

**International Society for Computerized Electrocardiology
42nd Annual Conference
King and Prince Beach and Golf Resort, St. Simons Island, Georgia, USA
Wednesday, April 19 - Sunday, April 23, 2017**

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

David Strauss, MD, PhD
Food & Drug Administration
Conference Co-Chair

CONFERENCE PROGRAM

WEDNESDAY, 19 APRIL 2017

1530-1830 Pre-Conference Tutorial

Dr. Galen Wagner's Memorial-50 Years of ECG Research and Mentoring

Chair: David Strauss, Food & Drug Administration, Silver Spring, Maryland, USA

Co-Chair: Staff Warren, Chesapeake Cardiac Care, Annapolis, Maryland, USA

1530-1545 Chair

Overview

1545-1605 Staff Warren, Chesapeake Cardiac Care, Annapolis, Maryland, USA

ECG studies of a human model of ischemia during prolonged angioplasty—STAFF studies and Duke Cardiology fellow research mentoring experience

1605-1625 Peter Clemmensen, Nykoebing Falster Hospital, Falster, Denmark

Ischemia risk stratification with the ECG – visiting research fellow at Duke – Copenhagen research mentoring experience

1625-1645 Olle Pahlm, Lund University, Lund, Sweden

STAFF studies (ischemia) to MALT meeting (ECG and imaging) and beyond – Lund research mentoring experience

1645-1700 Break

1700-1720 Björn Wieslander, Karolinska Institute, Stockholm, Sweden

MRI as a "gold standard" for ECG quantification of infarction - Karolinska research mentoring experience

1720-1740 David Strauss, Food & Drug Administration, Silver Spring, Maryland, USA

Validating and applying the Selvester QRS scoring system - Duke medical student research mentoring experience

1740-1800 Robbert Zusterzeel, Food & Drug Administration, Silver Spring, Maryland, USA

Dyssynchrony and cardiac resynchronization therapy - Maastricht research mentoring experience

1800-1830 Audience comments about Dr. Wagner and discussion

1830-2000 Opening Reception, cash bar, 1 hosted drink

THURSDAY, 20 APRIL 2017

0715-0815	Breakfast
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0815-0830	<u>Welcome & Opening Remarks</u> Jean-Philippe Couderc, University of Rochester Medical Center, Rochester, New York, USA
0830-1035	<u>SESSION I: Selected Abstracts</u>
Chair:	David Strauss, Food & Drug Administration, Silver Spring, Maryland, USA
0830-0835	Chair <i>Overview</i>
0835-0850	Salah Al-Zaiti, University of Pittsburgh School of Nursing, Pittsburgh, Pennsylvania, USA <i>A novel method to quantify the ischemia-induced, beat-to-beat repolarization lability in standard 12-Lead ECG signals in patients with chest pain</i>
0850-0905	Discussion
0905-0920	Antonio Luiz Pinho Ribeiro, Federal University of Minas Gerais (UFMG), Brazil <i>Normal ranges of electrocardiogram measurements for the Brazilian population</i>
0920-0935	Discussion
0935-0950	Maria Sejersten, Herlev University Hospital, Herlev, Denmark <i>Electrocardiographic scores of myocardium at risk underestimate the risk region compared to measurements by cardiac magnetic resonance in patients with STEMI</i>
0950-1005	Discussion
1005-1020	Peter van Dam, Cardiac Arrhythmia Center, University of California, Los Angeles, California, USA <i>Characteristics and accuracy of a new Vector approach within CIPS to localize PVCs from the 12 lead ECG</i>
1020-1035	Discussion

1035-1055	Break
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1055-1230	<u>SESSION II: ECG and Blood Pressure</u>
Chair:	Gari Clifford, Emory University and Georgia Institute of Technology, Atlanta, Georgia, USA
1055-1100	Chair <i>Overview</i>
1100-1115	Matthew Stanley, Emory University, Atlanta, Georgia, USA <i>Early sepsis detection in critical care patients utilizing high-resolution blood pressure and ECG dynamics: A validation study</i>
1115-1130	Discussion
1130-1145	Adriana Vest, Emory University, Atlanta, Georgia, USA <i>A validated cardiovascular dynamics toolbox for research</i>
1145-1200	Discussion
1200-1215	Shamim Nemati, Emory University, Atlanta, Georgia, USA <i>Detecting heart failure using wearables: A pilot study</i>
1215-1230	Discussion

