April 26, 2023

CURRICULUM VITAE

Ronald David Berger, M.D., Ph.D., F.H.R.S.

Current Appointments

Johns Hopkins University:

Professor of Medicine
Professor of Biomedical Engineering
Nicholas J. Fortuin, MD Professor in Cardiology

Johns Hopkins Hospital:

Director, Inpatient Cardiology
Co-Director, Cardiac Electrophysiology
Director, Clinical Cardiac Electrophysiology Training Program

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Nationality: U.S.A.

Education

1981 B.S. Massachusetts Institute of Technology
Department of Electrical Engineering and Computer Science
Thesis: Two Dimensional Electro-Optic Light Beam Deflection in Single Crystals

1983 M.S. Massachusetts Institute of Technology
Department of Electrical Engineering and Computer Science
Thesis: A Mathematical Model of Atrial Fibrillation

1987 Ph.D. Massachusetts Institute of Technology
Department of Electrical Engineering and Computer Science
Thesis: Analysis of the Cardiovascular Control System Using Broad-Band Stimulation

1987 M.D. Harvard Medical School, Division of Health Sciences and Technology

Postdoctoral Training

1987-1988 Research Fellow, Harvard-M.I.T. Division of H.S.T.
1987-1988 Intern in Medicine, Brigham and Women's Hospital
1988-1990 Research Scientist, Harvard-M.I.T. Division of H.S.T.
1988-1990 Resident in Medicine, Brigham and Women's Hospital

1990-1992 Cardiology Fellow, Johns Hopkins Hospital
1992-1993 Cardiac Electrophysiology Fellow, Johns Hopkins Hospital

Professional Experience

1993-1998 Assistant Professor of Medicine, Johns Hopkins University
1998-2005 Associate Professor of Medicine, Johns Hopkins University
1993-1996 Attending Electrophysiologist, Johns Hopkins Hospital
1996-2002 Associate Director of Cardiac Electrophysiology, Johns Hopkins Hospital
2002- Co-Director of Cardiac Electrophysiology, Johns Hopkins Hospital
2002- Director of Cardiac EP Fellowship Training, Johns Hopkins University
2002-2005 Associate Professor of Biomedical Engineering, Johns Hopkins Univ.
2005- Professor of Medicine, Johns Hopkins University
2005- Professor of Biomedical Engineering, Johns Hopkins University
2018-2020 Interim Director, Division of Cardiology, Johns Hopkins Hospital
2020- Director, Inpatient Cardiology, Johns Hopkins Hospital
2020- Nicholas J. Fortuin Professor in Cardiology, Johns Hopkins University

Original Research

Peer-Reviewed Articles

1. **Berger RD**. Bailin MT. Pollick F. Cohen RJ. Experimental application of a computer model for atrial fibrillation. Computers in Cardiology. 10:197-200, 1983
2. Cohen RJ. **Berger RD**. Dushane TE. A quantitative model for the ventricular response during atrial fibrillation. IEEE Transactions on Biomedical Engineering. 30(12):769-781, 1983
3. **Berger RD**. Cohen RJ. Analysis of the response of the sino-atrial node to fluctuations in sympathetic and parasympathetic tone using broad band stimulation techniques. Computers in Cardiology. 13:153-156, 1986
4. Chen MH. **Berger RD**. Saul JP. Stevenson K. Cohen RJ. Transfer function analysis of the autonomic response to respiratory activity during random interval breathing. Computers in Cardiology. 13:149-152, 1986
5. Saul JP. Rea RF. **Berger RD**. Eckberg DL. Cohen RJ. Spectral analysis of peroneal nerve sympathetic activity and heart rate in man. Computers in Cardiology. 13:423-426, 1986
6. **Berger RD**. Akselrod S. Gordon D. Cohen RJ. An efficient algorithm for spectral analysis of heart rate variability. IEEE Transactions on Biomedical Engineering. 33(9):900-904, 1986
7. Saul JP. Albrecht P. **Berger RD**. Cohen RJ. Analysis of long term heart rate variability: methods, 1/f scaling and implications. Computers in Cardiology. 14:419-422, 1987
8. Raeder EA. **Berger R**. Kenet R. Kiely JP. Lehnert H. Cohen RJ. Lown B. Assessment of autonomic cardiac control by power spectrum of heart rate fluctuations. Journal of Applied Cardiology. 2:283-300, 1987
9. Saul JP. Arai Y. **Berger RD**. Lilly LS. Colucci WS. Cohen RJ. Assessment of autonomic regulation in chronic congestive heart failure by heart rate spectral analysis. American Journal of Cardiology. 61(15):1292-1299, 1988
10. **Berger RD**. Saul JP. Albrecht P. Stein SP. Cohen RJ. Respiratory effects on arterial pressure: a novel signal analysis approach. Proceedings of IEEE EMBS 10:533-534, 1988

