Tuesday, May 26

1:00 - 3:30pm **Interest Group Workshops**. For each Interest Group meeting there will be a 30 minute plenary talk followed by an election of a new chair and planning committee.

**Session I (1:00 to 2:00 PM):**

**Signaling in Hypertrophy Interest Group** - Harborside Ballroom Salon A  
(Chair: Jeffery D. Molkentin, PhD, University of Cincinnati)  
Yibin Wang, PhD (UCLA), Plenary speaker, “Novel Protein Phosphatases in Cell Signaling”

**Ion Channels and Arrhythmia Interest Group** - Harborside Ballroom Salon B  
(Chair: Barry London, MD, PhD, University of Pittsburgh)  
Barry London, MD, PhD, Plenary speaker, “The Genetic Basis of Sudden Cardiac Death: From Inherited Arrhythmia Syndromes to Heart Failure”

**Session II (2:00 to 3:00 PM):**

**Ischemia, Cardioprotection and Mitochondria Interest Group** - Harborside Ballroom Salon A  
(Chair: Charles Steenbergen, MD, PhD, Johns Hopkins University)  
Chris Baines, PhD, Department of Pediatrics, University of Cincinnati, Plenary speaker, “RIPing holes in mitochondria: understanding necrotic cell death”

**Excitation-Contraction Coupling Interest Group** - Harborside Ballroom Salon B  
(Chair: Steven R. Houser, PhD, Temple University)  
David A. Eisner, MA, D.Phil, FMed Sci, (University of Birmingham) Plenary speaker, "Regulation of SR Ca content and its role in contractility”

**Session III (3 to 4 PM):**

**Contractile and Regulatory Protein Interest Group** - Harborside Ballroom Salon A  
(Chair: R. John Solaro, PhD, University of Illinois, Chicago)  
Joe M. Metzger, PhD, (University of Minnesota) Plenary speaker, "Design and implementation of a biosensing thin filament regulatory system"
Cardiac Metabolism Interest Group - Harborside Ballroom Salon B
(Chair: Douglas Lewandowski, Ph.D. University of Illinois Chicago)
Joanne S. Ingwall, PhD. NMR Laboratory for Physiological Chemistry, Brigham and Women’s Hospital, Plenary speaker, “Metabolic remodeling in the failing heart: adaptation or Mal-adaptation?”

Stem Cell and Gene Therapy Interest Group - Harborside Ballroom Salon D
(Co-Chairs: Loren J. Field, PhD, Indiana University and Mark A. Sussman, PhD, San Diego State University)
Joshua M. Hare, MD, University of Miami, Plenary speaker, “Cardiac regenerative therapy for ischemic cardiomyopathy”

4:00 - 6:00pm Young Investigator Competition and Presentation of Distinguished Leader Award - Harborside Ballroom Salon C
Early Career Finalists:
Grant R. Budas, PhD (Stanford University School of Medicine)
“HSP90-mediated Mitochondrial Import of PKCε is Essential for Cytoprotection”
Dao-Fu Dai, PhD (University of Washington)
“Mitochondrial oxidative stress mediates pressure overload cardiac hypertrophy and failure”
Asuka Ota (David Geffen School of Medicine, UCLA)
“Regulation of Basal p38α Activity by Hsp90 and Cdc37 Chaperone Complex”
Senior Fellows and Assistant Professor Finalists:
Julie Bossuyt, DVM, PhD (University of California, Davis)
“Endothelin and Phenylephrine differentially activate nuclear PKD and HDAC5 export, despite similar global PKD activation in adult cardiac myocytes”
Claudia J. Lagranha, PhD (National Heart Lung Blood Institute, NIH)
“Sex differences in phosphorylation of mitochondrial proteins result in reduced production of reactive oxygen species and cardioprotection in females”
Marcello Rota, PhD (Brigham & Women's Hospital, Harvard Medical School)
“Spontaneous Calcium Oscillations Regulate Human Cardiac Progenitor Cell Growth and Differentiation”
Lina A. Shehadeh, PhD (University of Miami Miller School of Medicine)
“Regulation of Compensatory Angiogenesis during Cardiac Hypertrophy by a p300 - miR-17~92 Feedback Loop”

