

International Society for Computerized Electrocardiology
41st Annual Conference
Omni Tucson National Resort, Tucson, Arizona, USA
Wednesday, April 13 - Sunday, April 17, 2016

Marek Malik, PhD, MD
Imperial College London
Conference Chair

Jean-Philippe Couderc, PhD
University of Rochester Medical Center
Conference Co-Chair

CONFERENCE PROGRAM

WEDNESDAY, 13 APRIL 2016

1530-1845 Pre-Conference Tutorial

Atrial Fibrillation: Clinical Challenges and Monitoring ECG Solutions

Chair: Jean-Philippe Couderc, University of Rochester Medical Center, Rochester, New York, USA

Co-Chair: David Albert, AliveCor, Inc., San Francisco, California, USA

1530-1545 Chair

Overview

1545-1630 Peter Ott, University of Arizona Health Sciences Center, Tucson, Arizona, USA

What to do with device recognized AF and population screening for AF

1630-1700 W. Brian Chiu, Mortara Instrument, Milwaukee, Wisconsin, USA

Standard multi-lead Holter technologies

1700-1715 Break

1715-1800 Mark Day and Judy Lenane, iRhythm Technologies, Inc., San Francisco, California, USA

Zio patch and AF detection

1800-1845 David Albert, AliveCor, Inc., San Francisco, California, USA

Finger ECG and AF detection

1845-2000 Opening Reception

THURSDAY, 14 APRIL 2016

0815-0830 Welcome & Opening Remarks

Marek Malik, Imperial College, London, United Kingdom

0830-1035 SESSION I: Selected Abstracts

Chair: Jean-Philippe Couderc, University of Rochester Medical Center, Rochester, New York, USA

0830-0835 Chair

Overview

0835-0850 Roger Abaecherli, Research & Development, Schiller AG, Baar, Switzerland

Intersubject variability and intrasubject reproducibility of 12-lead ECG metrics: Implications for human authentication

0850-0905 Discussion

0905-0920 Ljuba Bacharova, International Laser Center, Bratislava, Slovak Republic

QRS complex waveform indicators of impulse propagation slowing: a simulation study

0920-0935 Discussion

0935-0950 Daniel Guldenring, Ulster University, Belfast, United Kingdom
Computing the spatial QRS-T angle using reduced electrocardiographic lead sets

0950-1005 Discussion

0105-1020 John Wang, Philips Healthcare, Andover, Massachusetts, USA
Validation of the vessel-specific leads (VSLs) for acute ischemia detection on a dataset with non-ischemic ST-segment deviation

1020-1035 Discussion

1035-1055 Break

1055-1210 SESSION II: Pediatric ECGs

Chair: Konrad Brockmeier, Heart Center, University of Cologne, Cologne, Germany

1055-1110 Chair
Overview

1110-1125 Bettina Cuneo, University of Colorado School of Medicine, Denver, Colorado, USA
The fetal ECG and the fetal MCG

1125-1140 Discussion

1140-1155 Konrad Brockmeier, Heart Center, University of Cologne, Cologne, Germany
The ECG of the neonate and infant

1155-1210 Discussion

1210-1700 Lunch and Afternoon Discussions

1700-1800 POSTER SESSION 1

PRESENTERS:

Salah Al-Zaiti, University of Pittsburgh, Pittsburgh, Pennsylvania, USA
Widened QRS-T angle on the presenting 12-lead ECG indicates non-ST elevation myocardial infarction in patients with chest pain

Jorge Arroyo-Palacios, University of California San Francisco, San Francisco, California, USA
A behavioral approach describing parameter adjustments in alarm fatigue mitigation

Simon C. Chien, Philips Healthcare, Andover, Massachusetts and California Institute of Technology, Pasadena, California, USA
The relationship between ST depression in standard 12-leads and the ST elevation in extended leads

Jaume Coll-Font, Northeastern University, Boston, Massachusetts, USA
Can we track respiratory movement of the heart from the ECG itself--and improve inverse solutions too?

