

UC Davis Cardiovascular Symposium 2012

Systems Approach to Understanding Cardiac Excitation–Contraction Coupling & Arrhythmias Ca^{2+} Current and SR Ca^{2+} Release

UC Davis Conference Center

550 Alumni Lane – UC Davis Campus

Organizers: Don Bers, Ye Chen-Izu, Nip Chiamvimonvat, Leighton Izu

March 1 Sessions

- 8:00 – 9:50 AM Ca^{2+} channel structure-function
10:00-11:50 AM Ca^{2+} channel modulation
1:00 – 2:50 PM Ryanodine receptor structure-function
3:00 – 4:50 PM Ryanodine receptor modulation

March 2 Sessions

- 8:00 - 9:50 AM Ca^{2+} homeostasis
10:00 -11:50 AM Cardiac ECC: from excitation to Ca^{2+} signaling
1:00 -2:50 PM Cardiac ECC: from Ca^{2+} signaling to excitation
3:00 – 4:50 PM Ca^{2+} induced cardiac arrhythmias

Speakers & Discussion Leaders

Donald Bers	Sandor Gyorke	Thomas Shannon
Peter Backx	Johannes Hell	Karin Sipido
Penny Boyden	Leighton Izu	Nic Smith
Wayne Chen	Henk Ter Keurs	Eric Sobie
Nip Chiamvimonvat	Bjorn Knollmann	Mike Stern
Henry Colecraft	Jon Lederer	Natalia Trayanova
Igor Efimov	Isaac Pessah	Xander Wehrens
Eleonora Grandi	Brian O'Rourke	David Yue

Discussion Panelists

Wen Chen	Saleet Jaffri	Jose Puglisi	Dimitry Terentyev
Ye Chen-Izu	Alain Karma	Zhilin Qu	Hector Valdivia
David Christini	Tony Lai	Crystal Ripplinger	Andras Varro
Colleen Clancy	Ken Laurita	Jon Satin	Rui-Ping Xiao
Laszlo Csernoch	Javier Lopez	Daisuke Sato	Lai-Hua Xie
Marcel Egger	Aman Mahajan	Saul Schaffer	Ivan Zahradnik
Ariel Escobar	A. McCulloch	Todd Scheuer	A. Zahradnikova
Chris George	Ricardo Olcese	Scott Simon	Antonio Zaza
Stefan Herzig	Isaac Pessah	Greg Smith	Alex Zima

UC Davis Cardiovascular Symposium 2012, March 1-2

Systems Approach to Understanding Cardiac Excitation-Contraction Coupling and Arrhythmias — Ca^{2+} current and SR Ca^{2+} release

Organizing Committee

Donald M Bers, Ph.D. (Chair)
Ye Chen-Izu, Ph.D. (Contact)
Nipavan Chiamvimonvat, M.D.
Leighton T Izu, Ph.D.

Advisory Board

Fred Meyers, M.D.
Reginald Low, M.D.
Scott Simon, Ph.D.
Saul Schaffer, M.D.

Program

March 1 (Thursday)

7:30 AM *Coffee and light pastry at Conference Center*

7:50-8:00 AM Opening Remarks – Don Bers

8:00 – 9:50 AM Session-I: Ca^{2+} channel Structure-Function ‘Interactome’

8:00 – 8:40 Experimental studies - **Henry Colecraft**

8:40 – 9:20 Modeling studies-**Eleonora Grandi**

9:20 – 9:50 Panel discussion: Critical issues & Controversies – **Nipavan Chiamvimonvat**

Panelists: **Colleen Clancy, Ricardo Olcese, Saleet Jaffri, A Mahajan, Ivan Zahradnik**

10:00 – 11:50 AM Session-II: Ca^{2+} channel modulation

10:00 – 10:40 Experimental and modeling studies – **David T Yue**

10:40 – 11:20 Experimental studies – **Johannes Hell**

11:20 – 11:50 Panel discussion: Critical issues & Controversies – **Peter Backx**

Panelists: **Stefan Herzig, W-X Chen, Antonio Zaza, Todd Scheuer, Scott Simon, Jon Satin**

12:00 – 1:00 PM *Lunch for registered meeting attendees*

1:00 – 2:50 PM Session-III: Ryanodine receptor Structure-Function ‘Interactome’