1230-1700	Lunch and Afternoon Discussions
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1700-1800	<u>POSTER SESSION 1, cash bar, 1 hosted drink</u>
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PRESENTERS:
David Albert, AliveCor, Inc., Mountain View, California, USA
Recording unipolar ECG leads using one limb of the Wilson central terminal

- Saeed Babaeizadeh, Philips Healthcare, Andover, Massachusetts, USA
Robust estimation of cardiac inter-beat intervals using photoplethysmography
- Andrew Cairns, Ulster University, Computer Science Research Institute, Belfast, United Kingdom
 Variability of human-annotations of 12-lead ECG features collected using a web system: Students vs. practitioners
- Gari Clifford, Emory University and Georgia Institute of Technology, Atlanta, Georgia, USA
Combining multiple cardiac output estimators to reduce prediction error
- Yama Fakhri, Rigshospitalet and Nykøbing F Hospital, Copenhagen, Denmark
Electrocardiographic scores of severity and acuteness of myocardial ischemia predict myocardial salvage in patients with anterior ST-segment elevation myocardial infarction
- Richard Gregg, Philips Healthcare, Andover, Massachusetts, USA
Can vectorcardiogram criteria unmask inferior Q-waves in Mason-Likar 12-lead ECG?
- Daniel Guldenring, Ulster University, Belfast, United Kingdom
Limitations of the smartphone based single ECG-lead evaluation of STEMI
- Meisam Hosseini, Food and Drug Administration, Silver Spring, Maryland, USA
Map of thorough QT studies with QTc and J-Tpeakc biomarkers
- Jonas Isaksen, Laboratory of Experimental Cardiology, University of Copenhagen, Denmark
QT-prolongation in type 1 diabetes is augmented during bradycardia
- Jørgen Kanters, Laboratory of Experimental Cardiology, University of Copenhagen, Copenhagen, Denmark
Genome-wide association study of T-wave morphology
- Michele Pelter, University of California San Francisco, San Francisco, California, USA
Visible but wide QRS complexes are associated with false asystole alarms
- Erik A. Perez-Alday, Knight Cardiovascular Institute, Oregon Health and Science University, Portland, Oregon, USA
Torso mesh and body surface electrodes position reconstruction using a Kinect camera
- Ramun Schmid, Schiller AG, Baar, Switzerland
A Kalman filter based adaptive impulse correlated filter
- Ivo Strebel, CRIB, University Hospital Basel, University Basel, Basel, Switzerland
Diagnostic and prognostic value of the QRS-T-Angle, an ECG marker quantifying heterogeneity of depolarization and repolarization, in patients with suspected non-ST-elevation myocardial infarction
- Adelita Tinoco, University of San Francisco, San Francisco, California, USA
ECG-derived Cheyne-Stokes respirations are associated with acute coronary syndrome, transient ischemia and elevated biomarkers
- Bert Vandenberg, Department of Cardiovascular Sciences, KU Leuven, Department of Cardiology, University Hospitals Leuven, Belgium
Automated quantitative assessment of QRS fragmentation can improve non-invasive risk stratification
- Jessica Zegre-Hemsey, University of North Carolina at Chapel Hill, Chapel Hill, North Carolina, USA
Pulse oximetry parameters to augment detection of myocardial ischemia - a feasibility study

1800-1900 **Dinner**

1900-2035 **SESSION III: The JTpeak Initiative (Part 1)**

- Chair: Mathias Baumert, The University of Adelaide, School of Electrical Engineering, Adelaide, Australia
- 1900-1905 Chair
Overview
- 1905-1920 Wojciech Zareba, University of Rochester Medical Center, Rochester, New York, USA
JT Interval: What does this interval mean?
- 1920-1935 Discussion
- 1935-1950 Fabio Badilini, AMPS LLC, Montichiari, Province of Brescia, Italy
JTpeak Initiative for ISCE 2017 Meeting