Jonathan Currie, Ulster University, Newtownabbey, Northern Ireland, United Kingdom
Using eye-tracking technology to capture the visual attention of nurses during interpretation of patient monitoring scenarios from a computer simulated bedside monitor

Reza Firoozabadi, Philips Healthcare, Andover, Massachusetts, USA
Improving STEMI screening by utilizing a diagnostic ECG algorithm in the monitoring environment

Eric Helfenbein, Philips Healthcare, Andover, Massachusetts, USA
Extraction of CPR compression rate from continuous patient monitoring pediatric ECG waveforms

Kathleen Hickey, Columbia University, New York, New York, USA
QTc prolongation may be a late biomarker of orthotopic heart transplantation (OHT) rejection

Jui-chien Hsieh, Yuan University, Taoyuan, Taiwan
A Cardiologist-centered app designed for faster inter-hospital ECG tele-consultation

Muammar Kabir, Oregon Health and Science University, Portland, Oregon, USA
Very-low frequency heart rate variability is depressed during hemodialysis session

Teri Kozik, St. Joseph's Medical Center, Stockton, California, USA
Repolarization abnormalities associated with consumption of energy drinks

Christoph Maier, Heilbronn University, Heilbronn, Germany

The Carrera Study: prospective evaluation of a Holter-based screening approach for sleep disordered breathing

Michele Pelter, University of California San Francisco, San Francisco, California, USA

Recurrent myocardial ischemia & symptoms are precursors to unplanned transfer from telemetry to the coronary care unit in hospitalized patients with suspected acute coronary syndrome

Golriz Sedaghat, Oregon Health and Science University, Portland, Oregon, USA

Quantitative assessment of vectorcardiographic loop morphology

1900-2005 SESSION III: Current ICD Risk Stratification Studies

Chair: Markus Zabel, University Medical Center Göttingen, Göttingen, Germany

1900-1905 Chair

Overview

1905-1920 Alfred E. Buxton, Beth Israel Deaconess Medical Center, Boston, Massachusetts, USA

Current ICD risk stratification studies, North American perspective (MEUSE-D)

1920-1935 Discussion

1935-1950 Markus Zabel, University Medical Center Göttingen, Göttingen, Germany

Current ICD risk stratification studies, European perspective (EU-CERT-ICD)

1950-2005 Discussion

2005-2015 Break

2015-2220 SESSION IV: Update on Regulatory Positions

Chair: Norman Stockbridge, U.S. Food and Drug Administration, CDER, Silver Spring, Maryland, USA

2015-2020 Chair

Overview

2020-2035 Norman Stockbridge, U.S. Food & Drug Administration, CDER, Silver Spring, Maryland, USA

From E14 to CIPA

2035-2050 Discussion

2050-2105 David Strauss, U.S. Food and Drug Administration, CDER, Silver Spring, Maryland, USA

Update on FDA electrocardiology research for drugs and devices

2105-2120 Discussion

2120-2135 Linda Ricci, U.S. Food and Drug Administration, CDRH, Silver Spring, Maryland, USA

Digital health technology and ECG – a regulatory perspective

2135-2150 Discussion

2150-2205 Konstantinos Makrodimitris, U.S. Food and Drug Administration, CDRH, Silver Spring, Maryland, USA

Cybersecurity of cardiac medical devices: integrity, availability, confidentiality and interoperability of data

2205-2220 Discussion

2220-2300 POSTER SESSION 1 – Continuing Discussion

FRIDAY, 15 APRIL 2016

0830-1035 SESSION V: ECG and Hemodialysis

Chair: Larisa Tereshchenko, Oregon Health and Science University, Portland, Oregon, USA

0830-0835 Chair

Overview

0835-0850 Debasish Banerjee, St. George's University Hospitals NHS Foundation Trust, London, United Kingdom

Epidemiology of cardiac and sudden cardiac death in hemodialysed patients

0850-0905	Discussion
0905-0920	Rulan Parekh, The Hospital for Sick Children and University Health Network, Toronto, Canada <i>ECG manifestation of electrolyte changes</i>
0920-0935	Discussion
0935-0950	Demitrios Poulidakos, Salford Royal NHS Foundation Trust, Manchester, United Kingdom <i>Challenges of ECG monitoring and ECG interpretation in dialysis units</i>
0950-1005	Discussion
1005-1020	Jonathan Waks, Harvard-Thorndike Arrhythmia Institute, Harvard Medical School, Boston, Massachusetts, USA <i>Role of ECG in risk stratification in hemodialysed patients</i>
1020-1035	Discussion

1035-1100 Break

1100-1235 SESSION VI: ECG and Genetics

Chair: Jørgen Kanters, Laboratory of Experimental Cardiology, Department of Biomedical Sciences, University of Copenhagen, Copenhagen, Denmark
Chair