11. **Berger RD**. Saul JP. Cohen RJ. Transfer function analysis of autonomic regulation. I. Canine atrial rate response. American Journal of Physiology. 256(1 Pt 2):H142-H152, 1989

12. Saul JP. **Berger RD**. Chen MH. Cohen RJ. Transfer function analysis of autonomic regulation. II. Respiratory sinus arrhythmia. American Journal of Physiology. 256(1 Pt 2):H153-H161, 1989

13. Appel ML. Saul JP. **Berger RD**. Cohen RJ. Closed loop identification of cardiovascular regulatory mechanisms. Computers in Cardiology. 16:3-8, 1989

14. **Berger RD**. Fogaca MF. Saul JP. Cohen RJ. Transfer function analysis of cardiovascular regulation in an open-loop animal model. Computers in Cardiology. 16:331-334, 1989

15. Saul JP. **Berger RD**. Cohen RJ. A simple analytical model mimics complex physiologic behavior. Computers in Cardiology. 16:335-338, 1989

16. **Berger RD**. Saul JP. Cohen RJ. Assessment of autonomic response by broad-band respiration. IEEE Transactions on Biomedical Engineering. 36(11):1061-1065, 1989

17. Appel ML. **Berger RD**. Saul JP. Smith JM. Cohen RJ. Beat to beat variability in cardiovascular variables: noise or music?. Journal of the American College of Cardiology. 14(5):1139-1148, 1989

18. Saul JP. Rea RF. Eckberg DL. **Berger RD**. Cohen RJ. Heart rate and muscle sympathetic nerve variability during reflex changes of autonomic activity. American Journal of Physiology. 258(3 Pt 2):H713-H721, 1990

19. Freeman R. Saul JP. Roberts MS. **Berger RD**. Broadbridge C. Cohen RJ. Spectral analysis of heart rate in diabetic autonomic neuropathy. A comparison with standard tests of autonomic function. Archives of Neurology. 48(2):185-190, 1991

20. Saul JP. **Berger RD**. Albrecht P. Stein SP. Chen MH. Cohen RJ. Transfer function analysis of the circulation: unique insights into cardiovascular regulation. American Journal of Physiology. 261(4 Pt 2):H1231-H1245, 1991

21. Yeragani VK. **Berger R**. Pohl R. Srinivasan K. Balon R. Ramesh C. Weinberg P. Berchou R. Effects of yohimbine on heart rate variability in panic disorder patients and normal controls: a study of power spectral analysis of heart rate. Journal of Cardiovascular Pharmacology. 20(4):609-618, 1992

22. **Berger RD**. Rosenbaum DS. Cohen RJ. Is the power spectrum of the QRS complex related to a fractal His-Purkinje system? American Journal of Cardiology. 71(5):430-433, 1993

23. Yeragani VK. Pohl R. **Berger R**. Balon R. Ramesh C. Glitz D. Srinivasan K. Weinberg P. Decreased heart rate variability in panic disorder patients: a study of power-spectral analysis of heart rate. Psychiatry Research. 46(1):89-103, 1993

24. Yana K. Saul JP. **Berger RD**. Perrott MH. Cohen RJ. A time domain approach for the fluctuation analysis of heart rate related to instantaneous lung volume. IEEE Transactions on Biomedical Engineering. 40(1):74-81, 1993

25. Yeragani VK. Pohl R. **Berger R**. Balon R. Srinivasan K. Relationship between age and heart rate variability in supine and standing postures: a study of spectral analysis of heart rate. Pediatric Cardiology. 15(1):14-20, 1994

26. Yeragani VK. Srinivasan K. Pohl R. **Berger R**. Balon R. Ramesh C. Effects of nortriptyline on heart rate variability in panic disorder patients: a preliminary study using power spectral analysis of heart rate. Neuropsychobiology. 29(1):1-7, 1994.