1950-2005 Discussion
2005-2020 W. Brian Chiu, Mortara Instrument, Inc., Milwaukee, Wisconsin, USA
The J to T-peak interval as a biomarker in drug safety studies: A method of accuracy assessment applied to two algorithms.
2020-2035 Discussion

2035-2055 Break

2055-2200 SESSION IV: The JTpeak Initiative (PART 2)

Chair: Mathias Baumert, The University of Adelaide, School of Electrical Engineering, Adelaide, Australia

2055-2100 Chair
Overview

2100-2115 Simon Chien, Advanced Algorithm Research Center, Philips Healthcare, Andover, Massachusetts, USA; Department of Electrical Engineering, California Institute of Technology, Pasadena, California, USA

The Algorithmic Performance of JTpeak for Drug Safety Clinical Trials

2115-2130 Discussion

2130-2145 Shiyang Ma, University of Rochester, Department of Biostatistics and Computational Biology, Rochester, New York, USA

Summary of results from all participants

2145-2200 Discussion

2200-2300 POSTER SESSION 1 – Continuing Discussion, cash bar

FRIDAY, 21 APRIL 2017

0730-0830 Breakfast

0830-1005 SESSION V: Visualization of the Digital ECG

Chair: Raymond Bond, Ulster University, Belfast, United Kingdom

Co-Chair: Paul Kligfield, Weill Cornell Medical College, New York, New York, USA

0830-0835 Chair
Overview

0835-0850 Roberto Sassi, The University of Milan, Computer Science Department, Milan, Italy
ECG-PDF and proposed tools: A framework to preserve and present the digital ECG – two birds, one stone?

0850-0905 Discussion

0905-0920 Andrew Cairns, Ulster University, Computer Science Research Institute, Belfast, United Kingdom
Interactive tablet PC-based visualization system for providing decision support in ECG interpretation

0920-0935 Discussion

0935-0950 Alex Page, University of Rochester, Rochester, New York, USA
Data mining and visualizing the ambulatory ECG

0950-1005 Discussion

1005-1025 Break

1025-1200 SESSION VI: Global Measures of Repolarization Heterogeneity

Chair: David Mortara, Mortara Instrument, Inc., Milwaukee, Wisconsin, USA

1025-1030	Chair <i>Overview</i>
1030-1045	Robert Lux, University of Utah, Salt Lake City, Utah, USA <i>Basis and ECG measurement of global repolarization</i>
1045-1100	Discussion
1100-1115	Larisa Tereshchenko, Oregon Health and Science University, Knight Cardiovascular Institute, Portland, Oregon, USA <i>Development of SAI QRST and combining all three measures together as GEH</i>
1115-1130	Discussion
1130-1145	Konstantinos Rizas, Ludwig-Maximilians-University of Munich, Munich, Bavaria, Germany <i>Periodic repolarization dynamics and its clinical implications</i>
1145-1200	Discussion
1200-1210	<u>ISCE Membership Meeting</u>

1210-1700 Lunch and Afternoon Discussion

1700-1800 POSTER SESSION 2, cash bar, 1 hosted drink

PRESENTERS:

