

Curriculum Vitae James N. Weiss, MD

- Date of Birth:** February 25, 1949
- Place of Birth:** Englewood, New Jersey
- Citizenship:** U.S.A.
- University:** Division of Cardiology, A2-237 CHS
David Geffen School of Medicine at UCLA
Los Angeles, CA 90095-1679
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FAX: 310 206-9133
Email: jweiss@mednet.ucla.edu
- Education:** BA (Physics) Hamilton College, Clinton, New York, 1967-71 (*Phi Beta Kappa*)
(Mathematics) Edinburgh University, Edinburgh, Scotland, UK, 1969-70
MD (Medicine) University of Pennsylvania School of Medicine, Philadelphia, PA,
1971-75 (*Alpha Omega Alpha*)
- Positions Held:**
- 1975-76 Intern in Medicine, Hospital of the University of Pennsylvania
 - 1976-78 Resident in Medicine, Hospital of the University of Pennsylvania
 - 1978-81 Fellow in Cardiology, UCLA Center for the Health Sciences
 - 1981 Fellow in Clinical Cardiac Electrophysiology, Department of Cardiology, University of Limburg, Maastricht, The Netherlands
 - 1981-85 Assistant Professor of Medicine, UCLA School of Medicine
 - 1981-85 Director, Clinical Cardiac Electrophysiology, UCLA Medical Center
 - 1985-89 Associate Professor of Medicine, UCLA School of Medicine
 - 1989- Professor of Medicine, UCLA School of Medicine
 - 1990-1996 Associate Director, UCLA Cardiovascular Research Laboratories
 - 1991- Chizuko & Nobuyuki Kawata Endowed Chair in Cardiology
 - 1993-2001 Director of Cardiovascular Research, UCLA Division of Cardiology
 - 1996-2008 Professor of Physiology (joint appointment), UCLA School of Medicine
 - 1996-2019 Director, UCLA Cardiovascular Research Laboratory
 - 2001-2019 Chief, Division of Cardiology, David Geffen School of Medicine at UCLA
 - 2009-2019 Distinguished Professor of Medicine (Cardiology) & Physiology
 - 2014-2019 Co-Director, Cardiovascular Theme, David Geffen School of Medicine at UCLA
 - 2020- Emeritus Distinguished Professor of Medicine (Cardiology) & Physiology
- Honors, Fellowships, Awards:**
- Phi Beta Kappa, 1969
 - Southworth Prize in Physics, Hamilton College, 1971
 - Alpha Omega Alpha, 1974
 - NIH Postdoctoral Trainee Award, 1979-81
 - NIH New Investigator Research Award, 1983-86
 - Elected to Western Society for Clinical Investigation, 1985
 - NIH Research Career Development Award, 1987-1991
 - Elected to American Society for Clinical Investigation, 1991
 - Elected to Association of University Cardiologists, 1994
 - NIH SCOR Director, 1995-2004
 - Distinguished Scientific Achievement Award, American Heart Association, Greater Los Angeles Affiliate, 1997
 - Full-time Faculty Teaching Award nominee, UCLA Department of Medicine Housestaff, 1997, 2000, 2002, 2007

NIH MERIT Award, 1998-2008
 NIH Training Grant Director, 1998-2008
 UCLA Cardiology Fellows Teaching Award for Best Research Mentor, 1998, 2001, 2005
 Pfizer/American College of Cardiology Foundation Visiting Professor in Cardiovascular Medicine, Vanderbilt University School of Medicine, 2002
 Basic Science Council State-of-the-Art Research Lecture, 2002 American Heart Association Scientific Sessions
 Pfizer/American College of Cardiology Foundation Visiting Professor in Cardiovascular Medicine, New York University School of Medicine, 2004
 NIH Program Project Director, 2005-2016
 Super Doctors of Southern California, 2008-2020
 Gordon Research Conference on Cardiac Arrhythmia Mechanisms, elected Vice Chair, 2009 and Chair, 2011
 Mayo Soley Award, Western Society of Clinical Investigation, 2009
 Douglas P. Zipes Lectureship Award, Heart Rhythm Society and Cardiac Electrophysiology Society, 2010.
 Archibald Byron Macallum Lectureship, Department of Physiology, University of Toronto, 2014
 UCLA Cardiovascular Research Leadership Award, David Geffen School of Medicine and American Heart Association Symposium "Celebrating 60 Years of Cardiovascular Excellence," Los Angeles, CA, 2017
 James T. Willerson Award for Excellence in Cardiovascular Sciences, International Academy of Cardiovascular Sciences, Havana, Cuba, 2018
 STAR Program Mentorship Award, David Geffen School of Medicine, 2020

Licensure: California State Medical License G036875

Board Certification:

American Board of Internal Medicine, 1978
 American Board of Internal Medicine, Subspecialty of Cardiovascular Diseases, 1982

Professional Organizations:

American Heart Association, Greater Los Angeles Affiliate, 1981
 American Heart Association Council on Basic Science, 1983
 American College of Cardiology, 1984
 Greater Los Angeles Electrophysiological Society, 1985
 American Federation for Clinical Research, 1985
 Western Society for Clinical Investigation, 1985
 Biophysical Society, 1989
 American Society for Clinical Investigation, 1991
 International Society for Heart Research, 1991
 American Association for the Advancement of Science, 1992
 American Physiological Society, 1993
 Cardiac Muscle Society, 1993 (Sec-Treas 2003-2006, Pres 2006-2009)
 Association of University Cardiologists, 1994
 Society of General Physiologists, 1995
 Association of Professors of Cardiology, 2001

Committees and Public Service:

University:

Departmental

Internship Selection Committee, member, 1983-1986
 Cardiology Fellowship Selection Committee, member, 1987-2019
 Patient Care Committee, 1988-1989
 Search committee, Cardiovascular Research Laboratory faculty position, 1990
 Curriculum Committee, Division of Cardiology, member, 1990-2019
 Search Committee member, Division of Cardiology
 Tenured faculty positions, 1988, 1990, 1992 (Chair), 1994, 2001-2013

Guthman Endowed Chair in Cardiology, 1990, 1994, 2001, 2005, 2013
(Chair)

Barbra Streisand-American Heart Association Endowed Chair in Cardiology,
2008 (Chair), 2013 (Chair)

Search Committee member, Department of Physiology
Tenured faculty positions, 1995, 1996 (Chair), 1996 (Chair), 2001 (Chair),
2004, 2015 (Chair)

Search Committee member, Department of Anesthesiology
Tenured faculty positions, 2002 (Chair), 2005 (Chair), 2005 (Chair), 2006
(Chair), 2006 (Chair), 2008 (Chair), 2010

Ph.D. Thesis Committees

Hal F. Yee (Physiology), 1989
Sen Ji (Physiology), 1992
Mikhail Karpouhkin (Computer Science), 1995
Kalyanam Shivkumar (Physiology), 1996
Karol Watson (Physiology), 1997
Eugene Chudin (Biomathematics), 1998
Jong Kil (Physiological Sciences), 2001
Jesus Araujo (Molecular Genetics), 2002
Christopher Woods (Neuroscience), 2003
David Cesario (Physiology), 2003
Joseph Wu (Molecular Pharmacology), 2003
Aman Mahajan (Physiology), 2006
David Wendell (Bioengineering), 2006
Jordan Patti (Bioengineering), 2007
Gang Lu (Physiology), 2008
Ray Huffaker (Biomathematics), 2008
Richard Samade (Computer Science), 2009
Marvin G. Chang (Physiology), 2012
Gao Chen (Physiology), 2013
Deanna Steiger (Physiology), 2013
Raymond Truong (Physiological Science), 2013
Roshni Madhvani (Physiology), 2014
Edward Lau (Physiology), 2014
Marlin Touma (Physiology), 2015
Christopher Ko (Physiology), 2016
Rene Packard (Bioengineering), 2016
Michael B. Liu (Biomathematics), 2017
Julian Landaw (Biomathematics), 2018
Ngoc Nguyen (Physiology), 2019
Nathaniel Elias (Physiology), 2019

Borun Cardiology Fund Advisory Committee, Division of Cardiology, member,
1991-2019

Executive Committee, Division of Cardiology, member, 1993-2011

Graduate Medical Education Committee, 1993

Space Committee, Chair, 1995

Cardiology STAR Program Research Career Development Committee, Chair,
1997-2006

Department of Medicine Executive Committee, member, 1998-2019

Department of Physiology Executive Committee, member, 2000-2002

Chair, Search Committee for STAR Fellowship Director, 2011

Member, Advisory Committee for the UCLA Resident-Scientist Training Program
(RSTP), NIH R38 pilot program, 2020-

School of Medicine

Jerry Lewis Neuromuscular Research Center, Executive Committee, member,
1989-1995

Search Committee for Chair of Pharmacology, member, 1991

Laubisch Cardiovascular Research Fund Administrative Committee, member,
1998-2019