27. Tomaselli GF. Beuckelmann DJ. Calkins HG. **Berger RD**. Kessler PD. Lawrence JH. Kass D. Feldman AM. Marban E. Sudden cardiac death in heart failure. The role of abnormal repolarization. Circulation. 90(5):2534-2539, 1994

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29. **Berger RD**. Wolff MR. Anderson JH. Kass DA. Role of atrial contraction in diastolic pressure elevation induced by rapid pacing of hypertrophied canine ventricle. Circulation Research. 77(1):163-173, 1995

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31. Dinerman JL. **Berger RD**. Calkins H. Temperature monitoring during radiofrequency ablation. J. Cardiovasc. Electrophysiol. 7(2):163-173, 1996

32. Calkins H. Prystowsky E. **Berger RD**. Saul JP. Klein LS. Liem LB. Huang SK. Gillette P. Yong P. Carlson M. Recurrence of conduction following radiofrequency catheter ablation procedures: relationship to ablation target and electrode temperature. The Atakr Multicenter Investigators Group. Journal of Cardiovascular Electrophysiology. 7(8):704-712, 1996

33. **Berger RD**. Nsah E. Calkins H. Signal-averaged intracardiac electrograms: a new method to detect Kent potentials. J. Cardiovasc. Electrophysiol. 8(2):155-160, 1997

34. Yeragani VK. **Berger R**. Songer DA. Yeragani S. Power spectrum of the QRS Complex in patients with panic disorder and normal controls. Psychiatry Research. 66(2-3):167-174, 1997

35. Dinerman JL. **Berger R**. Haigney MC. Lawrence JH. Tomaselli GF. Calkins H. Dispersion of ventricular activation and refractoriness in patients with idiopathic dilated cardiomyopathy. American Journal of Cardiology. 79(7):970-974, 1997

36. Haigney MC. **Berger R**. Schulman S. Gerstenblith G. Tunin C. Silver B. Silverman HS. Tomaselli G. Calkins H. Tissue magnesium levels and the arrhythmic substrate in humans. J. Cardiovasc. Electrophysiol. 8(9):980-986, 1997

37. **Berger RD**. Kasper EK. Baughman KL. Marban E. Calkins H. Tomaselli GF. Beat-to-beat QT interval variability: novel evidence for repolarization lability in ischemic and nonischemic dilated cardiomyopathy. Circulation. 96(5):1557-1565, 1997

38. Ramza BM. Rosenthal L. Hui R. Nsah E. Savader S. Lawrence JH. Tomaselli G. **Berger R**. Brinker J. Calkins H. Safety and effectiveness of placement of pacemaker and defibrillator leads in the axillary vein guided by contrast venography. American Journal of Cardiology. 80(7):892-896, 1997

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46. Donahue JK. Orias D. **Berger RD**. Tomaselli GF. Lawrence JH. Calkins H. Comparison of adenosine effects on atrioventricular node reentry and atrioventricular reciprocating tachycardias. Clinical Cardiology. 21(10):743-745, 1998

47. Nsah E. **Berger R**. Rosenthal L. Hui R. Ramza B. Jumrussirikul P. Lawrence JH. Tomaselli G. Kass D. Calkins H. Relation between impedance and electrode temperature during radiofrequency catheter ablation of accessory pathways and atrioventricular nodal reentrant tachycardia. American Heart Journal. 136(5):844-851, 1998

48. Kass DA. Chen CH. Curry C. Talbot M. **Berger R**. Fetics B. Nevo E. Improved left ventricular mechanics from acute VDD pacing in patients with dilated cardiomyopathy and ventricular conduction delay. Circulation. 99(12):1567-1573, 1999