- Roger Abächerli, Lucerne University of Applied Sciences and Arts, Lucerne, Switzerland
Human verification by cross-correlation analysis of 12-lead ECG patterns: Ranking of the most reliable peripheral and chest leads
- Salah Al-Zaiti, University of Pittsburgh, Pittsburgh, Pennsylvania, USA
Spatial indices of repolarization correlate with non-STelevation myocardial ischemia in patients with chest pain
- Adam Canning, Department of Cardiology, Altnagelvin Hospital, Derry/Londonderry, Western Health and Social Care Trust, Northern Ireland, United Kingdom
Variable diagnostic accuracy in reading ECGs in a nurse-led primary PCI pathway
- Simon Chien, Philips Healthcare, Andover, Massachusetts, USA
The systematical approach to ventricular ECG forward modeling for exploring the electro-physiological properties of myocyte
- Chathuri Daluwatte, Food and Drug Administration, Silver Spring, Maryland, USA
Relationship between ECG beat detector performance over short time intervals and correct detection of arrhythmic events
- Dirk Feild, Philips Healthcare, Camarillo, California, USA
Stability of Automatic JTp Measurements
- Reza Firoozabadi, Philips Healthcare, Thousand Oaks, California, USA
Efficient noise-tolerant estimation of heart rate variability using single-channel photoplethysmography
- Kathleen Hickey, Columbia University School of Nursing, New York, New York, USA
ECG correlates of acute allograft rejection among heart transplant recipients in the NEW HEART Study
- Ghalib Muhammad Waqas Janjua, Ulster University, Northern Ireland, United Kingdom
Independent measurement of high blood pressure changes in cuff-less blood pressure monitoring
- Alan Kennedy, Ulster University, Belfast, United Kingdom
Bipolar chest leads revisited: The optimal placement of patch based ECG devices
- Sunipa Saha, Boston Scientific, St. Paul, Minnesota, USA
Improved AF rhythm discrimination using QRS morphology
- David Schreck, Atlantic Health System, Morristown, New Jersey, USA
Bayesian analysis of a new cardiac electrical biomarker
- David Sprenkeler, University Medical Center Utrecht, Utrecht, The Netherlands
Diurnal dynamics of short-term variability of the QT-interval in a primary prevention ICD-population

Sophia Zhou, Philips Research, Cambridge, Massachusetts, USA

Ensemble tree classifier to identify root causes of false alarms at hospital level

John Wang, Philips Healthcare, Andover, Massachusetts, USA

Advances in ECG-based cardiac ischemia monitoring - A review

Bjorn Wieslander, Karolinska University Hospital and Karolinska Institutet, Stockholm, Sweden

Pathological S-wave in lead I in left bundle branch block is associated with MRI scar and reduced left ventricular function

Elena Zaklyazminskaya, Petrovsky Russian Research Centre of Surgery, Moscow, Russia

Ambiguous phenotypic expression of some mutations in the cardiac Nav1.5 sodium channel

1800-1900 **Dinner**

1900-2000 **KENICHI HARUMI PLENARY ADDRESS**

Jonathan Steinberg, MD

University of Rochester School of Medicine

Short Hills, NJ

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, StarCare Medical, LLC, Madison, Wisconsin, USA

2010-2015 Chair

Overview

2015-2030 Karina Kück, University of Copenhagen, Denmark

Abnormally low QRST angle is a new predictor for all-cause mortality in males

2030-2045 Discussion

2045-2100 Travis Moss, University of Virginia, Charlottesville, Virginia, USA

Continuous ECG monitoring of cardiorespiratory dynamics detects clinical deterioration in acute care patients with cardiovascular disease

2100-2115 Discussion

2115-2130 Golriz Sedaghat, Knight Cardiovascular Institute, Oregon Health and Science University, Portland, Oregon, USA

Correlation between the high-frequency content of the QRS on murine surface electrocardiogram and the sympathetic nerves density in left ventricle after myocardial infarction

2130-2145 Discussion

2145-2200 Amit Shah, Emory University, Atlanta, Georgia, USA

Development of an ECG-based score to assess myocardial scar

2200-2215 Discussion

2215-2315 **POSTER SESSION 2 – Continuing Discussion, cash bar**

SATURDAY, 22 APRIL 2017

0730-0830 **Breakfast**

0830-1050 **SESSION VIII: The Role of the Electrocardiogram and In Silico Modeling for the Assessment of Proarrhythmic Risk of Drugs**