1:00 – 1:40 Experimental studies – **Wayne Chen**

1:40 – 2:20 Modeling studies- **Eric Sobie**

2:20 – 2:50 Panel discussion: Critical issues & Controversies - **Isaac Pessah**

Panelists: **Alex Zima, Laszlo Csernoch, Chris George, Alain Karma, Marcel Egger**

3:00 – 4:50 PM **Session-IV: Ryanodine receptor modulation**
3:00 – 3:40 Experimental studies - **Xander Wehrens**
3:40 – 4:20 Modeling studies – **Mike Stern**
4:20 – 4:50 Panel discussion: Critical issues & Controversies - **Sandor Gyorke**
Panelists: **Tony Lai, Dimitry Terentyev, R-P Xiao, Alexandra Zahradnikova**

5:30 – 9:30 PM *Wine tasting for invited speakers & discussion panelists*

March 2 (Friday)

7:30 AM *Coffee and light pastry at Conference Center*

8:00 – 9:50 AM **Session-V: Ca²⁺ homeostasis – remember the balance**
8:00 – 8:40 Preamble, experimental studies – **Donald M Bers**
8:40 – 9:20 Modeling studies – **Nic Smith**
9:20 – 9:50 Panel discussion: Critical issues & Controversies - **Karin R Sipido**
Panelists: **Hector Valdivia, Greg Smith, Ken Laurita, Jose Puglisi, Javier Lopez, Saul Schaffer**

10:00 – 11:50 AM **Session-VI: Cardiac E-C Coupling from electrical excitation to Ca²⁺ signaling**
10:00 – 10:40 Experimental studies – **W Jon Lederer**
10:40 – 11:20 Modeling studies – **Thomas Shannon**
11:20 – 11:50 Panel discussion: Critical issues & Controversies - **Bjorn Knollmann**
Panelists: **Jeff Saucerman, Aldrin Gomes, Ed Moore, Ye Chen-Izu**

12:00 – 1:00 PM *Lunch for registered meeting attendees*

1:00–2:50 PM **Session-VII: Cardiac E-C Coupling feedback from Ca²⁺ to electrical excitation**
1:00 – 1:40 Experimental studies - **Henk Ter Keurs**
1:40 – 2:20 Modeling studies – **Leighton Izu**
2:20 – 2:50 Panel discussion: Critical issues & Controversies - **Brian O'Rourke**
Panelists: **David Christini, Zhilin Qu, Lai-Hua Xie, Daisuke Sato**

3:00 – 4:50 PM **Session-VIII: Ca²⁺-induced arrhythmias: from cellular level to the whole heart**
3:00 – 3:40 Experimental studies - **Igor R. Efimov**
3:40 – 4:20 Modeling studies – **Natalia Trayanova**
4:20 – 4:50 Panel discussion: Critical issues & Controversies - **Penny Boyden**
Panelists: **Andrew McCulloch, Andras Varro, Crystal Ripplinger, Ariel Escobar**

6:00 – 9:00 PM *Dinner for invited speakers & discussion panelists*

Conference Goals

The main goal is to combine perspectives of experimental and mathematical modeling approaches in studying complex heart disease mechanisms. The expert modelers and experimentalists attending are encouraged to exchange information, identify points of consensus and controversy, foster interdisciplinary collaborations, and share information via white-paper publication. We will use the joint experimentalist-modeler format (which was very successful in our previous symposium) to gain in-depth quantitative understanding of the focus area of this symposium: Cardiac Ca^{2+} current and SR Ca^{2+} release.

Format of Sessions

The symposium will have 8 sessions. Each session contains a 30 min experimental presentation (+10 min Q/A), a 30 min modeling presentation (+10 min Q/A), and a 30 min panel discussion on critical issues from both.

Speakers: Please summarize points of both consensus and controversy on your topic, being provocative is OK to stimulate discussion. Try not to use a routine seminar on your own research.

Discussion leaders and panelists: The panelists are expected to identify critical issues, controversies, and important questions that warrant further investigation. We ask the Discussion Leaders to set the stage and actively stimulate discussions on the topic. This is a major part of the Conference.

White paper

We plan to summarize Conference outcomes in a white paper that we plan to submit to *Circulation*. One or two participants from each of the eight sessions will be asked to help draft parts of the white paper.

Feedback

We ask you to give us feedback on the meeting contents and format. Your post-meeting comments will be critical for helping us to apply for conference grants and plan potential future symposia.