Studio 4003, Australian Institute of Nanoscale Science and Technology

Time	Speaker
	Industry-led research Chair: Associate Professor Alistair McEwan, <i>The University of Sydney</i>
9.30am- 10.20am	MedLab - Innovative Product Development Dr Sean Hall, <i>Medlab Clinical</i>
10.20am- 11.10am	Nanosonics – ultrasound in infection control Dr Steven Farrugia, <i>Nanosonics</i>
11.10am- 12.00pm	Probing and imaging at nano and atomic scale with scanning probe microscopy Tristen Tan, <i>Keysight</i>
12.00pm- 1.00pm	Lunch + AFM live demo
1.00pm- 6.00pm	Workshop - nanoscale probing with Atomic Force Microscopy Hands on workshop and demonstration

Speaker biographies

Professor Tony Weiss

McCaughey Professor in Biochemistry, Professor of Biochemistry and Molecular Biotechnology, School of Life & Environmental Sciences, Charles Perkins Centre, The University of Sydney

Professor Weiss is delivering new elastin-based paradigms for wound repair. His discoveries span fundamental structure and function as well as the innovative translation of tropoelastin into human clinical trials. He is Scientific Founder of Elastagen Pty Ltd and on nine Editorial Boards. Recent awards include Fellow of Biomaterials Science and Engineering, Innovator of Influence Award, RACI Applied Research Medal, FAOBMB Entrepreneurship Award, ASBTE Research Excellence Award and MBSANZ Barry Preston Prize. He is Leader of the Charles Perkins Centre Node in Tissue Engineering and Regenerative Medicine.



Professor Claudio Migliaresi

Trento University, Italy

Department of Industrial Engineering, University of Trento, via Sommarive 13, 38123 Trento, Italy. Full Professor of Materials Science and Technology and of Biomaterials and Biomedical Technologies. Head of the Interdepartment Research Center BIOtech- Biomedical Technologies. Editor of six volumes, coauthor of about 450 papers (proceedings included).



Professor Antonella Motta

Trento University, Italy

Department of Industrial Engineering, University of Trento, via Sommarive 9, 38123 Trento, Italy. Associate Professor of Principles of Bioengineering, and Tissue Engineering. Editor of book on Tissue Engineering, coauthor of about 300 papers (proceedings included). Editor-in-Chief (together with Profs. Cooper and Kataoka) of J. of Biomaterials Science. Pol. Ed.



Professor Thomas Groth

Martin Luther University, Germany

Thomas Groth is full Professor of Biomedical Materials at the Faculty of Natural Sciences I at Martin Luther University with research interest in engineering of musculoskeletal tissue focusing on surface modification of biomaterials by nanostructured surface modification using lithographic methods and layer-by-layer technique to control adhesion, growth and differentiation of stem cells.



Associate Professor Alistair McEwan

The University of Sydney

Alistair McEwan is the Biomedical Devices and Instrumentation Theme Leader in Engineering. His research focuses on the electrical and optical properties of tissue and how these can be used for monitoring, treatment and understanding physiology. He collaborates closely with clinical groups in cardiology, neurology and newborn care.



Dr Yiwei Wang
ANZAC Institute

Dr Yiwei Wang is a Senior Research Fellow within the Burns Research Group at the ANZAC Research Institute. Dr Wang was awarded her PhD from Kingston University, United Kingdom and gained post-doctoral and commercial experience in tissue engineering and wound healing. She joined the Burns Group in 2009 and she is currently managing the Burns Laboratory and leading several research projects.



Dr Cedryck Vaquette
Queensland University of Technology

Cedryck Vaquette graduated from his PhD in Tissue Engineering in 2008 and consecutively worked at the Australian Institute for Bioengineering and Nanotechnology until 2010. He joined Prof Hutmacher's group in early 2010 and hold a VC-research fellowship. Dr Vaquette is involved in the development of multiphasic structures for various Tissue Engineering applications (bone, periodontal and osteochondral regeneration).



Professor Peter Lay
The University of Sydney

Professor Lay joined the University of Sydney as a lecturer (1985) and progressed to Professor in 1997 and Head of School (2001-2002). He is currently Professor of Chemistry; Director, Vibrational Spectroscopy Core Facility; and Program Co-Leader of a Nanomedicine Flagship Program of the Australian Institute of Nanoscale Science and Technology.



