Preface

The International Conference on Biomedical Engineering is a series of international conference in biomedical engineering held in Singapore and is jointly organised by the Faculty of Engineering of the National University of Singapore (NUS) and the Biomedical Engineering Society (Singapore) (BES). The objective of ICBME 2016, held from 7 – 10 December, was to provide local and international participants an invaluable opportunity to stay current on the latest scientific developments and emerging challenges of the biomedical engineering field.

Biomedical engineering is applied in most aspects of our healthcare ecosystem. From electronic health records to diagnostic tools to therapeutic, rehabilitative and regenerative treatments, the work of biomedical engineers is evident. Biomedical engineers work at the intersection of engineering, life sciences and healthcare. The engineers would use principles from applied science including mechanical, electrical, chemical and computer engineering together with physical sciences including physics, chemistry and mathematics to apply them to biology and medicine. Applying such concepts to the human body is very much the same concepts that go into building and programming a machine. The goal is to better understand, replace or fix a target system to ultimately improve the quality of healthcare.

ICBME 2016 received some 350 abstracts from 25 countries and the programme featured more than 120 speakers who spoke on new research and developments in six themes including BioImaging and BioSignals, Bio-Micro/Nanotechnologies, BioRobotics and Medical Devices, Biomaterials and Regenerative Medicine, BioMechanics and Mechanobiology, Engineering/Synthetic Biology across the four-day programme comprising 60 sessions.

Special sessions included the topics of Advances in Microfluidics and Nanofluidics, Bioelectronic Devices, Bioengineering the Heart, Bioimaging, Biomedical Engineering/Clinical Engineering, Biomedical Nanotechnology, Cardiovascular Flows, Engineering Biology/ Synthetic Biology, Flexible and Wearable Technologies, Health Informatics, IFMBE Health Technology Assessment, Integrated Nano-biomechanics: Biological Flow, Mechanobiology, Rehabilitation Robotics, Stem Cells and Organs-on-Chips, Surgical Robotics and Navigation.

The programme was also headlined by seven plenary lectures which include “Cell Therapy of Diabetes Mellitus and its Complications: How Far are we?” by Bernat Soria Escoms, “Bio-integrated and Bio-inspired Stretchable Electronics” by Yonggang Huang, “Recent Advances on Nature Inspired Tissue Engineering Approaches for the Regeneration of Different Tissues” by Rui L. Reis, “Innovative Healthcare is in the Palm of your Hand” by Luke Lee, “ Droplet Microfluidics for Single Cell Studies” by David A. Weitz, “Making MRI Safe for Implanted Devices” by John M. Pauly, and “Need Driven Innovation in Medical Technology: From I to I” by Lawrence Ho.

ICBME has attracted a greater number of participants on every occasion that it has met and we are proud to have received the continued endorsement of International Federation for Medical and Biological Engineering (IFMBE) and for the first time, the endorsement of the Agency for Science, Technology and Research (A*STAR), as well as those of many local and regional societies. Their support is a testament to the quality of the conference and we are heartened to have the participation from an impressive roster of highly respected and internationally renowned speakers to lead the programme. The faculty represented the region’s best of biomedical engineering and we hope it has provided an excellent opportunity for our fellow colleagues to contribute research and to keep abreast of the exciting developments in our field.

February 2017

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