49. Kass DA. Chen CH. Talbot MW. Rochitte CE. Lima JA. **Berger RD**. Calkins H. Ventricular pacing with premature excitation for treatment of hypertensive-cardiac hypertrophy with cavity-obliteration. Circulation. 100(8):807-812, 1999

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51. Jumrussirikul P. Atiga WL. Lardo AC. **Berger RD**. Halperin H. Hutchins GM. Calkins H. Prospective comparison of lesions created using a multipolar microcatheter ablation system with those created using a pullback approach with standard radiofrequency ablation in the canine atrium. Pacing & Clinical Electrophysiology. 23(2):203-213, 2000

52. Atiga WL. Fananapazir L. McAreavey D. Calkins H. **Berger RD**. Temporal repolarization lability in hypertrophic cardiomyopathy caused by beta-myosin heavy-chain gene mutations. Circulation. 101(11):1237-1242, 2000

53. Nelson GS. Curry CW. Wyman BT. Declerck J. Talbot M. **Berger RD**. McVeigh ER. Kass DA. Predictors of systolic augmentation from left ventricular preexcitation in patients with dilated cardiomyopathy and intraventricular conduction delay. Circulation. 101(23):2703-2709, 2000

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56. Lardo AC. McVeigh ER. Jumrussirikul P. **Berger RD**. Calkins H. Lima J. Halperin HR. Visualization and temporal/spatial characterization of cardiac radiofrequency ablation lesions using magnetic resonance imaging. Circulation 102(6):698-705, 2000

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58. Nelson GS. **Berger RD**. Fetics BJ. Talbot M. Spinelli JC. Hare JM. Kass DA. Left ventricular or biventricular pacing improves cardiac function at diminished energy cost in patients with dilated cardiomyopathy and left bundle-branch block. Circulation 102(25):3053-3059, 2000

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61. Fried NM. Tsitlik A. Rent KC. **Berger RD**. Lardo AC. Calkins H. Halperin HR. Laser ablation of the pulmonary veins by using a fiberoptic balloon catheter: implications for treatment of paroxysmal atrial fibrillation. Lasers Surg. Med. 28:197-203, 2001

62. Leng CT. **Berger RD**. Calkins H. Lardo AC. Paradis NA. Halperin HR. Electrical induction of ventricular fibrillation for resuscitation from postcountershock pulseless and asystolic cardiac arrests. Circulation 104:723-728, 2001

63. Leng CT. Crosson JE. Calkins H. **Berger RD**. Novel lead configuration for defibrillator implantation in patients with congenital cardiovascular abnormalities and mechanical prosthetic tricuspid valves. PACE 24:1291-1292, 2001

64. Cappola TP. Kass DA. Nelson GS. **Berger RD**. Rosas GO. Kobeissi ZA. Marban E. Hare JM. Allopurinol improves myocardial efficiency in patients with idiopathic dilated cardiomyopathy. Circulation 104:2407-2411, 2001

65. Ince C. Schulman SP. Quigley JF. **Berger RD**. Kolasa M. Ferguson R. Silver B. Haigney MCP. Usefulness of magnesium sulfate in stabilizing cardiac repolarization in heart failure secondary to ischemic cardiomyopathy. Am. J. Cardiol. 88:224-229, 2001

66. Murabayashi T. Fetics B. Kass D. Nevo E. Gramatikov B. **Berger RD**. Beat-to-beat QT interval variability associated with acute myocardial ischemia. J. Electrocardiology 35:19-25, 2002

67. Fitzgibbon E. **Berger R**. Tsitlik J. Halperin HR. Determination of the noise source in the electrocardiogram during cardiopulmonary resuscitation. Crit. Care Med. 30[Suppl.]:S148-S153, 2002

68. DiCarlo SE. Collins HL. Rodenbaugh DW. Smitha MR. **Berger RD**. Yeragani VK. Daily exercise reduces measures of heart rate and blood pressure variability in hypertensive rats. Clin. Exp. Hypertens. 24:221-234, 2002