Dr Elizabeth New

The University of Sydney

Liz completed her studies at the University of Sydney and Durham University, and postdoctoral work at UC Berkeley. She returned to Sydney in 2012, holding an ARC DECRA Fellowship, and is currently a Westpac Research Fellow. Her research involves the development of small molecule probes for the study of oxidative stress and metal ions in biology.



Professor Karsten Mäder

Martin Luther University Halle-Wittenberg, Germany

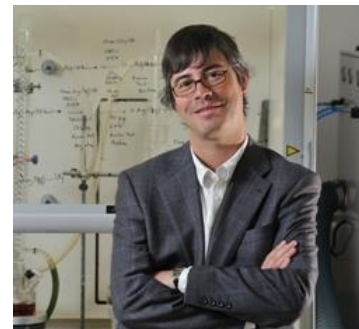
Karsten Mäder obtained his PhD in Pharmacy at the Humboldt-University Berlin. After his postdoc at Dartmouth Medical School (NH, USA) he completed his Habilitation in Berlin. Academic (Marburg, FU Berlin) and industrial (Roche, Basle) research positions followed. Since 2003 Karsten is Full Professor of Pharmaceutics at the Martin-Luther-University Halle-Wittenberg. He published around 180 papers, several book chapters and patents. Karsten is one of the Editors of EJPB and member of the Editorial board of several journals, including J. Contr. Rel. He received several awards, including the APV Research Award for Outstanding Achievements in Pharmaceutical Sciences.



Professor Rui Reis

The University of Minho, Portugal

Director of the 3B's Research Group. Director of the ICVS/3B's Associate Laboratory (PT Government Associate Laboratory. Full Professor of Tissue Engineering, Regenerative Medicine and Stem Cells, Dept. of Polymer Engineering, School of Engineering, U. Minho. CEO of the European Institute of Excellence on Tissue Engineering and Regenerative Medicine. President/Chairman and Chief Scientific officer of Stematters. Editor in Chief of the Journal of Tissue Engineering and Regenerative Medicine, Wiley-Blackwell, Director of the PhD program on Tissue Engineering, Regenerative Medicine and Stem Cells of U. Minho.





Professor Nuno Neves

Minho University, Portugal

Nuno M. Neves is the Vive-Director of the 3B's Research Group at the University of Minho in Portugal. He has worked at the University of Twente (during his PhD) at the University of Tokyo, Japan (Sabbatical leave at Prof. Kazunori Kataoka's lab). He has coordinates research projects funded by the Portuguese Foundation for Science and Technology, regional and European. His work involves the combination of biomaterials and stem cells for tissue engineering and regenerative medicine. He is the author of 149 publications indexed in ISI Web of Science, with an h-factor of 30 and a total number of citations of over 2800.



Dr Rona Chandrawati

The University of Sydney

Dr Rona Chandrawati received her PhD in 2012 from The University of Melbourne. Following this, she was awarded a Marie Curie Fellowship and joined the Department of Materials and Bioengineering at Imperial College London. In 2015, she became a Lecturer in the School of Chemical and Biomolecular Engineering at The University of Sydney. Her honors include Elsevier Woman in Chemical Engineering Award, Monash Engineering Women's Leadership Award, and Dean's Research Award. Her research focuses on developing synthetic mimics of cells; and bioengineering of materials and devices for diagnostics, therapeutic delivery, and regenerative medicine.



Professor Fariba Dehghani

The University of Sydney

Professor Fariba Dehghani's work in bioengineering research focuses on developing technologies for processing biomaterials, with particular emphasis on tissue engineering and regenerative medicine.





Professor Dietmar Hutmacher
Queensland University of Technology

Professor Hutmacher's background is a strong combination of academic and industrial. His expertise is in biomaterials, biomechanics, medical devices and tissue engineering. He is one of the few academics to take a holistic bone engineering concept to clinical application. More than 400 patients have been treated with the FDA-approved bone engineering scaffolds developed by Prof Hutmacher's Singapore-based interdisciplinary research group.



Dr Sean Hall
Medlab Clinical

Sean Hall is the CEO at Medlab Clinical Limited (ASX:MDC). Sean has 20+ years experience in the Australian Healthcare and food industries and early phase drug discovery is Australia, Asia and the USA. Sean founded Medlab in 2012 with a focus on early phase drug discovery and pioneered research that centers on developing new therapeutics and creating first in-class drugs, for treating chronic diseases and associated co-morbidities.