6:00 - 6:05pm Presentation of Distinguished Leader Award to Dr. Robert Jennings - Harborside Ballroom Salon C

6:05 - 8:00pm Opening Reception - Harborside Ballroom Foyer

Wednesday, May 27

7:00 – 7:50am Continental Breakfast - Harborside Ballroom Foyer

8:00 – 8:15am Welcome: Meredith Bond, PhD, Chair - Program Committee and E. Albert Reece, MD, PhD, MBA, Vice President for Medical Affairs, University of Maryland and Dean, School of Medicine, University of Maryland Baltimore
8:15 - 9:00am Plenary Talk - *Harborside Ballroom Salon C*
Stephen B. Liggett, MD, (University of Maryland, Baltimore)
“Genetic Variation within the Cardiac Adrenergic Network of Heart Failure Drug Response”

9:00 - 12:00pm *Morning Sessions*

**Session 1A. Excitation-Contraction Coupling and Beyond - Harborside Ballroom Salon A**
Chaired by Walter J. Koch, PhD (Thomas Jefferson University)

- **9:00** Donald M. Bers, PhD (University of California, Davis) Local Ca signaling in EC-Coupling and ET-Coupling
- **9:25** W. Jonathan Lederer, MD, PhD (University of Maryland Biotechnology Institute) Novel calcium leak in heart cells
- **9:50** Hector H. Valdivia, MD, PhD (University of Wisconsin) Regulation of ryanodine receptor function

10:15-10:45 *Coffee Break*

10:45 Litsa G. Kranias, PhD (University of Cincinnati) A fine crosstalk between SR Ca Uptake, Load and Release.
11:10 David A. Eisner, MA, D.Phil, FMed Sci (University of Manchester) Sarcoplasmic reticulum and arrhythmogenic Ca^{2+} release
11:35 Ulrike Mende, MD (Brown University) G-protein signaling and Ca^{2+} cycling

**Session 1B. Genetic and Proteomics approaches to heart disease - Harborside Ballroom Salon B**
Chaired by David Kass, MD (Johns Hopkins)

- **9:00** Jennifer van Eyk, PhD (Johns Hopkins) Mitochondrial proteomics in heart disease.
- **9:25** Peipei Ping, PhD (UCLA) Functional proteomics in cardioprotection.
- **9:50** Jennifer L. Hall, PhD (University of Minnesota, Minneapolis) Reverse remodeling and recovery of heart failure: underlying changes in gene expression

10:15-10:45 *Coffee Break*

10:45 Austin J. Yang, PhD (University of Maryland Baltimore) Advancing signaling networks through proteomics.
11:10 Dan P. Judge, MD (Johns Hopkins) Genetics and treatment of familial cardiomyopathies
11:35 Alan R. Shuldiner, MD (University of Maryland, Baltimore) Molecular basis and genetics of the cardio-metabolic syndrome.

**Session 1C. Obesity and Heart Failure: from Lipotoxicity to the Obesity Paradox - Laurel Rooms A-D**
Chaired by Salvatore Pepe, PhD (University of Melbourne)

- **9:00** Mandeep R. Mehra, MBBS (University of Maryland) The obesity paradox in heart failure.
- **9:25** E. Dale Abel, MD, PhD (University of Utah) Adaptation of Cardiac Mitochondria to Obesity
- **9:50** Lili A. Barouch, MD (Johns Hopkins) Obesity, adipokines, and heart failure.

10:15-10:45 *Coffee Break*

10:45 Gary D. Lopaschuk, PhD (University of Alberta) Cardiac energy metabolism in obesity.
11:10 Linda Peterson, MD (Washington University) Cardiac hypertrophy and metabolism in obesity.
11:35 Lidia S. Szczepaniak, PhD (University of Texas, Southwestern) Cardiac steatosis in diabetes and metabolic syndrome.