Search Committee for Physiology FTE, member, 2002

Search Committee Chair, Department of Anesthesiology FTE, 2002, 2005
 Search Committee Chair, Elliot Corday Chair in Cardiovascular Medicine and Science, 2002.
 Search Committee Chair, Julien I. Hoffman, MD, Chair in Cardiothoracic Surgery, 2003, 2008.
 Co-Chair, UCLA Heart Center Steering Committee, 2004-2019
 Chair, Strategic Planning Focus Group Meeting for Cardiovascular Research, 2005
 Cardiothoracic Surgery Review Committee, Department of Surgery, member, 2005.
 Cardiothoracic Surgery Division Chief Search Committee, Department of Surgery, member, 2006
 Review Committee, Chair of Obstetrics and Gynecology, member, 2006
 Co-Director, UCLA Cardiovascular Center of Excellence, 2007
 Pediatric Cardiology Division Chief Search Committee, member, 2008
 Search Committee for Chair of Physiology, member, 2012
 Research Enterprise Task Force for the David Geffen School of Medicine, member, 2013
 Dean's Leadership Group, 2011-2017
 Co-Director, Cardiovascular Research Theme, 2014-2019
 Search Committee for Chair of Biomedical Informatics and Computational Medicine, member, 2015

University

Committee on Academic Personnel, Ad hoc member, 1989-1991, 1993, 1996, 2006
 Deans' Physiology Teaching Committee, 1996
 School of Engineering
 Department of Bioengineering Advisory Committee, 2002-2008
 Biomedical Engineering IDP Faculty Advisory Committee, member, 2003-2008
 Biomedical Engineering Graduate Program Administrative Committee, 2003-2008
 Health Sciences – Medicine, Dentistry, Nursing & Public Health - Strategic Planning Committee for Research Informatics, 2012

Local and Regional:

American Heart Association, Greater Los Angeles Affiliate
 Fellowship Study Section, member, 1986
 Research Committee, member, 1987-1990
 Grant-in-aid Study Section, Chairman, 1988
 Basic Science Session, Young Investigators Forum, moderator, 1989
 Group Investigator Award Study Section, member, 1992
 American Heart Association, California Affiliate
 Fellowship Study Section, member, 1993-1997
 American Heart Association, New York City Affiliate
 Peer Review Committee, member, 1994
 Western Society for Clinical Investigation
 Scientific Program Coordinator, Cardiovascular Sections, 1988 annual meeting
 Co-chairman, Cardiovascular 1 Session, 1988, 1990 annual meetings
 Council member, 1988-1991
 University of Missouri Research Assistance Act
 Ad hoc reviewer, grant application, 1989
 SCOR External Committee Advisory Board (PI: M. Weisfeldt), Division of Cardiology, Johns Hopkins University School of Medicine, 1991
 PPG External Advisor (PI: L.S. Gettes), Division of Cardiology, University of North Carolina, 1993
 California Medical Association, Council on Scientific Affairs (CSA), member, 2001-2019
 NIH/NHLBI Cardiovascular Training Grant, External Advisor (PI: James Potter), Department of Pharmacology, University of Miami Miller School of Medicine, 2008

National and International:

Ontario Ministry of Health
 Ad hoc reviewer, Career Scientist Award applications, 1985

National Institutes of Health

Special reviewer, Cardiovascular and Pulmonary Study Section, NHLBI, 1987, 1989, 1996

Chair, Ad Hoc Study Section, NHLBI, 1997

Member, NIH Delegation, Joint US-Russia Symposium on Arrhythmias, Moscow, Russia, May, 1999.

Study Section member, SCOR in Ischemic Heart Disease in Minorities, 1999

Member, NHLBI Working Group on the Translation of Therapies for Protecting the Heart from Ischemia, Bethesda, MD, June, 2003

Special reviewer, Electrical Signaling, Ion Transport and Arrhythmia Study Section, NHLBI, 2004, 2007

Special reviewer, Special Emphasis Panel ZHL1 CSR-G, NHLBI, 2005, 2006; ZRG1 CVRS-L [03], 2010; Chair, ZRG1 CVS D-03, NHLBI, 2007;

Member, NHLBI Strategic Planning – Cardiovascular Program Theme #3: Arrhythmias, Working Group, Bethesda, MD, June, 2006

Member, NHLBI Working Group on the Systems Approaches to Understanding Electromechanical Activity in the Human Heart, Bethesda, MD, June, 2007

Vice-Chair, NIH Cardiovascular and Respiratory Sciences Distinguished Editorial Panel ZRG1 CVRS-B (58) for ARRA Challenge Grants, July, 2009.

Member, NIH College of CSR Reviewers, 2010-2012

Veterans Administration

Ad hoc reviewer, VA Career Development Award applications, 1989

American Heart Association

Member, Cellular Cardiovascular Physiology and Pharmacology Study Section, 1991-1993

Co-chairman, "Modulation of ion channels" session, Scientific Sessions, 1992

Member, Melvin Marcus Young Investigator Award Selection Committee, 2002-2009

University of Leuven, Leuven, Belgium

Reviewer, research projects of the University of Leuven, 1996

Cardiac Muscle Society

Member, Steering Committee, 1996-2015

Secretary-Treasurer, 2003-2006

President, 2007-2009

ICN Pharmaceuticals, Inc.

Member, Scientific Advisory Board, 1998-2000

National Research Council (Board on Mathematical Sciences) Workshop on the Interface of Three Areas of Biomedical Science with Mathematical Sciences, Institute of Medicine delegate to Planning Committee, 2000

Cardiovascular Research Training Institute, University of Utah School of Medicine

External reviewer, 2001

Wellcome Trust

Ad hoc reviewer, International Scientific Programme, 2001

AFM Recherche Programme (France)

Ad hoc reviewer, 2003

Gene Networks Sciences (Ithaca, NY)

Member, Scientific Advisory Board, 2003-2008

Swiss National Science Foundation

Ad hoc grant reviewer, 2004

Consultant, Boehringer-Ingelheim Pharmaceuticals, 2005

Heart Rhythm Society

Member, Research Committee, 2008-2010

Scientific Advisory Committee, NIH BD2K Program "A community effort to translate protein data to knowledge: An integrated platform" (U54GM114833), 2015-2018

Co-Organizer, "The Heart by Numbers: Integrating Theory, Computation and Experiment to Advance Cardiology," Biophysical Society Thematic Meeting, Berlin, Germany, September, 2018

Editorial and reviewing activities:

Editorial *American Journal of Physiology: Heart & Circulatory Physiology*, 1993-1998

Boards	<i>Journal of General Physiology</i> , 1995-2019 <i>Journal of Cardiovascular Pharmacology and Therapeutics</i> , 1997-2005 <i>Journal of Cardiovascular Electrophysiology</i> , 1999-2010 <i>Circulation</i> , 2000-2016 <i>Circulation Research</i> , 2002-2012 <i>Heart Rhythm</i> , 2003-2010 <i>Journal of the American College of Cardiology – Electrophysiology</i> , 2020-
Guest Editor	<i>Journal of Molecular and Cellular Cardiology</i> , 2012, 2013
Reviewer	<i>American Heart Journal</i> , <i>American Journal of Physiology</i> , <i>Canadian Journal of Physiology and Pharmacology</i> , <i>Cardiovascular Research</i> , <i>Circulation</i> , <i>Circulation Research</i> , <i>European Journal of Pharmacology</i> , <i>Heart and Lung Journal of Critical Care</i> , <i>Heart Rhythm Journal</i> , <i>Intensive Care Medicine</i> , <i>International Journal of Biochemistry and Cell Biology</i> , <i>Mathematical Biosciences</i> , <i>Journal of the American College of Cardiology</i> , <i>Journal of the American Geriatrics Society</i> , <i>Journal of Cardiovascular Electrophysiology</i> , <i>Journal of Cardiovascular Pharmacology and Therapeutics</i> , <i>Journal of Cellular Physiology</i> , <i>Journal of Clinical Investigation</i> , <i>Journal of General Physiology</i> , <i>Molecular Pharmacology</i> , <i>Pflugers Archives</i> , <i>European Journal of Physiology</i> , <i>Journal of Physiology</i> , <i>Nature Cell Biology</i> , <i>Neuron</i> , <i>Proceedings of the National Academy of Science</i> , <i>Science</i>
Abstract grader	American Heart Association, National Scientific Sessions, 1988-1992, 1994-1997, 1999-2010 Western Society for Clinical Investigation, Cardiovascular Sessions, 1988, 1990 annual meeting

Patents and inventions:

U.S. Patent 5,342,401, "Real time cardiac arrhythmia stabilizing system", filed 8/19/92, issued 8/30/94, Inventors M.L. Spano, W.L. Ditto, A.J. Garfinkel, J.N. Weiss.

Extramural grant support:**Active:**

Co-investigator (10% effort), NIH/NHLBI_1R01 HL134346-01A1, "The Late L-type Ca Current as the Target for a New Class of Antiarrhythmics" (PI: R. Olcese), \$1,534,112 total direct costs for the current funding period 04/01/17 - 03/31/21.

