Autonomic Nervous System Control of the Heart in Health & Disease:
“Bridging the Gap Between Knowledge & Therapeutics”

Hosted by: UCLA Cardiac Arrhythmia Center
Gail & Gerald Oppenheimer Family Center for the Neurobiology of Stress

This Symposium is supported by the Leonetti/O’Connell Family Foundation

Thursday, July 19 through Friday, July 20, 2012
University of California, Los Angeles
Neuroscience Research Building (NRB) Auditorium
Course Directors:

Kalyanam Shivkumar, MD, PhD  
Professor of Medicine & Radiology  
Director, UCLA Cardiac Arrhythmia Center & EP Programs  
Co-Director, Gail and Gerald Oppenheimer Family Center for Neurobiology of Stress

Emeran A. Mayer, MD  
Professor of Medicine  
Director, Gail and Gerald Oppenheimer Family Center for Neurobiology of Stress, UCLA

Invited Faculty:

David Cechetto, PhD  
Professor, Department of Anatomy & Cell Biology  
University of Western Ontario, London, Canada

Lan S. Chen, MD  
Professor of Clinical Neurology  
Indiana University School of Medicine  
Indianapolis, IN

Peng-Sheng Chen, MD  
Director, Division of Cardiology  
Zipes Professor of Medicine  
Indiana University School of Medicine  
Indianapolis, IN

Igor Efimov, PhD  
Professor of Biomedical Engineering, Radiology, Cell Biology and Physiology  
Washington University, St. Louis, MO

Robert Foreman, Ph.D.  
Professor, Department of Physiology  
University of Oklahoma Health Sciences Center  
Oklahoma City, OK

David Goldstein, MD, PhD  
Chief, Clinical Neurocardiology Section  
National Institutes of Health, Washington D.C.

Beth A. Habecker, PhD  
Professor, Department of Physiology & Pharmacology  
Oregon Health & Science University, Portland, OR

Wilfrid Jänig, M.D.  
Professor, Institute of Physiology  
Christian-Albrechts University Kiel, Germany

Richard D. Lane, MD, PhD  
Professor of Psychiatry  
University of Arizona, Tucson, AZ

Kevin Shoemaker, MSc, Ph.D.  
Professor, School of Kinesiology  
University of Western Ontario, London, Canada

Douglas P. Zipes, MD  
Distinguished Professor Emeritus of Medicine  
Indiana University School of Medicine  
Indianapolis, IN

Ronald G. Victor, MD  
Associate Director for Clinical Research  
Director, Hypertension Center  
The Heart Institute, Cedars-Sinai Medical Center

David Geffen School of Medicine Faculty:

Alan M. Fogelman, MD  
Castera Professor  
Executive Chair, Department of Medicine

Olujimi Ajijola, MD  
Cardiology Fellow

Noel G. Boyle, MD, PhD  
Professor of Medicine

Michael Fishbein, MD  
Professor of Pathology

Aman Mahajan, MD, PhD  
Professor of Anesthesiology

Holly Middlekauff, MD  
Professor of Medicine

Bruce Naliboff, PhD  
Professor of Psychiatry

Yvette Tache, PhD  
Professor of Medicine

Kirsten Tillisch, MD  
Assistant Professor of Medicine

Marmar Vaseghi, MD, MS  
Assistant Professor of Medicine
Thursday, July 19, 2012

7:15 - 7:55  Registration & Breakfast
NRB Foyer

Welcome & Introductory

8:00 - 8:05  Kalyanam Shivkumar, MD, PhD & Emeran A. Mayer, MD
8:05 - 8:10  Alan M. Fogelman, MD
Executive Chair, Department of Medicine, UCLA

Inauguration & Introductory Lecture

8:10 - 8:30  The Autonomic Nervous System & the Heart, A Continuing Saga
Douglas P. Zipes, MD

8:30 - 8:40  Q&A

Theme A: FUNCTIONAL NEUROANATOMY OF THE HEART

Chairs: Yvette Taché, PhD & Aman Mahajan, MD, PhD

8:40 - 9:10  Control of the Heart by the Brain: An Integrated View
Wilfrid Jänig, M.D.

9:10 - 9:20  Q&A

9:20 - 9:40  Spinal Afferent and Spinal Cord Processing of Cardiac Nociception
Robert Foreman, Ph.D.