Chair: Lars Johannesen, Food & Drug Administration, Silver Spring, Maryland, USA

Co-chair: Jay Mason, University of Utah, Salt Lake City, Utah, USA

- 0835-0850 Chair
Overview
- 0850-0905 Gary Mirams, Centre for Mathematical Medicine & Biology, School of Mathematical Sciences, University of Nottingham, Nottingham, United Kingdom
Mechanistic in silico models for proarrhythmic risk prediction
- 0905-0920 Discussion
- 0920-0935 Jose Vicente, Food & Drug Administration, Silver Spring, Maryland, USA
Electrocardiographic biomarkers to confirm drug's electrophysiological effects used for proarrhythmic risk prediction under CiPA
- 0935-0950 Discussion
- 0950-1005 Marek Malik, St. Paul's Cardiac Electrophysiology, University of London and Imperial College, London, United Kingdom
QT interval segments and their relationship to heart rate
- 1005-1020 Discussion
- 1020-1035 Jay Mason, University of Utah, Salt Lake City, Utah, USA
Cardiologist's point of View: Novel ECG biomarkers and in silico models for proarrhythmic risk prediction; are we ready?
- 1035-1050 Discussion

1050-1100 Break

1100-1305 SESSION IX: Clinical Applications of Wearable Devices

- Chair: Suave Lobodzinski, California State University, Long Beach, California, USA
- Co-Chair: Emanuela Locati, Hospital Niguarda Ca Granda, Milan, Italy
- 1100-1105 Chair
Overview
- 1105-1120 Emanuela Locati, Hospital Niguarda Ca Granda, Milan, Italy
ISHNE guidelines (2016) for ambulatory monitoring
- 1120-1135 Discussion
- 1135-1150 Roger Abächerli, Lucerne University of Applied Sciences and Arts, Lucerne, Switzerland
Wearable cardiac monitors – state of the art and the future outlook
- 1150-1205 Discussion
- 1205-1220 Suave Lobodzinski, California State University, Long Beach, California, USA
Limitations and pitfalls of wearable cardiac monitors and their comparison to Holter
- 1220-1235 Discussion
- 1235-1250 Juan Alcántara, Nuubo, Madrid, Spain
Wearable ECG devices for Afib detection. Clinical Monitoring strategies and results for 24 hours, 7 days, 21 days and 30 days
- 1250-1305 Discussion

1305-1600 Lunch and Afternoon Discussions

1600-1700 A TRIBUTE TO MIKE LAKS

- Chair: Suave Lobodzinski, California State University, Long Beach, California, USA
- Speakers: Suave Lobodzinski
Paul Kligfield
Barbara Drew
Peter van Dam
Roger Abächerli

1700-1905	<u>SESSION X: ECG Technologies – Debatable Issues</u>
Chair:	Peter Macfarlane, University of Glasgow, Scotland, United Kingdom
Co-Chair:	Peter Clemmensen, Nykoebing Falster Hospital, Falster, Denmark
1700-1705	Chair <i>Overview</i>
1705-1720	<i>Automated ECG interpretation is beneficial even in major hospitals with experienced overreaders</i> <ul style="list-style-type: none"> • <i>For:</i> Jay Mason, University of Utah, Salt Lake City, USA • <i>Against:</i> Paul Kligfield, Weill Cornell Medical College, New York, New York, USA
1720-1735	Discussion
1735-1750	<i>24/7 monitoring out of hospital is not a viable concept when nursing staff switch off alarms in hospitals</i> <ul style="list-style-type: none"> • <i>For:</i> Claire Sommargren, University of California, San Francisco, California, USA • <i>Against:</i> Barbara Drew, University of California, San Francisco, California, USA
1750-1805	Discussion
1805-1820	<i>ECG imaging is a superb, clinically cost-effective diagnostic tool</i> <ul style="list-style-type: none"> • <i>For:</i> Peter van Dam, Cardiac Arrhythmia Center, University of California, Los Angeles, California, USA • <i>Against:</i> Roger Abächerli, Lucerne University of Applied Sciences and Arts, Lucerne, Switzerland
1820-1835	Discussion
1835-1850	<i>The public are being misled by single channel ECG recording devices</i> <ul style="list-style-type: none"> • <i>For:</i> Morrison Hodges, Minneapolis Heart Institute Foundation, Plymouth, Minnesota, USA • <i>Against:</i> David Albert, AliveCor, Inc., Mountain View, California, USA
1850-1905	Discussion
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1915-2200	Dinner Banquet
	- Poster Awards
	- JWYI Awards
	- President's Remarks
	- Conference Chair's Remarks
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SUNDAY, 23 APRIL 2017

0730-0900	Closing Breakfast
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