Co-investigator (10% effort), NIH/NHLBI_1R01 HL133294, "Mitochondria and arrhythmogenic calcium cycling dynamics in the heart" (MPI: Z. Qu, L-H. Xie), \$880,000 total direct costs for the current funding period 4/01/17-01/31/21

Co-investigator (10% effort), NIH/NHLBI, 1R01 HL133294, "SK currents and ventricular arrhythmia" (MPI: Z. Qu, P-S. Chen), \$600,000 total direct costs for the current funding period 09/01/17-08/31/21

Past:

Principal Investigator, NIH/NHLBI, 1T32 HL07895, "Cardiovascular Scientist Training Program", 7/1/98-6/30/19, \$2,123,769 total direct costs for current funding period 7/1/14-6/30/19.

Principal Investigator (MPI: J. Weiss (Contact PI), M. Deng, A. Karma, A.J. Lusis, Y. Wang.), NIH/NHLBI R01 HL114437 "Systems Approach to Unraveling the Genetic Basis of Heart Failure," 9/4/13-5/31/17, \$3,328,835 total direct costs.

Principal Investigator (MPI: J. Weiss (Contact PI), P. Ping), NIH/NHLBI R01 HL117385 "Hexokinases and cardioprotection," 8/12/13-5/31/17, \$1,254,320 total direct costs.

Principal Investigator & Program Director, NIH/NHLBI, 1P01 HL078931 Program Project "Mechanisms and Therapy of Cardiac Fibrillation", 7/1/05-5/31/16, \$7,545,820 total direct costs for current funding period 6/1/11-5/31/16 (no cost extension to 5/31/17); Project 2 Leader "Cellular Mechanisms of Cardiac Arrhythmias," Core C Director "Administrative Core".

Principal Investigator, AHA-Western States Affiliate Innovative Science Award 12PILT12560004, "Stabilizer Cells: A Novel Gene Therapy Approach to Treat Cardiac Arrhythmias," 7/1/12-6/30/14, \$400,000 total direct costs

Principal Investigator (MPI: P. Ping (Contact PI), J. Weiss, H. Cua), NIH/NHLBI R01 HL101228, "Mitochondrial Pathways in NO-induced Cardioprotection," 4/1/10-3/31/14, \$533,000 total direct costs.

Co-Investigator, NIH/NHLBI Contract #: HHSN268201000035C (PI: Peipei Ping), "Proteome Biology of Cardiovascular Disease," 08/15/10-08/14/13, \$612,410 total direct costs.

Sponsor (Principal Investigator) for Guillaume Calmettes, PhD, American Heart Association, Western States Affiliate, Post-doctoral Research Fellowship 11POST6110007, "Hexokinase translocation during ischemia: Implications for cardioprotection," 7/1/11-6/30/13, \$81,000 direct costs

Sponsor (Principal Investigator) for Chris Ko, American Heart Association, Western States Affiliate, Pre-doctoral Research Fellowship 10PRE3030052, "Ca alternans and the 3 R hypothesis," 7/1/10-9/30/12, \$43,000 direct costs

Project Leader, NIH/NHLBI, 1P01 HL080111 Program Project 'Ischemic Injury and Protection,' (PI: Peipei Ping), Project 1 "Regulation of the Mitochondrial Permeability Transition in Ischemic Injury and Protection: Priming and Trigger Components," 6/1/05- 6/30/11, \$1,250,000 total direct costs.

Principal Investigator, NIH/NHLBI R01 HL103662, "Afterdepolarizations and Cardiac Arrhythmias," 7/1/10-6/30/14, \$1,400,000 total direct costs. Relinquished on 5/31/11 in favor of 1P01 HL078931 due to overlap.

Principal Investigator (MPI: J. Weiss (Contact PI), Z. Qu), NIH/NHLBI R01 HL095663, "Metabolic Oscillations in Heart," 7/1/09-6/30/11, \$553,838 total direct costs.

Principal Investigator, NIH/NHLBI, R13 HL108483-01, "Cardiac Arrhythmia Mechanisms Gordon Research Conference, 2/13/11-8/1/11, \$15,000 total direct costs.

Sponsor (Principal Investigator) for Thao Nguyen, MD, PhD, American Heart Association, Western States Affiliate, Post-doctoral Research Fellowship, "Mechanisms of cardiac arrhythmias: the role of fibrosis in atrial fibrillation," 7/1/10-6/30/12, \$77,000 direct costs

Sponsor (Principal Investigator) for Thao Nguyen, Heart Rhythm Society Research Fellowship, "Mechanisms of cardiac arrhythmias: the role of fibrosis in atrial fibrillation," 7/1/09-6/30/10, \$50,000 direct costs.

Co-investigator, NIH/NHLBI, R01 HL093205 (PI: G. Koren), "Sex Hormones and Cardiac Arrhythmia in Transgenic LQT2 Rabbits, 4/1/09-3/31/10, \$40,000 total direct costs for UCLA subcontract.

Sponsor (Principal Investigator) for D. Sato, American Heart Association, Western States Affiliate, Postdoctoral Research Fellowship, "Mechanisms of cardiac early and delayed afterdepolarizations and their arrhythmogenic effects," 7/1/08-6/30/09, \$77,000 direct costs

Principal Investigator, NIH/NHLBI, 1R37 HL60025 (MERIT Award), "Properties of inward rectifier potassium channels" 6/1/98-5/31/08, \$2,500,000 direct costs.

Sponsor (Principal Investigator) for Carlos De Diego, American Heart Association, Western States Affiliate, Postdoctoral Research Fellowship, 7/1/06-6/30/08, \$144,000 direct costs

Principal Investigator, NIH/NHLBI, 1R01 HL071870, "Mitochondria and cardiac cell death," 4/1/04-3/31/08, \$900,000 total direct costs.

Principal Investigator and Program Director, NIH/NHLBI, 1P50 HL52319, SCOR in Sudden Cardiac Death, 2/1/95-12/31/04, \$4,799,625 total direct costs for funding period 1/1/00-12/31/04.

Sponsor (Principal Investigator) for Lai-Hua Xie, American Heart Association, Western States Affiliate, Postdoctoral Research Fellowship 0120011Y, "Inward rectification in the strong inward rectifier Kir2.1", 7/1/01-6/30/02, \$72,000 direct costs

Sponsor (Principal Investigator) for Zhilin Qu, American Heart Association, Greater Los Angeles Affiliate, Research Fellowship "Restitution properties in the genesis of ventricular fibrillation", 7/1/97-6/30/99, \$55,800 direct costs.

Sponsor (Principal Investigator) for Kalyanam Shivkumar, American Heart Association, Greater Los Angeles Affiliate, Research Fellowship "Modulation of the K_{ATP} channel by protein kinase C and adenosine," 7/1/97-6/30/99, \$53,200 direct costs.

Sponsor for Sen Ji, American Heart Association, Greater Los Angeles Affiliate, Initial Investigator Award, "Mechano-sensitivity of G-protein regulated potassium channels", 7/1/97-6/30/98, \$66,400 direct costs.

Sponsor (Principal Investigator) for Jong-Kook Lee, American Heart Association, Greater Los Angeles Affiliate, Research Fellowship "Mechanism of inward rectification of IRK1 channels", 7/1/97-6/30/99, \$55,800 direct costs.

Principal Investigator, NHLBI, 1RO1 HL44880, "Intracellular calcium during impaired cardiac metabolism," 7/1/90-11/30/98, \$1,066,971 total direct costs for final budget period (12/6/93-11/30/98).

Principal Investigator, NHLBI, 1RO1 HL36729, "Cardiac function during impaired metabolism," 7/1/86-5/31/98, \$467,538 total direct costs for final budget period (7/1/94-5/31/98).

Preceptor for Henry Honda, Principal Investigator, American Heart Association, Greater Los Angeles Affiliate, Clinician-Scientist Award 1092-CS1, "Role of intracellular Ca in monocyte adhesion and transmigration", 7/1/95-6/30/98, \$120,000.

Sponsor (Principal Investigator) for Ru-Chi Shieh, American Heart Association, Greater Los Angeles Affiliate, Research Fellowship, "The molecular mechanism of rectification of the inward rectifier K channel" 7/1/94-6/30/95, \$18,000 total direct costs.

Preceptor for Joshua Goldhaber, Principal Investigator, American Heart Association, Greater Los Angeles Affiliate, Clinician-Scientist Award, "Effect of free radicals on intracellular Ca in heart", 7/1/90-6/30/95, \$110,000 total direct costs.

Principal Investigator, Medtronic, Inc, "Using chaos theory to control in cardiac arrhythmias", 7/1/93-6/30/94, \$112,500 total direct costs.

Co-investigator, 5% effort, A.M. Fogelman, Principal Investigator, National Heart Lung & Blood Institute, Institutional National Research Service Award 5T32 HL07412, "Pathophysiology of myocardial disease", 7/1/89-6/30/94, \$1,896,495 total direct costs.