9:40 - 9:50  Q&A

9:50 - 10:10  Forebrain Control of the Heart
David Cechetto, PhD

10:10 - 10:25  Theme A Discussion

10:25 - 10:45  Coffee Break

THEME B. REMODELING OF SYMPATHETIC INNERVATION FOLLOWING MYOCARDIAL INfarction

Chairs: Olujimi Ajijola, MD & Marmar Vaseghi, MD, MS

10:45 - 11:05  Post-infarct Remodeling of Cardiac Sympathetic Nerves
Beth A. Habecker, PhD

11:05 - 11:15  Q&A
11:15 - 11:35  *Cardiac and Extra Cardiac Sympathetic Nerve Remolding After Myocardial Infarction*
   Lan S. Chen, MD

11:35 - 11:45  Q&A

11:45 - 12:05  *The Relevance of Neural Remodeling in Human Arrhythmias*
   Kalyanam Shivkumar, MD, PhD

12:05 - 12:20  Theme B Discussion

12:20 - 1:30  Lunch
   Location: Faculty Center - Redwood Room

**THEME C: THE ROLE OF THE AUTONOMIC NERVOUS SYSTEM IN CARDIAC ARRHYTHMOGENESIS**

Chairs: Holly R. Middlekauff, MD & Michael Fishbein, MD

1:30 - 1:50  *What is in the Vagal Tone?*
   Peng-Sheng Chen, MD

1:50 - 2:00  Q&A

2:00 - 2:20  *Arrhythmogenic Remodeling of Failing Human Heart*
   Igor Efimov, PhD

2:20 - 2:30  Q&A

2:30 - 2:50  *Emotional Factors in Sudden Cardiac Death*
   Richard D. Lane, MD, PhD

2:50 - 3:05  Theme C Discussion

3:05 - 3:20  Coffee Break

**THEME D: CLINICAL NEUROCARDIOLOGY & SCIENTIFIC INTEGRATIVE MEDICINE**

Chairs: Bruce Naliboff, PhD & Kirsten Tillisch, MD

3:20 - 3:40  *Feeling Your Heart*
   Emeran A. Mayer, MD

3:40 - 3:50  Q&A

3:50 - 4:10  *The Brain - Heart Connection in Humans*
   Kevin Shoemaker, MSc, Ph.D.
4:10 - 4:20  Q&A

4:20 - 4:40  What Does Clinical Assessment of Cardiac Sympathetic Innervation Teach about Mechanisms of Parkinson Disease and Other Neurodegenerative Disorders?
David Goldstein, MD, PhD

4:40 - 4:55  Theme D Discussion - Led by Ronald Victor, MD

4:55  Concluding Remarks
Noel G. Boyle, MD, PhD

Friday, July 20

8:15 - 8:55  Breakfast - NRB Foyer

Roundtable Discussions

9:00 - 10:00  Theme: State of the field - Health
Moderators: Robert Foreman, Ph.D & David Cechetto, PhD

10:00 - 11:00  Theme: State of the field - Disease
Moderators: Beth A. Habecker, PhD & Peng-Sheng Chen, MD

11:00 - 11:15  Coffee Break

11:15 - 12:15  Theme: Critical Research Questions For the Future
Moderators: Wilfrid Janig, PhD & Douglas P. Zipes, MD

12:15  Concluding Remarks
Emeran A. Mayer, MD & Kalyanam Shivkumar, MD, PhD

12:30 - 1:30  Lunch and Conference Conclusion
Location: Faculty Center - Hacienda Room
Registration:

<table>
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<tr>
<th>Name (First/Middle/Last)</th>
<th>Degree</th>
<th>Male</th>
<th>Female</th>
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Affiliation

Mailing Address

( )

City/State/Zip

Area Code     Phone

Email Address

Conference Details

Registration:
Please fax or scan/email completed registration form to Michelle Betwarda at (310) 794-6492 or mbetwarda@mednet.ucla.edu
For further information, please call Michelle Betwarda at (310) 267-8566

Location:
NRB Auditorium
Neuroscience Research Building, UCLA Campus
635 Charles E. Young Drive South
Los Angeles, CA 90095

Parking:
Please park in Lot 9. A parking attendant will be on duty from 6:30 to 9:00 am at the south entrance on Charles E. Young Drive South. For arrivals after 9:00 am, please report to the parking kiosk on Westwood Plaza to pay for your parking permit ($11).