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Editors

Efthymoulos Kyriacou
Department of Computer Science and Engineering
Frederick University
Nicosia
Cyprus

Stelios Christofides
Biomedical Research Foundation
Nicosia
Cyprus

Constantinos S. Pattichis
Department of Computer Science
University of Cyprus
Nicosia
Cyprus

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Preface

Medicon 2016 is the XIV in the series of regional meetings of the International Federation of Medical and Biological Engineering (IFMBE) in the Mediterranean. The goal of Medicon 2016 is to provide updated information on the state of the art on Medical and Biological Engineering and Computing under the main theme “*Systems Medicine for the Delivery of Better Healthcare Services*”.

Medical and Biological Engineering and Computing cover complementary disciplines that hold great promise for the advancement of research and development in complex medical and biological systems. Research and development in these areas are impacting the science and technology by advancing fundamental concepts in translational medicine, by helping us understand human physiology and function at multiple levels, by improving tools and techniques for the detection, prevention and treatment of disease. Medicon 2016 provides a common platform for the cross fertilization of ideas, and to help shape knowledge and scientific achievements by bridging complementary disciplines into an interactive and attractive forum under the special theme of the conference that is Systems Medicine for the Delivery of Better Healthcare Services. The programme consists of some 290 invited and submitted papers on new developments around the Conference theme, presented in 3 plenary sessions, 29 parallel scientific sessions and 12 special sessions.

More specifically the parallel scientific sessions cover the topics of Biomedical Signal Processing, Biomedical Imaging and Image Processing, Bioinstrumentation, Biosensors and Bio-Micro/Nano Technologies, Bioinformatics, Computational Biology and Systems Biology, Biomechanics, Robotics and Rehabilitation, Therapeutic and Diagnostic Systems, Devices and Technologies and Clinical Engineering, Healthcare Information Systems and Telemedicine, Technologies for Active Ageing and Wellbeing, Biomedical Engineering Education and Society, Clinical Engineering and Health Technology Assessment and Advanced Computational Modelling and Analytics.

The special sessions include the topics of mHealth Medical Video Communication Systems, Wearable Sensor Networks for Personalised Healthcare, Monitoring Foetal Assessment, Ambient Assisted Living Technologies based on Internet of Things, Real Time Ventilation Monitoring with Electrical Impedance Tomography, Rehabilitation Technologies/Systems, Optimizing the diagnostic value of Myocardial Perfusion Imaging using a dynamic phantom assembly, Health Technology Assessment in BME Education and Current and Future Trends in the HTA of Medical Devices.

Furthermore the Conference programme is highlighted by the three plenary sessions. The first one is a panel of experts that will discuss the Conference theme “**Systems Medicine for the Delivery of Better Healthcare Services**” by first presenting the conference theme from the perspective of their organisations, followed by a general discussion. The second plenary session is concentrating on the “**Frontiers of Neuroengineering**” with the presentations “*Mind and Machines*” by Nitish Thakor, “*Real Time Workload Assessment using EEG Signals in Virtual Reality Environments*”, by Shen Ren, Fabio Babiloni, Nitish V. Thakor and Anastasios Bezerianos, “*Effective use of multimodal imaging for affordable personalized medicine*”, by A.A. Ioannides and L.C. Liu and “*Neuroscience, brain training, precision medicine: quo vadis?*”, by P. Bamidis, followed by a general discussion. The theme of the 3rd plenary session is “**Medical Imaging in the Fight Against Disease**” with the presentations “*Image Analysis of Carotid Bifurcation Atherosclerotic Plaques and Stroke Risk Stratification using Ultrasound*”, by Andrew Nicolaides, “*Trainable COSFIRE filters for pattern recognition in medical imaging*” by Nicolai Petkov.

Particular thanks are expressed to the kind support and effort of a limited number of external sponsors to which we would like to express our appreciation.

Finally a heartfelt thanks to all of you, the participants for your paper contributions, wishing you every success in your work at the conference. We hope that Medicon 2016 will offer opportunities for professional growth, and establishing new contacts with fellow colleagues. Our intention is to do all we can to make your participation in Medicon 2016 worthwhile and your stay in Cyprus enjoyable and memorable. We hope you will appreciate this Proceedings volume as much as we are proud of it!

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