Sponsor (Principal Investigator) for Henry Honda, American Heart Association, Greater Los Angeles Affiliate, Advanced Research Fellowship, "Effects of laminar vs. disturbed flow on endothelial cell function" 7/1/93-6/30/94, \$21,500 total direct costs.

Preceptor for Nicholas Deutsch, Principal Investigator, American Heart Association, Greater Los Angeles Affiliate, Clinician-Scientist Award, "Modulation of the ATP-sensitive K channel during metabolic inhibition", 7/1/91-6/30/94, \$110,000 total direct costs.

Sponsor (Principal Investigator) for Nicholas Deutsch, American Heart Association, Greater Los Angeles Affiliate, Research Fellowship "The metabolic effects of hypoxia and the ATP-sensitive K channel", 7/1/90-6/30/91, \$18,500 direct costs.

Sponsor (Principal Investigator) for Joshua Goldhaber, American Heart Association, Greater Los Angeles Affiliate, Research Fellowship, "Effect of free radicals on intracellular Ca in heart", 7/1/89-6/30/90, \$18,500 total direct costs.

Preceptor (from 1989) for Nagammal Venkatesh, Principal Investigator, Veterans Administration, Research Associate Career Development Award RA-1393c, "Amiodarone and metabolites - ? a class of myocardial T₃ antagonists", 7/1/87-6/30/91, \$286,000.

Co-investigator, 10% effort, W. Friedman, Principal Investigator, NHLBI, 1RO1 HL35783, "Physiology of ischemia and hypoxia in developing heart, 10/1/85-9/30/88, \$157,671 total direct costs.

Principal Investigator, Flintridge Foundation, "Cellular mechanisms of arrhythmias", 12/1/87-11/30/88, \$48,000, total direct costs.

Principal Investigator, 75% effort, NHLBI, Research Career Development Award 1KO4 HL01890, "Cardiac function during impaired metabolism," 1/1/87-12/30/91, \$254,000 total direct costs.

Principal Investigator, 60% effort, NHLBI, New Investigator Research Award 1R23 HL27846, "Extracellular K and H⁺ accumulation during ischemia, 12/1/83-11/30/86, \$107,499 total direct costs.

Principal Investigator, 70% effort, American Heart Association, Grant-in-aid 83-626, "Kand H⁺ accumulation and cardiac function during ischemia", 8/1/83-7/31/86, \$99,775 total direct costs.

Principal Investigator, 70% effort, American Heart Association, Greater Los Angeles Affiliate, Grant-in-aid 736-G2, "Arrhythmogenesis during early myocardial ischemia", 7/1/81-6/30/83, \$40,000 total direct costs.

Research Trainees:

Predoctoral:	<i>Dates</i>	<i>Current position</i>
Eva N. Runnman (Cox), M.D.	7/85-6/86 7/87-8/87 10/88-12/88	Internist, San Diego, CA
Hal F. Yee, M.D., Ph.D.	9/87-9/88	Chief Medical Officer, Los Angeles County Health System
Edwin Liu, M.D.	6/89-6/90	Pediatric neurologist
Julian Ray, B.Sc.	10/93-12/93	Physician, London, UK
Kalyanam Shivkumar, M.D, Ph.D.	9/95-6/99	(STAR Program graduate), Professor of Clinical Medicine (Cardiology), UCLA School of Medicine, Director, UCLA Arrhythmia Center
David Cesario, M.D., Ph.D.	1/00-6/03	(STAR Program graduate), Director of Electrophysiology, Kaiser Medical Center, Los Angeles, CA
Aman Mahajan, M.D., Ph.D.	1/03-6/06	(STAR Program graduate), Professor and Chair, Department of Anesthesiology, UCLA School of Medicine
Robert Peralta, M.D.	7/03-6/04	(Sarnoff research fellow) Ophthalmologist, San Francisco, CAa
Christine Rongey, M.D.	10/06-7/08	(Sarnoff research fellow), Pathology fellow, U Washington Medical Center
Marvin Chang, M.D, Ph.D	7/08-9/11	Anesthesiology resident, UCLA School of Medicine
Aneesh Bapat, M.D.	7/10-6/11	(Sarnoff research fellow), Cardiology fellow, Brigham & Womens Hospital
Jonathan Hoffman, M.D., Ph.D.	7/11-6/15	(STAR Program graduate), Clinical cardiac electrophysiology fellow, UCLA School of Medicine
Chris Ko, Ph.D.	6/09-4/16	Post-doctoral research fellow, UC Davis
Michael B. Liu, M.Sc.	7/15-6/19	Medical Scientist Training Program, UCLA School of Medicine (co-mentor)
Julian Landaw, B.Sc.	7/16-6/10	Medical Scientist Training Program, UCLA School of Medicine (co-mentor)
Postdoctoral:		
Gregory S. Couper, M.D.	7/81-6/83	Professor of Surgery, Harvard Medical School; Director, Heart Transplant and Circulatory Assist Program, Brigham & Womens Hospital
William G. Stevenson, M.D.	7/82-9/83	Professor of Medicine, Harvard Medical School
George Mitchell, M.D.	7/83-10/83	Professor of Clinical Medicine, UCLA Health System
Martin Schaeffer, M.D.	9/83-11/83	Cardiologist, Las Vegas, NV
Ernst Hofer, Ph.D.	9/84-2/85	Assistant Professor of Biomedical Engineering, University of Graz, Austria
Sen Ji, M.D., Ph.D.	9/86-10/88 10/95-5/98	Clinical Assistant Professor, UCLA School of Medicine, Kaiser Sunset Medical Center

Joshua I. Goldhaber, M.D.	9/86-6/90	Lyon Professor of Medicine, Director of Basic Research Programs, Cedars-Sinai Heart Institute, UCLA School of Medicine
Nagammal Venkatesh, M.D.	9/88-10/91	Cardiologist in private practice
Nicholas Deutsch, M.D.	10/89-6/91	Staff anesthesiologist, Kaiser Permanente, Los Angeles, CA
Larry V. Hryshko, Ph.D.	9/91-7/94	Professor of Physiology, University of Manitoba, Winnipeg, Canada (co-mentor)
Henry Honda, M.D.	9/91-7/93	Clinical Professor of Medicine, UCLA School of Medicine
Ru-Chi Shieh, Ph.D.	7/92-7/95	Associate Professor, Academia Sinica, Taiwan
Phillip Yang, M.D.	9/92-12/92	Associate Professor of Medicine, Director, Laboratory for Cellular and Molecular MRI of Cardiovascular Stem Cells, Director, Cardiothoracic MRI Program, Stanford University School of Medicine
Scott A. John, Ph.D.	8/93-6/98	Adjunct Professor, UCLA School of Medicine
Satoshi Matsuoka, M.D., Ph.D.	7/93-3/94	Associate Professor of Physiology, Kyoto University, Japan
Andrea Doering, Ph.D., MBA	1/95-7/99	Business consultant
Zhilin Qu, Ph.D.	8/95-6/99	Professor of Medicine, UCLA School of Medicine (co-mentor)
Jong-Kook Lee, M.D., Ph.D	9/95-6/98	Associate Professor, Institute of Environmental, Nagoya University
Richard Kondo, Ph.D.	9/95-1/00	Biotech scientific officer (co-mentor)
Fagen Xi, Ph.D.	5/97-6/00	Statistician, Kaiser Permanente (co-mentor)
Zijian Xu, M.D., Ph.D.	12/98-12/99	Cardiologist, Sacramento, CA
	6/98-1/00	Assistant Professor of Medicine, Xian Medical University, PRC (co-mentor)
Lai-Hua Xie, Ph.D.	7/99-6/02	Associate Professor of Cell Biology and Molecular Medicine, University of Medicine and Dentistry of New Jersey
Yohannes Shiferaw, Ph.D.	9/03-8/06	Professor of Physics, California State University at Northridge (co-mentor)
Carlos De Diego, M.D.	7/1/06-6/08	Assistant Professor of Cardiology, Madrid University Medical Center, Madrid, Spain
Jun-Hai Yang, Ph.D.	6/05-6/08	Project Scientist, UCLA School of Medicine
Daisuke Sato, Ph.D.	10/06-9/09	Project Scientist, UC Davis Department of Pharmacology, Davis, CA (co-mentor)
Yuanfang Xie, Ph.D.	10/08-9/10	Project Scientist, UC Davis Department of Pharmacology, Davis, CA (co-mentor)
Thao Nguyen, M.D., Ph.D.	2/08-6/11	Adjunct Associate Professor of Medicine, UCLA School of Medicine
Melissa Velella-Nivala, Ph.D.	10/09-9/12	Instructor in physics, Loyola Marymount College, CA (co-mentor)
Michael Nivala, Ph.D.	10/09-9/13	Consulting scientist, Oregon
Guillaume Calmettes, Ph.D.	9/10-6/15	Data scientist, Tech industry
Zheng Song, Ph.D.	9/14-6/17	Assistant Researcher, UCLA School of Medicine
Neha Singh, Ph.D	7/14-2/16	Scientist, Cardiovascular Division, Amgen, San Francisco, CA (co-mentor)

