

17 - 20 NOVEMBER

MELBOURNE

ABEC · 2019 ·

AUSTRALIAN BIOMEDICAL ENGINEERING CONFERENCE

Technology & Research in Australian Medical Science



SUNDAY 17 NOVEMBER																													
16:45-18:30	Delegate Registration <i>Entrance Foyer, Level 10</i>																												
17:00-18:30	WELCOME RECEPTION Pre-Registration & Exhibition Preview: Canapés & Refreshments Served Dress Code: Smart Casual <i>Exhibition Hall, Conference rooms, Level 10</i>																												
MONDAY 18 NOVEMBER																													
07:30-09:00	Delegate Registration <i>Denham Theatre Foyer, Mezzanine Level</i>																												
09:00-09:45	Opening Plenary Session Speaker: Karen Reynolds, Flinders University <i>Biomedical Engineering – Research with Vowels</i> Chair: Paul Junor <i>Room: Derham Theatre, Mezzanine Level</i>																												
09:45-10:30	MORNING TEA <i>Exhibition Hall, Conference rooms, Level 10</i>																												
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15:45-17:15	<p>Poster Presentations & Networking Event Afternoon Tea & Refreshments will be served throughout <i>Exhibition Hall, Conference rooms, Level 10</i></p>
18:30-23:00	<p>ABEC 2019 CONFERENCE DINNER University House, Professors Walk, 112, Professors Walk, The University of Melbourne VIC. Dress Code: Business</p>

TUESDAY 19 NOVEMBER

08:00-09:00	Delegate Registration <i>Entrance Foyer, Level 10</i>	
09:00-09:45	Plenary Session Speaker: Prof. Mark Cook, University of Melbourne <i>Seizures Detection Devices: Challenges and Opportunities</i> Chair: David Grayden, University of Melbourne <i>Room: Derham Theatre, Mezzanine Level</i>	
09:45-10:30	MORNING TEA <i>Exhibition Hall, Conference rooms, Level 10</i>	
	Parallel Session 3A <i>Room: Derham Theatre, Mezzanine Level</i>	Parallel Session 3B <i>Room: South Room, Level 10</i>
10:30-11:00	Machine Learning and Big Data, AI and Robotics Chair: Tatiana Kameneva, Swinburne University Invited Speaker Dr. Ewan Nurse, Seer <i>Bridging the Technology Gap in Healthcare: The Application of Machine Learning at Seer for Epilepsy Diagnostics and Management</i>	Clinical Engineering and health technology Chair: Shoo-Chin Siah, Royal Women's Hospital Invited Speaker Dr. Rebecca Bailey, Royal Melbourne Hospital <i>Clinical Engineering and Health Technology Management in Public Health</i>
11:00-11:20	Xiao (Demi) Gao Unifying information theoretic method and machine learning model of electrode discrimination in cochlear implant stimulation	Hossein Hadi Najafabadi Measurement of the Smoke Generation Rate During Monopolar Electrosurgery
11:20-11:40	Daniel Payne Towards seizure forecasting with external factors and deep learning	Michael Sheedy Auditing patient monitor layout and colour allocations with a view to standardisation
11:40-12:00	William Hart Models for combined optogenetic and electrical stimulation of auditory neurons	Chris Morison Reducing the Time Spent Looking for Clinical Equipment with Wi-Fi Asset Tracking and a Custom-Made Website
12:00-12:20	Tatiana Kameneva Automated classification of VI cortical visual neurons' spike shapes	Igor Tyshchenko A Simple On-line Work Request System for The Small Biomedical Engineering Team
12:30-13:30	LUNCH <i>Exhibition Hall, Conference rooms, Level 10</i>	
	Parallel Session 4A <i>Room: Derham Theatre, Mezzanine Level</i>	Parallel Session 4B <i>Room: South Room, Level 10</i>
13:30-14:00	Rehabilitation Engineering and Assistive Technology, Biomechanics and Computational Bio-Engineering Chair: Dale Robinson, University of Melbourne Invited Speaker: Lloyd Walker, NDIA and Iain Brown, NCRE <i>The changing role of the Rehabilitation Engineer - facilitating personalised technology for inclusion</i>	International Federation of Medical and Biological Engineering (IFMBE) Panel Presentations and Discussion Chair: Michael Flood, Biomedical College, Engineers Australia
14:00-14:20	K M Anamul Hossain A novel fracture fixation bone plate to reduce the stress-shielding effects in long bones	James Goh Effectiveness of an Authentic Learning Environment in BME program
14:20-14:40	Melissa Louey Kinematic elbow analysis in children with inertial measurement units	Ratko Magjarevic Global impact of biomedical engineering by IFMBE
14:40-15:00	Thomas Beltrame Respiratory Rehabilitation through an Assistive Electronic Trumpet	Shankar Krishnan Developing Industry-University Partnership Models: Features, Benefits and Challenges
15:00-15:20	Chinthaka Jacob The role of mean streaming and turbulent mixing for gas transport during high-frequency ventilation	Panel Discussion
15:30-16:00	AFTERNOON TEA <i>Exhibition Hall, Conference rooms, Level 10</i>	
16:00-17:00	Poster Presentations & Networking Event Afternoon Tea & Refreshments will be served throughout <i>Exhibition Hall, Conference rooms, Level 10</i>	

