

International Society for Computerized Electrocardiology
43rd Annual Conference
The Chateaux Deer Valley, Park City, Utah, USA
Wednesday, April 25 – Sunday, April 29, 2018

David A. Strauss, MD, PhD
U.S. Food and Drug Administration
Silver Springs, Maryland, USA
Conference Chair

Cees A. Swenne, PhD
Leiden University Medical Center
Leiden, The Netherlands
Conference Co-Chair

CONFERENCE PROGRAM

WEDNESDAY, 25 APRIL 2018

- 1530-1830 PRE-CONFERENCE TUTORIAL - SERIAL ECG ANALYSIS
Chair: Cees A. Swenne, PhD, Leiden University Medical Center, Leiden, The Netherlands
1530-1550 Chair
 Overview
- 1550-1625 Daniel Guldenring, PhD, School of Engineering, Ulster University, Belfast, United Kingdom
 Lead interchanges and electrode misplacements, diagnostic consequences and automated correction strategies
- 1625-1700 Arie C. Maan, PhD, Leiden University Medical Center, Leiden, The Netherlands
 Diagnostic consequences of analyzing Mason-Likar ECGs, as single ECG and as serial ECG
- 1700-1720 Break
- 1720-1755 Cees A. Swenne, PhD, Leiden University Medical Center, Leiden, The Netherlands
 Spontaneous ECG Variability
- 1755-1830 Barry Brown, BSEE, MSCE, Mortara, a Hill-Rom Company, Milwaukee, Wisconsin, USA
 Could universal ECG comparison be practical in the future?
- 1830-2030 OPENING RECEPTION, Cash Bar, 1 hosted drink
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THURSDAY, 26 APRIL 2018

- 0815-0830 Welcome and Opening Remarks
 Conference Chair - David Strauss, MD, PhD, U.S. Food and Drug Administration, Silver Spring, Maryland, USA
- 0830-1035 Session I: Selected abstracts
Chair Cees Swenne, PhD, Leiden University Medical Center, Leiden, The Netherlands
- 0830-0835 Chair
 Overview
- 0835-0850 Teri Kozik, PhD, RN, St. Joseph's Medical Center, Stockton, California, USA
 Repolarization Changes in response to ENERGY drinks in a healthy adults during eXercise: The C-Energy-X Study

0850-0905 Discussion

0905-0920 Raymond Bond, PhD, Ulster University, Belfast, United Kingdom
Automation Bias and Interpreter Uncertainty when Reading 12-lead Electrocardiograms

0920-0935 Discussion

0935-0950 John Wang, PhD, Philips Healthcare, Andover, Massachusetts, USA
Criteria for ECG Detection of Acute Myocardial Ischemia: Sensitivity versus Specificity

0950-1005 Discussion

1005-1020 Daniel Guldenring, PhD, School of Engineering, Ulster University, Belfast, United Kingdom
A method to transform 12-lead ECGs to non-standard short-distance ECG leads

1020-1035 Discussion

1035-1055 Break

1055-1230 Session II: Big data, artificial intelligence and machine learning in electrocardiography
Chair Jean-Philippe Couderc, PhD, University of Rochester, Rochester, New York, USA

1055-1100 Chair
Overview

1100-1115 Joel Xue, GE Healthcare, Wauwatosa, Wisconsin, USA
Sensitivity of Deep Learning method for different ECG components

1115-1130 Discussion

1130-1145 D. Masoumeh Haghpanahi, PhD, iRhythm Technologies, San Francisco, California, USA
Cardiologist-Level Arrhythmia Detection with Deep Neural Networks

1145-1200 Discussion

1200-1215 Jonathan Rubin, Philips Healthcare, Cambridge, Massachusetts, USA
Densely Connected Convolutional Networks for Detection of Atrial Fibrillation from Short Single-Lead ECG Recordings

1215-1230 Discussion

1230-1700 Lunch and Afternoon Discussions

1700-1800 Poster Session 1 – cash bar, 1 hosted drink

1800-1900 Dinner

1900-2050 Session III: Device therapies for heart failure and sudden cardiac death
(Part 1 - Academic/FDA perspective and LBBB Challenge)
Chair Robbert Zusterzeel, MD, PhD, U.S. Food and Drug Administration, Silver Spring, Maryland, USA
Co-Chair Brett Atwater, MD, Duke University Hospital, Durham, North Carolina, USA

1900-1905 Chair
Overview of heart failure and overview of session

1905-1920 Brett Atwater, Duke University Hospital, Durham, North Carolina, USA
Cardiac Resynchronization Therapy: Life-Extending Therapy for Heart Failure Patients