Teaching (David Geffen School of Medicine at UCLA):

Lecturer, M202 Pathophysiology of Disease	1 lecture per yr, 1982-1988
Lecturer, M101 Physiology	2 lectures per yr, 1998-2019
Lecturer, Cardiology Core Curriculum	4-6 lectures per yr, 1981-2019
Lecturer, Medical Science College Foundations	1 lecture per yr, 2003-2010
Lecturer, Coronary Care Unit Resident Lecture Series	12 lectures per yr, 2013-2019t

Clinical Activities (UCLA Medical Center):

Clinical Electrophysiology Attending	1981-1986
Attending Cardiologist, Coronary Care Unit	6-8 weeks per year, 1981-2010
Attending Cardiologist, Consultation Service	1-2 weeks per year, 1981-2009
Attending Cardiology, Cardiac Observation Unit	8 weeks per year, 2009-2013
Attending Cardiologist, Cardiology Clinic	½ day per week, 1981-2019

Invited Lectures and Visits:**1984-1989**

Invited speaker	Greater Los Angeles Electrophysiology Society, Los Angeles, California, February, 1984.
Invited speaker	Department of Physiology, University of Pennsylvania, Philadelphia, Pennsylvania, June, 1984
Invited speaker	"Recent trends in the treatment of life-threatening ventricular arrhythmias", UCLA Interdepartmental Conference, UCLA School of Medicine, Los Angeles, California, September, 1984.
Invited speaker	Division of Cardiology, Cedars-Sinai Medical Center, Los Angeles, California, February, 1985.
Invited speaker	Division of Cardiology, Wadsworth VA Medical Center, Los Angeles, California, May, 1986.
Invited speaker	"Recent developments in myocardial ischemia", UCLA Interdepartmental Conference, UCLA School of Medicine, Los Angeles, California, November, 1986.
Guest faculty	International Cardiac Electrophysiology Congress "20 years of programmed electrical stimulation - where to go from here?", Maastricht, The Netherlands, June, 1987.
Invited speaker	Division of Cardiology, Wadsworth VA Medical Center, Los Angeles, California, September, 1987.
Invited speaker	Department of Medicine and the Nora Harris Eccles Cardiovascular Research Institute, University of Utah, Salt Lake City, Utah, April, 1988.
Invited speaker	Anti-arrhythmic Drug Discovery Group seminar series, Searle Research and Development, Skokie, Illinois, May, 1988.
Invited speaker	Division of Cardiology, Wadsworth VA Medical Center, Los Angeles, California, July, 1988.
Guest faculty	Third Annual Current Concepts in the Diagnosis and Treatment of Cardiac Arrhythmias, Department of Medical Education, Daniel Freeman Memorial Hospital, Los Angeles, California, November, 1988.
Invited speaker	Medical Grand Rounds, UCLA-Harbor Medical Center, Los Angeles, California, August, 1989.
Invited speaker	UCLA-Harbor Medical Center, Los Angeles, California, August, 1989.
Invited speaker	Jerry Lewis Neuromuscular Research Center, Department of Physiology, UCLA School of Medicine, Los Angeles, California, September, 1989.
Moderator	"Ischemic ventricular arrhythmias", UCLA Interdepartmental Conference, UCLA School of Medicine, Los Angeles, California, October, 1989.

1990

Invited speaker	Research Service Seminar, Department of Medicine, Wadsworth VA Medical Center, Los Angeles, California, March, 1990.
Invited speaker	Department of Physiology, University of Pennsylvania School of Medicine, Philadelphia, Pennsylvania, June, 1990.
Invited speaker	Division of Cardiology, Johns Hopkins University School of Medicine, Baltimore, Maryland, June, 1990.
Invited speaker	Division of Cardiology, Wadsworth VA Medical Center, Los Angeles, California, June, 1990.
Invited speaker	Department of Medicine, Oregon Health Sciences University, Portland, Oregon, July, 1990.
Invited speaker	American Heart Association 63rd Annual Scientific Sessions, Postgraduate Seminar "Excitation-contraction coupling-signalling", Dallas, Texas, November, 1990.

1991

- Invited speaker Work Session on "The Role of Reactive Oxygen Species in Tissue Damage", University of Kansas Medical Center, Kansas City, Kansas, December, 1990.
- Invited speaker ASPET Symposium "Therapeutic potential of modulating potassium currents in the diseased myocardium", FASEB Annual Meeting, Atlanta, Georgia, April, 1991.
- Invited speaker NATO Advanced Research Workshop "Intracellular regulation of ion channels", Il Ciocco, Tuscany, Italy, April, 1991.
- Invited speaker Department of Physiology, Loma Linda University Medical Center, Loma Linda, California, June, 1991.
- Invited speaker Department of Physiology, UCLA School of Medicine, Los Angeles, California, June, 1991.
- Invited speaker Department of Medicine, University of Pennsylvania School of Medicine, Philadelphia, Pennsylvania, September, 1991.
- 1992**
- Keynote speaker Cardiovascular Young Investigators Conference, American Heart Association, California and Greater Los Angeles Affiliates, Asilomar, California, January, 1992.
- Invited speaker ISHR Satellite Symposium "K channels in the heart", Tokyo, Japan, May, 1992.
- Invited speaker Cardiac Electrophysiology Symposium, The Research Institute of Environmental Medicine, Nagoya University, Nagoya, Japan, May, 1992.
- Invited speaker Cardiac Pacemakers Incorporated, St. Paul, Minnesota, September, 1992
- Invited speaker American Heart Association 65rd Scientific Sessions, Postgraduate Seminar "Potassium loss in ischemic heart - mechanisms and consequences", New Orleans, Louisiana, November, 1992.
- Invited speaker American Heart Association 65rd Scientific Sessions, Postgraduate Seminar "ATP-sensitive potassium channels in ischemic heart", New Orleans, Louisiana, November, 1992.
- Invited speaker UCLA Department of Medicine Grand Rounds, Los Angeles, California, November, 1992
- 1993**
- Invited speaker Association of University Cardiologists, annual meeting, Naples, Florida, January, 1993
- Invited speaker Biophysical Society, Bioenergetics Subgroup Session "Cation carriers and channels of mitochondria and plasma membranes", Washington DC, February, 1993.
- Invited speaker Western Association of Physicians, annual meeting, Carmel, California, February, 1993.
- Invited speaker Division of Cardiology, University of North Carolina School of Medicine, Chapel Hill, North Carolina, April, 1993.
- Invited speaker International Conference on ATP-sensitive K channel and sulfonylurea receptors, Houston, TX, September, 1993.
- Invited speaker Second Experimental Chaos Conference, Washington, DC, October, 1993.
- Invited speaker CME Lecture, Valley Presbyterian Hospital, Van Nuys, California, October, 1993
- 1994**
- Invited speaker Department of Physiology, UCLA School of Medicine, Los Angeles, California, February, 1994.
- Invited speaker Oji International Seminar on the Pathophysiological Roles of Intramyocardial Calcium Ion, Osaka, Japan, October, 1994.
- 1995**
- Keynote speaker International Satellite Symposium of the 59th Annual meeting of the Japanese Circulation Society "Recent Progress in Electropharmacology of the Heart", Nagoya University, Nagoya, Japan, April, 1995.
- 1996**
- Keynote speaker International Symposium "K Channels in Normal and Pathological Condition", University of Leuven, Leuven, Belgium, September, 1995.
- Invited speaker Department of Physiology, Loyola University Stritch School of Medicine, Maywood, IL, January, 1996.
- Invited speaker Department of Pharmacology, Georgetown University School of Medicine, Washington DC, February, 1996.
- Invited speaker Division of Cardiology, Cedars-Sinai Medical Center, Los Angeles, CA, July, 1996

