



The 10<sup>th</sup> International  
Conference on  
Complexity in Acute Illness  
September 10-12, 2010, Atlanta, GA



## **Program for the 10<sup>th</sup> International Conference on Complexity in Acute Illness**

Conference location:

Atlanta Gateway Marriott Hotel 2077 Convention Center Concourse College Park, GA 30337 -  
(404) 763-1544

Atlanta Gateway Marriott Hotel 2020 Convention Center Concourse, Atlanta, Georgia 30337 USA, Phone:  
1-404-763-1544

### **Friday, September 10**

8:00 – 8:45 AM: Breakfast

8:45 – 9:00 AM: Welcome and Introductory Remarks (Cohen/Batchinsky)

Morning Session. Title: Unraveling fundamental laws in Biology: Dynamic models and biological interactions during acute illness

Moderator: Tim Buchman. Panelists: Benjamin Mann, Ary Goldberger, Joe Palma?, Chris Macedonia, Atul Butte.

9:00 – 9:25 AM: Benjamin Mann, title TBD

9:25– 9:50 AM: Ary Goldberger, title TBD

9:50 – 10:15 AM: Joe Palma? TBD

10:15 –10:40 AM: Chris Macedonia, title TBD

10:40 – 11:05 AM: Atul Butte, title TBD

11:05 – 12:00 Questions and Free discussion (moderator and experts)

12:00 – 1:00 PM: Lunch

Afternoon Session 1. Title: Monitoring Biological Control and Regulation:

Moderator: John Karemaker PhD Panelists: Bruce West; Dwain Eckberg, USA; Tom Kuusela, Finland, John Doyle, USA).

1:00 – 1:20 PM: John Karemaker: Overview of the cardiovascular regulatory system. Blood pressure variability.

1:20 – 1:40 PM: Dwain Eckberg: Measuring cardiovascular regulation using heart rate variability analysis: what it is and what it is not.

1:40 – 2:00 Bruce West: Semantics of complexity: implications for understanding control in physiology

2:00 – 2:20 Tom Kuusela: Measuring cardiovascular control using tools from nonlinear dynamics: from physics to physiology and back.

2:20 – 2:40 **Ted Dick**, Rishi Dhingra, Frank Jacono, Christopher G. Wilson, Kenneth A. Loparo, Mikkel Fishman and Ilya Rybak (Drexel University): Breathing Pattern Variability: Neural Mechanisms & Modeling.

2:40 – 3:00 John Doyle: Cardiovascular control and regulation: from mathematics to physiology and back.

3:00 – 3:30 Questions and Free Discussion (moderator and experts). Refreshments.

#### Afternoon Session 2. Title: Invited Overview Talk: Modeling methods and tools

Moderator: Gary An Panelists: Ioannis Androulakis, Scott Diamond, Eberhard Voit, Yoram Vodovotz.

3:30 – 3:50 Gary An: Knowledge Representation and Synthesis via Computational Modeling Expert talk 20 min

3:50 – 4:10 Ioannis Androulakis: Tentative title: Towards a Mechanistic Understanding of Inflammation and Physiologic Variability

4:10 – 4:30 Scott Diamond: Novel Methods and Approaches to Modeling Coagulation

4:30 – 4:50 Eberhard Voit: Topic TBD

4:50 – 5:10 Yoram Vodovotz: Computational Models of Inflammation: Translational Applications to Acute Illness

5:10 – 6:00 Questions and Free Discussion (moderator and experts). Refreshments.

**6:00 – 7:00 Poster Session (Dinner at posters) Expert review of posters.**

Chairs: Gilles Clermont, Sven Zenker.

7:00 PM + /free time

## **Saturday, September 11**

7:00 – 8:00 AM: Breakfast

Morning Session.

Title: Multidisciplinary Translational Research: From Fundamental Science to Practice. Life-saving interventions and other clinical outcome measures.

Moderator: Charles Wade, PhD, Mitch Cohen MD.