1920-1935 Discussion

1935-1950 Kimberly Selzman, U.S. Food and Drug Administration, Silver Spring, Maryland, USA
FDA Perspective on Assessing the Clinical Benefit of ICD and CRT Devices

1950-2005 Discussion

2005--2020	Robbert Zusterzeel, MD, PhD. U.S. Food and Drug Administration, Silver Spring, Maryland, USA <i>The 2018 ISCE LBBB ECG Initiative</i>
2020-2035	TBD: Winner of LBBB Initiative (<i>identified on April 2nd</i>)
2035-2050	Discussion
2050-2100	<u>Break</u>
2100-2205	<u>Session IV: Device therapies for heart failure and sudden cardiac death</u> <u>(Part 2 – Industry Perspective)</u>
Chair	Robbert Zusterzeel, MD, PhD, U.S. Food and Drug Administration, Silver Spring, Maryland, USA
Co-Chair	Brett Atwater, MD, Duke University Hospital, Durham, North Carolina, USA
2100-2105	<i>Overview</i>
	Chair
2105-2120	Mark Brown, PhD, Medtronic, Minneapolis, Minnesota, USA <i>What do we mean when we say an ICD is undersensing VF?</i>
2120-2135	Discussion
2135-2150	Amy Brisben, PhD, Boston Scientific, Marlborough, Massachusetts, USA <i>How the S-ICD senses cardiac signals to maximize VF sensitivity and minimize cardiac oversensing</i>
2150-2205	Discussion
2205-2305	<u>POSTER SESSION 1 – Continuing Discussion, cash bar</u>

FRIDAY, 27 APRIL 2018

0830-1200	<u>Session V: Predictive analytics for patient monitoring in critical care medicine: balancing alarm fatigue (part 1) with novel predictive algorithms (part 2)</u> <u>Part 1 – Alarm Fatigue</u>
Chair	Marylin Hravnak, PhD, RN, University of Pittsburgh, Pittsburgh, Pennsylvania, USA
Co-Chair	Christopher Scully, PhD, U.S. Food and Drug Administration, Silver Spring, Maryland, USA
0830-0835	Chair
	<i>Overview</i>
0835-0850	Marylin Hravnak, PhD, RN, University of Pittsburgh, Pittsburgh, Pennsylvania, USA <i>A Call to Alarms: Current State and Future Directions in the Battle Against Alarm Fatigue</i>
0850-0905	Discussion
0905-0920	Brad Winters, MD, Johns Hopkins University, Baltimore, Maryland, USA <i>Clinical Approaches and Assessment Metrics for Alarm Fatigue</i>
0920-0935	Discussion
0935-0950	Xiao Hu, PhD, University of California San Francisco, San Francisco, California, USA <i>Precise Patient Monitoring with Few False Alarms</i>
0950-1005	Discussion
1005-1025	<u>Break</u>
1025-1200	<u>Session VI: Predictive analytics for patient monitoring in critical care medicine: balancing alarm fatigue (part 1) with novel predictive algorithms (part 2)</u> <u>Part 2 – Novel Predictive Algorithms</u>

Chair Randall Moorman, MD, University of Virginia, Charlottesville, Virginia, USA
Co-Chair Christopher Scully, PhD, U.S. Food and Drug Administration, Silver Spring, Maryland, USA
1025-1030 Chair
Overview

1030-1045 Randall Moorman, MD, University of Virginia, Charlottesville, Virginia, USA
Predictive analytics monitoring at the bedside: Principles and practice

1045-1100 Discussion
1100-1115 Artur Dubrawski, PhD, Carnegie Mellon University, Pittsburgh, Pennsylvania, USA
Learning to discern artifact from true alerts

1115-1130 Discussion
1130-1145 Christopher Scully, PhD, U.S. Food and Drug Administration, Silver Spring, Maryland, USA
Regulatory Science for Patient Monitoring Predictive Analytics

1145-1200 Discussion

1200-1700 Lunch and Afternoon Discussions

1700-1800 Poster Session 2 – cash bar, 1 hosted drink

1800-1900 Dinner

1900-1950 Kenichi Harumi Plenary Address
Peter Clemmensen, MD, PhD, Region Sjælland - Nykøbing Falster Hospital, Nykøbing Falster, Denmark