1100-1105 *Overview*

1105-1120 Tuomas Oskari Kilpeläinen, Faculty of Health and Medical Sciences, University of Copenhagen, Copenhagen, Denmark
What is a genome wide association study and how is it performed

1120-1135 Discussion

1135-1150 Jørgen Kanters, Laboratory of Experimental Cardiology, Department of Biomedical Sciences, University of Copenhagen, Copenhagen, Denmark
Repolarization and genetics

1150-1205 Discussion

1205-1220 Morten S. Olesen, Laboratory for Molecular Cardiology, Department of Cardiology, The Heart Centre, University Hospital of Copenhagen, Rigshospitalet, Copenhagen, Denmark
Genetics and atrial fibrillation

1220-1235 Discussion

1235-1245 **ISCE Membership Meeting**

1225-1700 Lunch and Afternoon Discussions

1700-1800 POSTER SESSION 2

PRESENTERS:

Roger Abächerli, Research & Development, Schiller AG, Baar Switzerland

A correction formula for the ST segment of the AC-coupled electrocardiogram

Raymond Bond, Ulster University, Newtownabbey, Northern Ireland, United Kingdom

Human factors analysis of a novel engineering solution to the problem of electrode misplacement during 12-lead electrocardiogram acquisition

E. Harvey Estes, Jr., Duke University Medical Center, Durham, North Carolina, USA

The ECG components of the Romhilt-Estes score a risk predictors: What have we learned?

Yama Fakhri, Copenhagen University Rigshospitalet, Copenhagen, Denmark

Automatic algorithm for the determination of the Anderson-Wilkins acuteness score in patients with ST elevation myocardial infarction

Dirk Feild, Philips Healthcare, Andover, Massachusetts, USA

Sources of variability in QT calculations

Richard Fidler, University of California San Francisco, San Francisco, California, USA
Signal quality differences between Mason-Likar and Lund electrode configurations

Richard Gregg, Philips Healthcare, Andover, Massachusetts, USA
Left ventricular hypertrophy detection for Mason-Likar ECG electrode placement

Patricia Harris, Dominican University of California, San Rafael, California, USA
Frequency of apnea alarms generated during electrocardiographic impedance monitoring in mechanically ventilated patients

Meisam Hosseini, Office of Clinical Pharmacology, Office of Translational Science, CDER, US FDA, Silver Spring, Maryland, USA
Automated T-wave delineator algorithm for J-Tpeak and Tpeak-Tend

Jonas Isaksen, University of Copenhagen, Denmark and Schiller AG, Baar, Switzerland
Investigating the effects of the 0.05 Hz first-order high-pass filter on the electrocardiogram

Tommy Kwak, Advocate Illinois Masonic Medical Center, Chicago, Illinois, USA
Simple reconstruction of spatial QRS-T angle using morphology analysis of Philips 12-Lead Algorithm

Saman Parvaneh, Islamic Azad University, Tehran, Iran and Philips Research North America, Cambridge, Massachusetts, USA
Analysis of ECG in phase space for the prediction of spontaneous atrial fibrillation termination

Yalda Shahriari, University of California, San Francisco, California, USA
Perceptual image processing based ECG quality assessment

Peter Lyngoe Soerenson, Aalborg University, Aalborg, Denmark
Vectorcardiographic quantification of early repolarization

Jess Tate, University of Utah, Salt Lake City, Utah, USA
A pipeline for generating physiological volumetric ECG signals

Bert Vandenberg, University of Leuven, Leuven, Belgium and University Hospitals Leuven, Leuven, Belgium
Which correction formula for the QT-interval should be implemented in a computer based hospital wide QT-monitoring system?

1900-2000 Kenichi Harumi Plenary Address

Georg Schmidt, Technische Universität München, Munich, Germany
Post-extrasystolic cardiovascular response as risk predictor

2000-2010 Break

2010-2215 SESSION VII: Jos Willems Young Investigators Competition

Chair: Mary G. Carey, University of Rochester Medical Center, Rochester, New York, USA

Co-Chair: Shen Luo

2010-2015 Chair

Overview

2015-2030 Yama Fakhri, Copenhagen University Rigshospitalet, Copenhagen, Denmark

The initial ECG predicts myocardial salvage after primary percutaneous coronary intervention in patients with ST-elevation myocardial infarction presenting with symptoms for 12-72 hours