12:00 - 2:00pm Lunch Provided, Poster Session I, Harborside Ballroom Salons D and E

12:30 - 1:30pm COUNCIL MEETING I

2:00 - 5:00pm Afternoon Sessions

Session 2A. Novel Mechanisms in Cardiac Electrophysiology - Harborside Ballroom Salon A
Chaired by Gordon Tomaselli, MD (Johns Hopkins)

2:00 Jeanne M. Nerbomme, PhD (Washington University) Molecular physiology of cardiac repolarization
2:25 Robert S. Kass, PhD (Columbia University) Cardiac sodium channel in health and disease
2:50 Gail Robertson, PhD (University of Wisconsin, Madison) hERG channels in cardiac repolarization and arrhythmia

3:15-3:45 Coffee Break

3:45 Paul A. Welling, MD (University of Maryland Baltimore) Trafficking of K+ channels
4:10 Björn C. Knollmann, MD, PhD (Vanderbilt University) Genetic framework for arrhythmia therapy
4:35 Edward G. Lakatta, MD (NIA) Intracellular calcium clock within pacemaker cells.

Session 2B. Myofilament Function and Dysfunction - Harborside Ballroom Salon B
Chaired by Hector H. Valdivia, MD, PhD (University of Wisconsin)

2:00 Joe M. Metzger, PhD (University of Minnesota) Design and Implementation of Bio-Sensors for the Failing Heart
2:25 Marius P. Sumandea, PhD (University of Kentucky) Molecular Mechanisms Controlling Cardiac Thin Filament Function and Dysfunction
2:50 Dr. Robert Stehle (Cologne) Kinetic analysis of diastolic dysfunction induced by mutations in troponin I at the protein, the sarcomere and the heart level

3:15-3:45 Coffee Break

3:45 Samantha Harris, PhD (University of California, Davis) Bridging the Gap Between Thick and Thin: Regulation of Actomyosin Interactions by Myosin Binding Protein-C
4:10 William J. Lehman, PhD (Boston University) Structural Basis for Regulation of Striated Muscle Contraction by Troponin and Tropomyosin.
4:35 J.P. Jin, PhD (Northwestern University) Regulation of Troponin Function by Restricted Proteolysis

Session 2C. Nutrition and Heart Failure - Laurel Rooms A-D
Chaired by Linda R. Peterson, MD (Washington University)

2:00 William C. Stanley, PhD (University of Maryland) Macronutrient intake and heart failure.
2:25 Genevieve Sparagna, PhD (University of Colorado) Cardiolipin, diet and heart failure.
2:50 Salvatore Pepe, PhD (University of Melbourne) Omega-3 Polyunsaturated fatty acids and heart failure.

3:15-3:45 Coffee Break

3:45 Leslie A. Leinwand, PhD (University of Colorado) Phytoestrogen intake, sex and the heart.
4:10 Kenneth Walsh, PhD (Boston University) Adiponectin and cardioprotection.
4:35 Margaret P. Chandler, PhD (Case Western Reserve University) Mitochondrial dysfunction in heart failure.

5:00 - 6:30pm Reception - Poster Session I (continued) - Harborside Ballroom Salons D and E

~ Dinner on your own ~

Thursday, May 28

7:00 – 8:00am Continental Breakfast - Harborside Ballroom Foyer

8:00 - 8:45am Plenary Talk - Harborside Ballroom Salon C
Douglas W. Losordo, MD (Northwestern University): “Therapeutic cardiovascular regeneration”

9:00 - 12:00pm Morning Sessions

Session 3A. Cardiac Hypertrophy: Novel Mechanisms - Harborside Ballroom Salon A
Chaired by Jeffery D. Molkentin, PhD (University of Cincinnati)

9:00 Mansoureh Eghbali, PhD (UCLA) Molecular signature of cardiac hypertrophy during pregnancy
9:25 Walter J. Koch, PhD (Thomas Jefferson University) Nuclear GRK5 and its Role in Maladaptive Cardiac Hypertrophy
9:50 Timothy O’Connell, PhD (University South Dakota) Nuclear alpha-1-adrenergic receptors and cardioprotective signaling in cardiac myocytes.