1950-2000 Break

2000-2205 Session VII: Jos Willems Early Career Investigators Competition
Chair Mary G. Carey, RN, PhD, Univ. of Rochester, Rochester, New York, USA
Co-Chair Shen Luo, PhD, StarCare Medical, LLC, Madison, Wisconsin, USA
2000-2010 Chair
Overview

2010-2025 Elien Engels, Maastricht University, Maastricht, The Netherlands
Improved response to cardiac resynchronization therapy using multipoint pacing cannot solely be explained by better resynchronization

2025-2040 Discussion
2040-2055 Elyar Ghafoori, University of Utah, Salt Lake City, Utah, USA
Atrial Fibrillation Observed On Surface ECG Can Be Atrial Flutter

2055-2110 Discussion
2110-2125 Jonas Isaksen, University of Copenhagen, Copenhagen, Denmark
T-wave morphology in type 1 diabetes mellitus

2125-2140 Discussion
2140-2155 Ran Xiao, University of Oklahoma, Norman, Oklahoma, USA
Identification of Ischemic ST Changes through Deep Learning

2155-2205 Discussion

2205-2305 POSTER SESSION 2 – Continuing Discussion, cash bar

SATURDAY, 28 APRIL 2018

- 0830-1005 Session VIII: Identifying, diagnosing and guiding invasive treatment for atrial fibrillation from wearable devices to electrocardiographic imaging to guide ablation
Part 1: ECG and wearable devices for detecting heart rate, a-fib and other waveforms
- Chair Michele Pelter, RN, PhD, University of California San Francisco, San Francisco, California, USA
Co-Chair Loriano Galeotti, PhD, U.S. Food and Drug Administration, Silver Spring, Maryland, USA
0830-0835 Chair
Overview
- 0835-0850 Kais Gadhomi, PhD, University of California San Francisco, San Francisco, California, USA
A comparative study of photoplethysmographic signals in wrist-worn and pulse-oximetry devices for the detection of atrial fibrillation in patients with ischemic stroke
- 0850-0905 Discussion
0905-0920 TBD
Title
- 0920-0935 Discussion
0935-0950 Linda Ricci, U.S. Food and Drug Administration, Silver Spring, Maryland, USA
FDA perspective and overview on wearable devices
- 0950-1005 Discussion
- 1005-1020 Break
- 1020-1155 Session IX: Identifying, diagnosing and guiding invasive treatment for atrial fibrillation from wearable devices to electrocardiographic imaging to guide ablation
Part 2: Electrocardiographic imaging (inverse solution) – application to atrial fibrillation
- Chair Rob MacLeod, PhD, University of Utah, Salt Lake City, Utah, USA
1020-1025 Chair
Overview
- 1025-1040 Maria Guillem, Universitat Politècnica de València, València, Spain,
State of Electrocardiographic Imaging in Atrial Fibrillation
- 1040-1055 Discussion
1055-1110 Joaquin Azpilicueta, EP Solutions, Yverdon-les-Bains, Switzerland
ECGi in AFIB: A clinician wish list
- 1110-1125 Discussion
1125-1140 John Sapp, Jr., MD, Dalhousie University, Halifax, Nova Scotia, Canada
Mapping and Ablating Ventricular Tachycardia: Perfect or Pragmatic?
- 1140-1155 Discussion
- 1155-1700 Lunch and Afternoon Discussions
- 1700-1900 Session X: Update on International Initiatives and Standards
- Chair Fabio Badilini, AMPS LLC, New York, New York, USA and University of California San Francisco, San Francisco, California, USA
Co-Chair Brian Young, GE Healthcare, Wauwatosa, Wisconsin, USA
1700-1705 Chair
Overview
- 1705-1720 Jose Vicente, U.S. Food and Drug Administration, Silver Spring, Maryland, USA
Update on the ECG component of the CiPA initiative

1720-1735 Discussion
1735-1750 Brian Young, GE Healthcare, Wauwatosa, Wisconsin, USA
Updates to IEC/AAMI ECG standards, a New Hybrid standard
1750-1805 Discussion
1805-1820 Jean-Philippe Couderc, University of Rochester, Rochester, New York, USA
Existing and emerging ECG databases: the good, the bad, and the ugly
1820-1835 Discussion
1835-1850 Fabio Badilini, AMPS LLC, New York, New York, USA
Exchange of digital ECGs: do we have enough formats?
1850-1905 Discussion

1915-2200 Dinner Banquet
- Poster Awards
- Jos Willems Early Career Investigators Competition Awards
- President's Remarks
- Conference Chair's Remarks

SUNDAY, 29 APRIL 2018

0730-900 Closing Breakfast