2010-2045 Discussion

2045-2100 Alan Kennedy, Nanotechnology and Integrated BioEngineering Centre, University of Ulster, Northern Ireland, United Kingdom

Automated detection of Atrial Fibrillation using RR intervals and multivariate based classification

2100-2115 Discussion

2115-2130 Travis Moss, University of Virginia School of Medicine, Charlottesville, Virginia, USA

Heart Rate Dynamics of Atrial Fibrillation in the Intensive Care Unit

2130-2145 Discussion

- 2145-2200 Jose Vicente, US FDA, CDER, Silver Spring, Maryland, USA and BSICoS Group, Aragón Institute for Engineering Research (I3A), IIS Aragón, University of Zaragoza, Zaragoza, Spain
Detecting late sodium current block on the ECG: biomarkers beyond QTc
- 2200-2215 Discussion

2215-2300 POSTER SESSION 2 – Continuing Discussion

SATURDAY, 16 APRIL 2016

0830-0935 SESSION VIII: Improving CRT Efficacy by ECG/EGM Analysis

Chair: Robert Stadler, Medtronic Cardiac Rhythm and Disease Management, Minneapolis, Minnesota, USA

0830-0835 Chair
Overview

0835-0850 Subham Ghosh, Medtronic Cardiac Rhythm and Disease Management, Minneapolis, Minnesota, USA

Body surface isochrones mapping to improve CRT response

0850-0905 Discussion

0905-0920 Robert Stadler, Medtronic Cardiac Rhythm and Disease Management, Minneapolis, Minnesota, USA

Monitoring and improving the consistency of CRT pacing

0920-0935 Discussion

0935-1040 SESSION IX: T-Wave Pattern Variability

Chair: Vladimir Shusterman, The University of Iowa, Iowa City, Iowa, USA

0935-0940 Chair
Overview

0940-0955 Jan Nemeč, Heart and Vascular Institute, University of Pittsburgh, Pittsburgh, Pennsylvania, USA
Physiological mechanisms, prevalence and clinical value of T-wave variability in different populations

0955-1010 Discussion

1010-1025 Mathias Baumert, School of Electrical and Electronic Engineering, The University of Adelaide, Adelaide, Australia

Signal Processing, detection and characterization of T-wave variability in real-life data

1025-1040 Discussion

1040-1100 Break

1100-1235 SESSION X: ECGs and Imaging

Chair: Nico Bruining, Thoraxcenter, Department of Cardiology, Erasmus MC, Rotterdam, The Netherlands

1100-1105 Chair
Overview

1105-1120 Nico Bruining, Thoraxcenter, Department of Cardiology, Erasmus MC, Rotterdam, The Netherlands

The importance of electrocardiology imaging for interventional cardiology

1120-1135 Discussion

1135-1150 Peter van Dam, UCLA Cardiac Arrhythmia Center, David Geffen School of Medicine at UCLA, Los Angeles, California, USA

What could we offer the interventionalist: 3D visualization of the ECG

1150-1205 Discussion

1205-1220 Linwei Wang, College of Computing and Information Sciences, Rochester Institute of Technology, Rochester, New York, USA
Noninvasive pre-ablation electrocardiographic imaging of post-infarction scar tissue
1220-1235 Discussion

1235-1700 Lunch and Afternoon Discussions

1700-1905 SESSION XI: Advances in Electrocardiographic Monitoring

Chair: Tomas Novotny, University Hospital Brno and Masaryk University, Brno, Czech Republic

1700-1705 Chair

Overview

1705-1720 Przemyslaw Guzik, Poznan University of Medical Sciences, Poznan, Poland

ECG by mobile technologies

1720-1735 Discussion

1735-1750 Suave Lobodzinski, California State University, Long Beach, California, USA

Clinical value of wearable ECG-patch technology: Convenience vs diagnostic accuracy

1750-1805 Discussion

1805-1820 Pavel Leinveber, International Clinical Research Center, St. Anne's University Hospital, Brno, Czech Republic

Ambulatory monitoring of myocardial ischemia: A valuable prognostic tool?

1820-1835 Discussion

1835-1850 Jan Kanovsky, University Hospital Brno and Masaryk University, Brno, Czech Republic

Right ventricle ST elevation – a neglected sign?

1850-1905 Discussion

1915 Banquet

Poster Awards

JWYI Awards

President's Remarks

Conference Chair's Remarks

SUNDAY, 17 APRIL 2016

0730-0900 Closing Breakfast