- Invited speaker American Heart Association 69th Scientific Sessions, Sunday Morning Program XIII: Metabolic Regulation of Cardiac Excitability and Contractility, "Evidence for functional compartmentalization of glycolysis", New Orleans, Louisiana, November, 1996.
- 1997**
- Invited speaker Distinguished Scientist Lecture, Department of Physiology, Faculty of Medicine, University of Manitoba, Winnipeg, Canada, April, 1997.
- Invited speaker UCLA Department of Medicine Grand Rounds, Los Angeles, California, July, 1997.
- Invited speaker Department of Physiology & Biophysics, University of Calgary, Calgary Canada, October, 1997.
- 1998**
- Invited speaker Grand Rounds, Department of Medicine, West Los Angeles VAMC, Los Angeles, California, March, 1998
- Invited speaker Gordon Conference on Cardiac Regulatory Mechanisms, New Hampshire, July, 1998.
- Invited speaker Department of Physiology, Loyola University Stritch School of Medicine, Maywood, IL, September, 1998.
- Invited speaker 2nd International Conference on ATP-sensitive K Channels and Disease, St. Charles, IL, September, 1998.
- Invited speaker American Heart Association 71st Scientific Sessions, Cardiovascular Seminar Session "Cardiac Potassium Channels", Dallas, TX, November, 1998.
- Invited speaker Department of Physiology Retreat, UCLA School of Medicine, Los Angeles, CA, October, 1998.
- 1999**
- Invited speaker Grand Rounds, Department of Medicine, UCLA-Harbor General Hospital, Los Angeles, CA, March, 1999.
- Invited speaker Joint US-Russia Symposium on Arrhythmias, Moscow, Russia, May, 1999.
- 2000**
- Invited speaker Department of Pharmacology, Georgetown University School of Medicine, January, 2000.
- Invited speaker International Symposium, "Advances in Cardiac Electrophysiology and Arrhythmia Management: Emerging Concepts for the 21st Century", Phuket, Thailand, February, 2000.
- Invited speaker NATO Advanced Research Workshop "Ca Signaling and Cross-talk in Excitable Tissue", Il Ciocco, Tuscany, Italy, April, 2000.
- Invited speaker Department of Pharmacology, Georgetown University School of Medicine, May, 2000.
- Invited speaker Cardiostim 2000, 12th World Congress in Cardiac Electrophysiology, Nice, France, June, 2000
- Invited speaker 4th Meeting of the Sicilian Gambit, Cape Cod, MA, October, 2000.
- Invited speaker Cardiovascular Grand Rounds, Brigham & Women's Hospital, Harvard Medical School, Boston, MA, October, 2000
- 2001**
- Invited speaker Department of Physiology and Cell Biology, University of Nevada, Reno, March, 2001
- Invited speaker Department of Medicine, University of Utah, Salt Lake City, April, 2001
- Invited speaker & co-organizer "Workshop on Dynamical Modeling of Complex Biomedical Systems," The National Academies, Board on Mathematical Sciences, April, 2001
- Invited speaker NASPE Clinical Tutorial "The Role of Computer Simulation in Understanding Basic Electrophysiology," NASPE Scientific Sessions, Boston, May, 2001
- Invited speaker Cardiology Grand Rounds, Department of Medicine (Cardiology), University of Iowa, Iowa City, May, 2001
- Invited speaker Scientific Conference on Molecular, Integrative, and Clinical Approaches to Myocardial Ischemia, American Heart Association, Seattle, WA, August, 2001
- Invited speaker Cardiology Grand Rounds, Division of Cardiology, Harbor-UCLA Medical Center, Los Angeles, CA, August, 2001
- Invited speaker Cardiology Grand Rounds, Division of Cardiology, West LA VA Medical Center, Los Angeles, CA, September, 2001
- Invited speaker Mayo Clinic, Cardiovascular Division, Rochester, MN, October, 2001.

Invited speaker	American Heart Association National Scientific Sessions, Sunday Morning Session "New Directions in the Biology of Ischemia," Anaheim, CA November, 2001.
Invited speaker	Department of Cardiology, Xavier Bichat Hospital, Paris, France, December, 2001
2002	
Invited speaker	Cardiology Grand Rounds, Division of Cardiology, UCSF School of Medicine, San Francisco, CA, March, 2002
Invited speaker	Department of Physiology, Rush Medical School, Chicago, IL, April, 2002
Invited speaker	NASPE 23 rd Annual Scientific Meetings, Basic Electrophysiology for the Physician, "Mechanisms of reentry," San Diego, CA, May, 2002.
Visiting professor	Pfizer/American College of Cardiology Foundation Visiting Professorship, Department of Medicine, Vanderbilt University, Nashville, TN, June, 2002
Invited speaker	Academia Sinica, Taipei, Taiwan, June, 2002
Invited speaker	Department of Cardiology, University of Seoul, Seoul, Korea, June, 2002
Invited speaker	Cardiostim 2002, 13 th World Congress in Cardiac Electrophysiology, Nice, France, June, 2002
Invited speaker	Department of Physiology, Cornell University, Ithaca, NY, September, 2002.
Invited speaker	American Heart Association Scientific Sessions, Basic Science Council featured research session 'Role of Mitochondria in Ischemia and Protection', "State-of-the-Art: Myocardial Ischemia and the Mitochondrial Permeability Transition", Chicago, IL, November, 2002
2003	
Invited speaker	NASPE 24 th Annual Scientific Meetings, Basic Electrophysiology for the Physician, "Ca Transients in Ventricular Fibrillation," Washington, DC, May, 2003.
Invited speaker	"Preventing/Reversing ischemia-induced arrhythmias," Session 3: Acute coronary syndromes and out-of-hospital arrest, NHLBI Working Group on the Translation of Therapies for Protecting the Heart from Ischemia, Bethesda, MD, June, 2003.
Invited speaker	Larry and Horti Fairberg Workshop, "Cardiac Engineering", Erice, Sicily, Italy, September, 2003.
Invited speaker	"A Physiologist's Perspective," Ventricular Tachyarrhythmias Workshop, Kavli Institute for Theoretical Physics Program on "Pattern Formation in Physics and Biology," UC Santa Barbara, October, 2003
Invited speaker	5 th Annual Michel Mirowski, MD, Lecture, Division of Cardiology, Johns Hopkins University School of Medicine, Baltimore, MD, October, 2003
Invited speaker	Cardiovascular Division, Brigham & Women's Hospital, Boston, MA, October, 2003
Invited speaker	American Heart Association National Scientific Sessions, Cardiovascular Seminar Session, "Mitochondrial ATP-sensitive K channels", Orlando, FL, November, 2003.
Invited speaker	Interdisciplinary Seminar "Nature and cardiac excitation/conduction system," Option on Bioengineering, California Institute of Technology, Pasadena, CA, December, 2004.
2004	
Invited speaker	Cardiology Grand Rounds, UC Irvine, Irvine, CA, April, 2004
Invited speaker	Cardiology Grand Rounds, Department of Medicine, David Geffen School of Medicine at UCLA, April, 2004
Invited speaker	Medicine Grand Rounds, Department of Medicine, David Geffen School of Medicine at UCLA, April, 2004
Invited speaker	Cardiology Grand Rounds, Emory School of Medicine, Atlanta, GA, April, 2004
Invited speaker	Vascular Biology Research Meeting, Emory School of Medicine, Atlanta, GA, April, 2004
Invited speaker	Department of Pharmacology, Georgetown University School of Medicine, Washington, DC, April, 2004
Invited speaker	"Oscillations and Waves in Cells and Cell Networks," Institute for Scientific Studies at Cargèse, Corsica, France, May, 2004.
Invited speaker	Heart Rhythm Society-NASPE 25 th Annual Scientific Meetings, San Francisco, CA, May, 2004.
Invited speaker	Gordon Research Conference on Cardiac Regulatory Mechanisms, Colby-Sawyer, NH, June, 2004
Visiting professor	Pfizer/American College of Cardiology Foundation Visiting Professorship, NYU School of Medicine, New York, NY, June, 2004

Invited speaker	Cardiovascular Grand Rounds, University of Connecticut School of Medicine, Farmington, CT, September, 2004
Invited speaker	Clinical Electrophysiology Core Curriculum, Cardiovascular Division, Brigham & Women's Hospital, Boston, MA, September, 2004.
Visiting Professor	Center for Cardiovascular Research, Washington University, St. Louis, MO, October, 2004
Invited speaker	American Heart Association National Scientific Sessions, Ask-the-Experts Session "Electrophysiology", New Orleans, LA, November, 2004.
2005	
Invited speaker	Larry and Horti Fairberg Workshop, "The Communicative Cardiac Cell", Sintra, Portugal, January, 2005.
Invited speaker	UCLA Cardiology Winter Update, Snowbird, UT, February, 2005
Invited speaker	2005 American Physical Society Meeting, Focus Session "Intracellular Ca Cycling in Myocytes," Los Angeles, CA, March, 2005
Invited speaker	Featured Symposium Session "Mending Broken Hearts - Managing The Rhythm Of Life: Rhythm Pharmacology", Heart Rhythm Society Annual Scientific Sessions, New Orleans, LA, May, 2005.
Invited speaker	The First International Symposium on the Role of Mitochondria in Cardiac Dysfunction, A Satellite Meeting of the XXVII Annual Meeting of the ISHR-American Section, New Orleans, May, 2005
Invited speaker	Research seminar, Rammelkamp Center for Education & Research, Heart and Vascular Research Center, MetroHealth Medical Center, Case Western Reserve University, May, 2005.
Visiting Professor	Heart and Vascular Center Distinguished Visiting Professor, Cardiology Grand Rounds, MetroHealth Medical Center, Case Western Reserve University, May, 2005.
Invited speaker	"Spatial effects in Signal Transduction" Workshop, Aspen Center for Physics, Aspen, CO, August, 2005.
Invited speaker	Division of Cardiology, Northwestern University, Chicago, IL, September, 2005.
Invited speaker	Department of Biophysics and Molecular Physiology, Rush University School of Medicine, Chicago, IL, September, 2005.
Invited speaker	Cardiology Grand Rounds, Division of Cardiology, West LA Veteran's Medical Center, Los Angeles, CA, December, 2005.
Invited speaker	National Institute of Aging, Baltimore, MD, December, 2005.
2006	
Invited speaker	International Symposium "Novel Therapeutic Targets for Heart Disease" Herzliya, Israel, January, 2006.
Invited speaker	Division of Cardiology, UCSF School of Medicine, San Francisco, CA, March, 2006.
Invited speaker	San Francisco Electrophysiology Society, San Francisco, CA, March, 2006.
Invited speaker	4 th Larry and Horti Fairberg Cardiac Workshop, "Interactive and Integrated Cardiology", Charleston, NC, April, 2006.
Invited speaker	Heart Rhythm Society Annual Scientific Sessions, Boston, MA, May, 2006.
Discussion leader	Gordon Research Conference on Cardiac Regulatory Mechanisms, Colby-Sawyer, NH, July, 2006
Invited speaker	Kavli Institute for Theoretical Physics Program on "Pattern Formation in Physics and Biology," UC Santa Barbara, July, 2006
Invited speaker	Department of Physiology, University of Arizona, Tucson, AZ, September, 2006.
Invited speaker	Division of Cardiology, Cedars-Sinai Medical Center, Los Angeles, CA, November, 2006.
2007	
Invited speaker	UCLA Cardiology Winter Update, Snowbird, UT, February, 2007.
Discussion leader	Gordon Research Conference on Arrhythmias, Ventura, CA, March, 2007.
Invited faculty	Meet the Masters, Global Fellows Round Table, Institute for Therapy Advancement, Denver, CO, May, 2007
Invited speaker	Medicine Grand Rounds, Department of Medicine, David Geffen School of Medicine at UCLA, Los Angeles, CA, May, 2007
Invited speaker	International Society for Heart Research, North American Section, Bologna, Italy, June, 2007.