10:15-10:45 Coffee Break

10:45 Susan F. Steinberg, MD (Columbia University) Signaling specificity for PKCδ in cardiomyocytes: Rules of phosphorylation... or phosphorylation rules
11:10 Daria Mochly-Rosen, PhD (Stanford University) PKC signaling in ischemia and heart failure
11:35 Jeffrey Robbins, PhD (Cincinnati Children’s Hospital) Post translational modifications of myosin binding protein C and the effects on cardiac function.

Session 3B. Arrhythmias: Molecular to Clinical Mechanisms - Harborside Ballroom Salon B
Chaired by David A. Eisner, MA, D. Phil, FMed Sci (University of Manchester)

9:00 Gordon Tomaselli, MD (Johns Hopkins) Attenuation of adverse electrical remodeling in the failing heart by cardiac resynchronization
9:25  Igor R. Efimov, PhD (Washington University) Optical mapping of failing human heart: mechanisms of sudden death
9:50  Colleen E. Clancy, PhD (Cornell University) Pharmacogenomics and antiarrhythmic therapy

10:15-10:45 Coffee Break

10:45  Kenneth R. Laurita, PhD (MetroHealth System) Calcium mediated arrhythmogenesis in heart failure
11:10  Matthew C. Trudeau, PhD (University of Maryland, Baltimore) Gating in hERG potassium channels
11:35  Kathrin Banach, PhD (University of Illinois, Chicago) The role of intercellular coupling in cardiac arrhythmia

Session 3C. Mitochondria in cardiac disease - Laurel Rooms A-D
Chaired by Jennifer van Eyk, PhD (Johns Hopkins)

9:00  Steven J. Sollott, MD (NIA, Baltimore) Mitochondria in ischemic stress.
9:25  Elizabeth Murphy, PhD (NHLBI) Mitochondrial dysfunction in ischemia/reperfusion injury.
9:50  Brian O’Rourke, MD (Johns Hopkins) Mitochondria, ROS and arrhythmias.

10:15-10:45 Coffee Break

10:45  Roberta A. Gottlieb, MD (San Diego State University) Autophagy and mitochondria.
11:10  Lothar A. Blatter, MD (Rush University, Chicago) Cardiac mitochondrial calcium and nitric oxide signaling.
11:35  Keith D. Garlid, MD, PhD (Portland State University) The signalosome mechanism of cardioprotective signaling to mitochondria

12:00 - 2:00pm Lunch Provided, POSTER SESSION II - Harborside Ballroom Salons D and E

2:00 - 5:00pm Afternoon Sessions

Session 4A. Regulation of gene transcription: Novel mechanisms and therapeutic targets - Harborside Ballroom Salon A
Chaired by Jeffrey Robbins, PhD (University of Cincinnati)

2:00  Elizabeth McNally, MD, PhD (University of Chicago) The nuclear membrane and cardiomyopathy
2:25  Jil C. Tardiff, MD, PhD (Albert Einstein) Troponin T mutations and cardiomyopathy
2:50  Katherine L. Wilson, PhD (Johns Hopkins) Emerin and ED Muscular Dystrophy

3:15-3:45 Coffee Break

3:45  Rusty Montgomery (miRagen Therapeutics) Therapeutic potential of microRNA manipulation in cardiovascular disease
4:10  Jeffery D. Molkentin, PhD (University of Cincinnati) GATA4 versus GATA6 in regulating cardiac hypertrophy in vivo
4:35  Katia Kontrogianni, PhD (University of Maryland) HAX-1: a multifaceted protein with emerging roles in Ca^{++}-cycling, apoptosis and muscle function
Session 4B. Molecular Imaging of the Heart - Harborside Ballroom Salon B  
Chaired by Brian O’Rourke, MD (Johns Hopkins)