Panelists: John Holcomb, Edmund Neugebauer, Leopoldo Cancio, Jose Salinas, Andriy Batchinsky, David Baer.

8:00 - 8:20 John Holcomb: Clinical Outcome Measures.

8:20- 8:40 Edmund Neugebauer: TBD

8:40 - 9:00 Leopoldo C. Cancio: Detecting the need for LSIs using biosensor-derived data

9:00 - 9:20 Jose Salinas: Development of a Decision Support Framework to Improve Time to Administration of LSIs

9:20 -9:40 Andriy Batchinsky: Tapering off Mechanical Ventilation: Objective Criteria for Weaning and Artificial Lung Support.

9:40 – 10:00 Mitchell Cohen TDB

10:00 – 10:20 David Baer: Rehabilitation of warriors and return to duty as an outcome measure

10:20 - 11:00 AM: Discussion (Dr. Wade and all co-chairs)

### **11:00 – 12:00 Presentations by Industry TBD**

12:00 – 1:00 PM: Lunch

### **Summit. Managing Information Flow at the Bedside: Toward Standardizing Clinical Use of Biological Signals**

1:00 – 1:45 PM: Keynote: Integration of biomedical informatics to clinical medicine. Perspective of the end-user of the Future. Marek Malik, UK

Afternoon Session 2. Title: Managing Information Flow at the Bedside: Current Monitoring Systems

Moderator: Brahm Goldstein. Panelists and Marek Malik: George Moody, Randall Moorman, Andrew Seely, Leo van Wolfswinkel, UMC Utrecht,

2:00 – 2:20 PM: Brahm Goldstein: Multivariate assessment of patient status at the Bedside

2:20 - 2:40 George Moody: Topic TBD

2:40 – 3:00 Randall Moorman Topic: Continuous risk prediction at the bedside: early diagnosis of sepsis in premature infants

3:00 – 3:20 Speaker TBD

3:20 – 3:40 Andrew Seely: Development and application of multiorgan variability monitoring.

3:40 - 4:00 Ivaylo Christov: Assessment of signal quality: implications for continuous monitoring at the bedside.

4:00 – 4:20 Patrick Norris: TBD

4:20 – 5:00 Discussion/Refreshments

Afternoon Session 3 Purpose: Define key areas of discussion of next day session.

5:00-6:30 Regulatory issues with biosensor-derived data.

5:00-5:20 Talk TBD.

Breakout session leaders: FDA rep, Jose Salinas

Panel: Michael O'Reilly (Masimo), Jose Salinas, Mark Darrah, George Moody USA, Rep from Oridion.

5:00-6:30 Development of methodological standards for use of physiologic waveform data in the clinical setting.

5:00-5:20 Talk TBD.

Breakout session leaders: Marek Malik, Andriy Batchinsky

Panel: Ivaylo Christov, Bulgaria, Anton Burykin, Tom Kuusela, Finland, Dwain Eckberg, USA, Douglas Lake.

5:00-6:30 Data capture, storage and assessment

5:00-5:20 Talk TBD.

Breakout session leaders George Moody and Patrick Norris

Panel: Jose Salinas USA, Leo van Wolfswinkel, UMC Utrecht, Keith Kocis, Craig G. Rusin

7:00 PM Gala dinner

**Goals on the sessions below will be defined during previous afternoon sessions and WEB survey**

**Sunday, September 12**

7:00 – 8:00 AM: Breakfast

Session on Goal 1. Session Leaders: TBD

8:00 – 9:00 AM: Development of standards and relationship with FDA and vendors

9:00 – 9:30 AM: Discussion/refreshments

Session on Goal 2. Session Leaders: TBD

9:30 – 10:30 AM: Methodological standards. Data capture, storage and integration.

10:30 – 11:00 PM: Discussion

Session on Goal 3. Session Leaders: TBD

11:00 – 12:00 PM: Requirements to the next generation monitoring systems.

12:00 – 12:30 PM: Discussion/boxed lunch/adjourn