- Invited speaker NIH/NHLBI, Division of Cardiovascular Diseases Workshop, "Systems Approach to Understanding Electromechanical Activity in the Human Heart" Washington, DC, August, 2007.
- Invited speaker Division of Cardiology, Mt. Sinai School of Medicine, New York, NY, September, 2007.
- Invited speaker California Heart Rhythm Symposium, State-of-the-Art lecture, Santa Monica, CA, October, 2007.

2008

- Invited speaker Research Seminar and Cardiology Grand Rounds, Cardiovascular Research Center and Division of Cardiology, Rhode Island Hospital, Brown University School of Medicine, Providence, RI, January, 2008.
- Invited speaker UCLA Cardiology Winter Update, Snowbird, UT, February, 2008.
- Invited speaker Division of Cardiology, UCSD School of Medicine, San Diego, CA, February, 2008
- Invited speaker Inaugural Cardiovascular Research Day/Symposium, University of Miami Miller School of Medicine, Miami, FL, March 2008
- Invited faculty Meet the Masters, Global Fellows Round Table, Institute for Therapy Advancement, San Francisco, CA, May, 2008
- Invited speaker Heart Rhythm Society Annual Scientific Sessions, San Francisco, CA, May, 2008.
- Discussion leader Gordon Research Conference on Cardiac Regulatory Mechanisms, Colby-Sawyer, NH, July, 2008
- Invited speaker American Heart Association 2008 Scientific Sessions, Sunday AM Session: Big Science '-Omics' Technology Meets Cardiovascular Biology, "Computational modeling of cardiac myocyte function", New Orleans, LO, November, 2008
- Invited speaker Krannert Institute and Division of Cardiology, Indiana University School of Medicine, Indianapolis, IN, December, 2008.

2009

- Vice chair Gordon Research Conference on Arrhythmias, Il Cocchio, Italy, February, 2009
- Visiting Professor Isadore Rosenfeld Visiting Professorship 2009 of Weil College of Medicine, Department of Medicine, Cornell University, New York, NY, March, 2009
- Invited speaker Keystone Symposium "Common Mechanisms in Arrhythmias and Heart Failure", Keystone, CO, April, 2009.
- Invited speaker Department of Biomedical Engineering, John Hopkins University, Baltimore, MD, April, 2009.
- Invited speaker Cardiovascular Division, Washington University School of Medicine, St. Louis, MO, May, 2009.
- Invited faculty Heart Rhythm Society Annual Scientific Sessions, Translational Electrophysiology Session: Translational Research in Sudden Cardiac Death and Heart Failure, "Re-entry and sudden cardiac death," Boston, MA, May, 2009
- Invited speaker Department of Cell Biology, Medical University of South Carolina, Charleston, SC, June, 2009
- Invited speaker Discovery Lecture Series at the Ohio State University, Davis Heart and Lung Research Institute, Ohio State University, Columbus, OH, October, 2009.
- Keynote speaker "Dr. E. R. Smith Lectureship in Cardiovascular Research", Annual Research Day, Libin Cardiovascular Institute of Alberta, Faculty of Medicine, University of Calgary, Calgary, Canada, November, 2009
- Invited speaker Cardiovascular Division, University of Iowa School of Medicine, November, 2009.
- Invited panelist UCLA Departments of Physiological Science and Physiology, New Directions in Physiology Symposium, December, 2009.

2010

- Invited speaker Department of Medicine Grand Rounds, Harbor-UCLA Medical Center, Los Angeles, CA, January, 2010.
- Invited discussant UC Davis Cardiovascular Symposium, "Systems Approach to Understanding Cardiac Excitation-Contraction Coupling, Davis, CA, February, 2010.
- Invited speaker Meet the Masters at Harvard University: A Program for Heart Rhythm Management Fellows, Boston, MA, May, 2010.
- Invited speaker Douglas P. Zipes Lectureship Award, Heart Rhythm Society and Cardiac EP Society, Heart Rhythm 31st Annual Scientific Sessions, Denver, CO, May, 2010.

- Invited speaker Translational Electrophysiology Session: "The Purkinje Cell as a Source of Arrhythmias", Heart Rhythm 31st Annual Scientific Sessions, Denver, CO, May, 2010
- Invited speaker Core Curriculum "Mitochondria as a Cause of Arrhythmogenesis", Heart Rhythm 31st Annual Scientific Sessions, Denver, CO, May, 2010
- Invited speaker Gordon Research Conference on Cardiac Regulatory Mechanisms, Colby-Sawyer College, NH, July, 2010.
- Invited speaker Cardiostim 2010, World Congress in Cardiac Electrophysiology, Nice, France, June, 2010.
- Keynote speaker Arizona Physiological Society, Annual Meeting, Phoenix, AZ, November, 2010.
- Invited speaker Department of Cardiology, Academic Medical Center, University of Amsterdam, November, 2010.
- Keynote speaker Workshop on "Frontiers in Electrocardiography III: Focus on Systems Biology," University of Maastricht, The Netherlands, November, 2010.
- Invited speaker T32 Training Grant Distinguished Speaker Series, Department of Pharmacology, UC Davis, November, 2010.

2011

- Invited speaker International Symposium on Mapping the Human Proteome, UCLA School of Medicine, Los Angeles, CA, January, 2011
- Invited speaker 13th La Jolla-International Cardiovascular Research Conference "Emerging Molecular and Cellular Insights Into Heart Failure and Arrhythmias", UCSD School of Medicine, La Jolla, CA, March, 2011
- Invited speaker Cardiology Grand Rounds, Division of Cardiology, Stanford University School of Medicine, Palo Alto, CA, April, 2011
- Invited speaker San Francisco Cardiac Electrophysiology Society, Palo Alto, CA, April, 2011
- Invited speaker Core Curriculum: "Fibroblast-Myocyte Coupling", Heart Rhythm 32nd Annual Scientific Sessions, San Francisco, CA, May, 2011
- Invited speaker Core Curriculum: "Oxidative Stress and Afterdepolarizations", Heart Rhythm 32nd Annual Scientific Sessions, San Francisco, CA, May, 2011.
- Invited speaker NIH/NHLBI Grantees Meeting "The role of cardiomyocyte mitochondrial in heart disease: an integrated approach," Bethesda, MD, May, 2011
- Invited speaker Department of Physics, Northeastern University, Boston, MA, May, 2011.
- Keynote speaker 12th Gordon K. Moe Keynote Lecture, 21th Annual Meeting, Upstate New York Electrophysiology Society, Syracuse, NY, October 2011.
- Invited speaker Cardiovascular Seminar Session "Systems Biology for Heart Failure," American Heart Association Scientific Sessions, Orlando FL, November, 2011.