WEDNESDAY 20 NOVEMBER

08:00-09:00	Delegate Registration <i>Entrance Foyer, Level 10</i>	
09:00-09:45	Plenary Session Speaker: Sam John, University of Melbourne <i>Stentrode: The Journey to the First-in-Human Clinical Trial</i> Chair: Elena Pirogova, RMIT University <i>Room: Derham Theatre, Mezzanine Level</i>	
09:45-10:30	MORNING TEA <i>Exhibition Hall, Conference rooms, Level 10</i>	
	Parallel Session 5A <i>Room: Derham Theatre, Mezzanine Level</i>	Parallel Session 5B <i>Room: South Room, Level 10</i>
10:30-11:00	Digital Health, Cybersecurity and Clinical Engineering Chair: Robert Barnett, Alfred Hospital Invited Speaker Prof Trish Williams, Flinders University <i>Oh no, not more acronyms! What are the MIA in digital health and cybersecurity today and why?</i>	Workshop on Design Control, Risk Management and Quality Management Systems Facilitator: Michael Flood
11:00-11:20	Joseph Vartuli What Strategies Does Your Hospital Have in Place to Support Patient Monitoring Network Uptime and Superior Performance?	Presentations and Open Discussion
11:20-11:40	Luke Ryan Cuffless Blood Pressure Monitoring in Children and Adolescents – A Proof-of-Principle Study	
11:40-12:00	David Grayden Forum on Initiatives in Biomedical Engineering Education in Australia	
12:00-12:20		
12:30-13:45	LUNCH <i>Exhibition Hall, Conference rooms, Level 10</i>	
14:15-15:45	Parallel Session 6A <i>Room: Derham Theatre, Mezzanine Level</i>	Parallel Session 6B <i>Room: South Room, Level 10</i>
13:45-14:15	Surgical Technology, Implantables and Cardiovascular Devices Chair: Rebecca Bailey, Royal Melbourne Hospital Invited Speaker Prof Jeffrey Rosenfeld, Alfred Hospital & Monash University <i>The past, present and future of the human brain computer interface</i>	Industry Standards and Regulatory Processes Chair: Peter Barrett Invited Speaker Prof Sally McArthur, Swinburne University <i>A Tale of Two Adventures in BioEngineering 4D Cell Culture Systems and the Medical Device Partnering Program in Victoria</i>
14:15-14:35	Khalid Alonazi Simulation of Aortic Valve State During Ventricular Support	Medical Devices Regulation of Emerging Medical Device Technology
14:35-14:55	Sanjiv Gunasekara Flow Analysis in a patient-specific arteriovenous fistula	Andrew Wood Opportunities and challenges in mHealth: a Swinburne perspective
14:55-15:15	Joanne Tipper Neural Cell Responses to Wear Debris from Metal-on-Metal Total Disc Replacements	Tim O'Meara Partnering in MedTech
15:15-15:35	Socrates Dokos A 3D Fluid-structure Interaction Model of Mitral Valve/Left Ventricular Dynamics	Panel Discussion
15:45-16:30	Plenary Session Speaker: Dana-Megan Rossi, BD Australia <i>Cybersecurity Vulnerability in Medical Devices</i> Chair: David Smith <i>Room: Derham Theatre, Mezzanine Level</i>	
16:30-17:00	CLOSING REMARKS	