2:00  Robert S. Balaban, PhD (NHLBI) Systems Biology of the Cardiac Mitochondrion.
2:25  Natalia Trayanova, PhD (Johns Hopkins University) Optical Imaging of Arrhythmias in the Heart: The role of Photon Scattering
2:50  Michael Rubart, MD (Indiana University) Imaging and cardiac cell therapy

3:15-3:45 Coffee Break

3:45  Vasken Dilsizian, MD (University of Maryland) Metabolic Imaging of Myocardial Ischemia
4:10  Timm-Michael Dickfeld, MD, PhD (University of Maryland) Integrated cardiac PET-CT scar mapping
4:35  Elliot McVeigh, PhD (Johns Hopkins) Real-time MR imaging  Realtime Cardiac MRI

Session 4C. Substrate signaling in cardiac pathology and metabolism - Laurel Rooms A-D  
Chaired by E. Dale Abel, MD, PhD (University of Utah)

2:00  Gerald W. Hart, PhD (Johns Hopkins) O- GlcNAcylation modification in health and disease.
2:25  John Chatham, PhD (University of Alabama) Function implication of O- GlcNAcylation in cardiac disease.
2:50  Martin E. Young, D. Phil (Baylor) Fatty acid regulation of cardiac phenotype and function: a matter of timing.

3:15-3:45 Coffee Break

3:45  Fabio A. Recchia, MD, PhD (New York Medical College) Substrate selection and oxidative stress in heart failure
4:10  Jason R. Dyck, PhD (University of Alberta) Lipid metabolism and cardiac dysfunction with aging
4:35  J. Michael O’Donnell, PhD (University of Illinois, Chicago) Metabolic Response of Diseased Heart to SERCA Gene Therapy

5:00 - 6:30pm Reception - Poster Session II (continued) - Harborside Ballroom Salons D and E

7:00 – 10:00pm Gala Event - American Visionary Art Museum, 800 Key Highway, Baltimore

Friday, May 29

7:00 – 8:00am Continental Breakfast - Harborside Ballroom Foyer

8:00 - 9:00am ISHR, North American Section, President’s Distinguished Lecture - Harborside Ballroom Salon C  
R. John Solaro, PhD (University of Illinois at Chicago)  
Integration of Cardiac Sarcomeric Control Mechanisms with EC Coupling and Metabolism
9:00 - 12:00 pm Final Sessions

Session 5A. Myocardial Regeneration - Harborside Ballroom Salon A
Chaired by Edward G. Lakatta, MD (National Institute on Aging)

9:00 Mark A. Sussman, PhD (San Diego State University) - State of the Art Lecture: Pim1 and myogenesis

9:45 Lisa M. Salvador (Bristol-Myers Squibb) Paracrine Mechanisms with Bone Marrow Stem Cells

10:10-10:40 Coffee Break

10:40 Bartley P. Griffith, MD (University of Maryland) Cell therapy in post-infarction remodeling.
11:05 Joseph C. Wu, MD, PhD (Stanford University) Human Embryonic Stem Cell Biology: Insights from Molecular Imaging.

Session 5B. Signaling Complexes in the Heart - Harborside Ballroom Salon B
Chaired by Litsa G. Kranias, PhD (University of Cincinnati)

9:00 David A. Kass, MD (Johns Hopkins) - State of the Art Lecture: cGMP/PDE in Heart Failure

9:45 Christine des Rosiers, PhD (University of Montreal) cGMP and cardiac energetic and metabolism

10:10-10:40 Coffee Break

10:40 Stephen F. Vatner, MD (University of Medicine and Dentistry, New Jersey) Adenylyl cyclase disruption, and resistance to stress
11:05 Manuela Zaccolo, MD (University of Glasgow) Phosphodiesterases and compartmentalized cAMP signaling
11:30 Michael S. Kapiloff, MD, PhD (University of Miami) AKAPs and cAMP signaling.

12:00 Meeting Adjourns