2012

- Invited speaker Cardiology Grand Rounds, Krannert Institute and Division of Cardiology, Indiana University School of Medicine, Indianapolis, IN, April, 2012.
- Moderator Career Roundtable Luncheon, Career Planning Organization for Women, Biophysical Society National Scientific Sessions, San Diego, CA, February, 2012
- Invited speaker NIH/NHLBI Second Annual Grantees Meeting, "The Role of the Cardiomyocyte Mitochondria in Heart Disease: An Integrated Approach," Bethesda, MD, May, 2012.
- Invited speaker ISHR-North American Section Annual Meeting "Pathology and Treatment of Heart Failure," Banff, Alberta, Canada, May, 2012
- Moderator American Heart Association, Basic Cardiovascular Science Annual Meeting, "Systems Approaches to Cardiovascular Disease," New Orleans, LA, July, 2012
- Invited speaker Department of Cell Biology and Molecular Medicine, University of Medicine and Dentistry at New Jersey (UMDNJ), July, 2012.
- Invited speaker Duke Cardiovascular Research Seminar Series, Duke University Medical Center, September, 2012
- Invited speaker 5th Asian-Pacific Heart Rhythm Society Scientific Session, New Insights into the Mechanisms of VT/VF session: "Special lecture 2: Dynamics of Heart Rhythm Disorders"; Inherited Arrhythmias session: "Unraveling the Genetics of Cardiac Arrhythmias", Taipei, Taiwan, October, 2012
- Invited speaker Institute for Biomedical Sciences, Academia Sinica, Taipei, Taiwan, October, 2012
- Invited speaker Shanghai Transportation University, Shanghai, China, October, 2012
- Invited speaker 2nd Affiliated Hospital of Zhejiang University School of Medicine Center, Shanghai, China, October, 2012

- Invited speaker Perspectives in Clinical Cardiology, Division of Cardiology, UC Davis School of Medicine, Sacramento, CA, October, 2012.
- Invited speaker UCLA Cardioprotection Colloquium, Departments of Physiology, Medicine and Anesthesiology, David Geffen School of Medicine at UCLA, Los Angeles, CA, November, 2012
- Invited speaker American Heart Association 2012 Scientific Sessions, How To Session: Systems Biology and Vascular Disease/Therapeutics, "Systems Biology and Ion Channels/Connexins," Los Angeles, CA, November, 2012
- 2013**
- Invited speaker Gordon Research Conference on Cardiac Arrhythmia Mechanisms, Ventura, CA, February, 2013
- Invited speaker Feinberg Cardiovascular Institute Seminar Series, Northwestern University School of Medicine, Chicago, IL, April, 2013
- Invited speaker 11TH Annual CNS Basic And Translational Science Symposium "System Biological Approaches To Gut-Brain Interactions In Health And Disease – From Molecular To Social Networks", Gail & Gerald Oppenheimer Family Center for Neurobiology of Stress, Department of Medicine, David Geffen School of Medicine at UCLA, Los Angeles, CA, April, 2013
- Invited speaker Department of Bioengineering, College of Science and Engineering, University of Minnesota, Minneapolis, MN, May, 2013
- Invited speaker Core Curricula Session #051, "Arrhythmias from Oxidation in Small Places," Heart Rhythm 32nd Annual Scientific Sessions, Denver, CO, May, 2013
- Invited speaker Symposium in Honor of David Rosenbaum, MD, PhD, Case Western Reserve University, MetroHealth Campus, Cleveland, OH, May, 2013
- Invited speaker Heart Failure Symposium, Penn Cardiovascular Institute, University of Pennsylvania School of Medicine, Philadelphia, PA, May, 2013
- Invited speaker International Society of Heart Research XXI World Congress, Symposium 19, "The Battle for Mitochondrial Redox Regulation," San Diego, CA, July, 2013
- Invited speaker Department of Medicine Grand Rounds, David Geffen School of Medicine at UCLA, September, 2013.
- Invited speaker Cardiovascular Research Center, Brown University School of Medicine, Providence, RI, September, 2013
- Invited speaker Division of Cardiology, Rhode Island Hospital, Brown University School of Medicine, Providence, RI, September, 2013
- Invited speaker American Heart Association 2013 Scientific Sessions, Cardiovascular Seminar: New Advances in Cardiac Systems Biology Session, "Systems Genetics for Cardiovascular Diseases," Dallas, TX, November, 2013.
- Invited speaker Cardiac Bioelectricity and Arrhythmia Center, Department of Bioengineering, Washington University, St. Louis, MO, November, 2013
- Invited speaker Division of Cardiology, University of Utah School of Medicine, Salt Lake City, UT, December, 2013.
- 2014**
- Invited speaker UC Davis Cardiovascular Symposium, "Systems Approach to Understanding Cardiac Excitation-Contraction Coupling and Arrhythmias: Na channel and Na transport," UC Davis, Davis, CA, February, 2014.
- Invited speaker Department of Cell and Tissue Engineering, Fraunhofer Institute for Interfacial Engineering and Biotechnology IGB, Stuttgart, Germany, March, 2014
- Keynote speaker 2014 Archibald Byron Macallum Lectureship, Department of Physiology, University of Toronto, Ontario, Canada, April, 2014
- Keynote speaker Frontiers in Physiology Keynote Lecture, Department of Physiology, University of Toronto, Ontario, Canada, April, 2014
- Invited speaker Heart Rhythm Journal Presents: Ionic Mechanisms of Cardiac Arrhythmia, "Pro- and antiarrhythmic effects of ATP-sensitive potassium current activation on reentry during early afterdepolarization-mediated arrhythmias," Heart Rhythm 33rd Annual Scientific Sessions, San Francisco, CA, May, 2014
- Invited speaker Cardiostim 2014, World Congress in Cardiac Electrophysiology, Nice, France, June, 2014.
- Invited speaker 2014 California Heart Rhythm Symposium, Beverly Hills, CA, September, 2014.

2015

Moderator	Gordon Research Conference on Cardiac Arrhythmia Mechanisms, Il Cocchio, Tuscany, Italy, March, 2015
Invited speaker	2 nd Annual EP Fellows Symposium on Long-Standing Persistent Atrial Fibrillation, "Mechanisms of AF: Rotors, Wavelets, Triggers, Autonomics" Boston, MA, May, 2015
Invited speaker	Distinguished Lecture Series, Mitochondria and Metabolism Center, Department of Physiology, University of Washington, Seattle, WA, October, 2015
Invited speaker	Division of Cardiology, Cardiology Grand Rounds, Medical University of South Carolina, Charleston, SC, November, 2015
Invited speaker	Department of Regenerative Medicine & Cell Biology, Medical University of South Carolina, Charleston, SC, November, 2015
2016	
Keynote Speaker	Cardiac Muscle Society, Annual Dinner Meeting, Los Angeles, CA, February 2016
Moderator	UC Davis Cardiovascular Symposium, "Systems Approach to Understand Cardiac Arrhythmias: K channels and regulation," UC Davis, Davis, CA, March, 2016.
Invited Speaker	International Society for Heart Research 2016 World Congress "Macromolecular complexes, compartmentation signaling and cardiac arrhythmias" Symposium. Buenos Aires, Argentina, April, 2016
Invited Speaker	Department of Medicine Grand Rounds, David Geffen School of Medicine at UCLA, Los Angeles, CA, June, 2016
Invited Speaker	Amgen Cardiovascular Program, Thousand Oaks, CA, August, 2016
Invited Speaker	"Frontiers in Cardiovascular Science" Seminar Series, Stanford Cardiovascular Institute, Stanford University School of Medicine, Palo Alto, CA, September, 2016
2017	
Invited speaker	"Preconditioning in Biology and Medicine", 16 th International Annual Dose-Response Conference, U Mass, Amherst, MA, April, 2017
Invited speaker	Division of Cardiology, NYU School of Medicine, New York, NY, May, 2017
Invited speaker	Cardiovascular Research Center seminar series, Massachusetts General Hospital, Boston, MA, October, 2017
2018	
Invited Speaker	Department of Medicine Grand Rounds, David Geffen School of Medicine at UCLA, Los Angeles, CA, May, 2018
Invited speaker	Department of Regenerative Medicine & Cell Biology, Medical University of South Carolina, Charleston, SC, June, 2018
Invited speaker	International Academy of Cardiovascular Sciences North American Section Meeting in conjunction with the Cuban Society of Cardiology and the Central American and Caribbean Society of Cardiology, Havana, Cuba, June, 2018
Invited speaker	"Integrative Cardiac Dynamics," Kavli Institute for Theoretical Physics, Santa Barbara, CA, July, 2018.
Moderator	"The Heart by Numbers: Integrating Theory, Computation and Experiment to Advance Cardiology," Biophysical Society Thematic Meeting, Berlin, Germany, September, 2018
Invited speaker	Centro Nacional de Investigaciones Cardiovasculares Carlos III (CNIC), Madrid, Spain, September, 2018
2019	
Invited speaker	Cardiovascular Research Center, Brown University School of Medicine, Providence, RI, November, 2019
Invited speaker	Cardiology Grand Rounds, Division of Cardiology, Rhode Island Hospital, Brown University School of Medicine, Providence, RI, November, 2019
2020	
Invited speaker	"Second International Conference on Network Medicine and Big Data", Brigham & Women's Hospital, Harvard University, May, 2020
Commencement speaker	STAR Program Graduation Ceremony, David Geffen School of Medicine at UCLA, September, 2020