69. Bilchick KC. Fetics B. Djoukeng R. Fisher SG. Fletcher RD. Singh SN. Nevo E. **Berger RD**. The prognostic value of heart rate variability in congestive heart failure: A substudy of the veteran affairs' survival trial of antiarrhythmic therapy in congestive heart failure. Am. J. Cardiol. 90:24-28, 2002

70. Wu RC. Brinker JA. Yuh DD. **Berger RD**. Calkins HG. Circular mapping catheter entrapment in the mitral valve apparatus: a previously unrecognized complication of focal atrial fibrillation ablation. J. Cardiovasc. Electrophysiol. 13:819-821, 2002

71. Atiga WL. Worley SJ. Hummel J. **Berger RD**. Gohn DC. Mandalakas NJ. Kalbfleisch S. Halperin H. Donahue K. Tomaselli G. Calkins H. Daoud E. Prospective randomized comparison of cooled radiofrequency versus standard radiofrequency energy for ablation of typical atrial flutter. PACE 25:1172-1178, 2002

72. Lickfett L. Kato R. **Berger R**. Halperin H. Calkins H. Magnetic resonance angiography and virtual endoscopic view of a left common pulmonary vein trunk. J. Cardiovasc. Electrophysiol. 13:955, 2002

73. Bradley DJ. Bradley EA. Baughman KL. **Berger RD**. Calkins H. Goodman SN. Kass DA. Powe NR. Cardiac resynchronization and death from progressive heart failure. JAMA 289:730-740, 2003

74. Nasir K. Rutberg J. Tandri H. **Berger R**. Tomaselli G. Calkins H. Utility of SAECG in Arrhythmogenic right ventricle dysplasia. Ann. Noninvasive Electrocardiol. 8:112-120, 2003

75. Nasir K. Bomma C. Khan FA. Tandri H. Tichnell C. James C. Rutberg J. **Berger R**. Calkins H. Utility of a combined signal-averaged electrocardiogram and QT dispersion algorithm in identifying arrhythmogenic right ventricular dysplasia in patients with tachycardia of right ventricular origin. Am J Cardiol. 92:105-109, 2003

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79. Nasir K. Tandri H. Rutberg J. Tichnell C. Spevak P. Crossan J. Baughman KL. Kasper EK. Tomaselli GF. **Berger R**. Calkins H. Filtered QRS duration on signal-averaged electrocardiography predicts inducibility of ventricular tachycardia in arrhythmogenic right ventricle dysplasia. PACE 26:1955-60, 2003

80. Vasamreddy CR. Jayam V. Lickfett L. Nasir K. Bradley DJ. Eldadah Z. Dickfeld T. Donahue K. Halperin HR. **Berger R**. Calkins H. Technique and results of pulmonary vein angiography in patients undergoing catheter ablation of atrial fibrillation. J. Cardiovasc. Electrophysiol. 15:21-26, 2004

81. Roguin A. Bomma CS. Nasir K. Tandri H. Tichnell C. James C. Rutberg J. Crosson J. Spevak PJ. **Berger RD**. Halperin HR. Calkins H. Implantable cardioverter-defibrillators in patients with arrhythmogenic right ventricular dysplasia/cardiomyopathy. JACC 43:1843-52, 2004

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83. Jayam VK. Vasamreddy C. **Berger R**. Calkins H. Electrical disconnection of the superior vena cava from the right atrium. J. Cardiovasc. Electrophysiol. 15:614, 2004

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85. Yeragani VK. Adiga S. Desai N. **Berger RD**. Beat-to-beat QT interval variability in atrial fibrillation with and without congestive cardiac failure. Ann. Noninvasive Electrocardiol. 9:304-305, 2004

86. Roguin A. Zviman MM. Meininger GR. Rodrigues ER. Dickfeld TM. Bluemke DA. Lardo A. **Berger RD**. Calkins H. Halperin HR. Modern pacemaker and implantable cardioverter/defibrillator systems can be magnetic resonance imaging safe. In vitro and in vivo assessment of safety and function at 1.5T. Circulation 110:475-482, 2004

87. Henrikson CA. Singh NK. Bolt JF. **Berger RD**. "Shrink-wrapped" permanent pacemaker. Circulation 110:e79, 2004

88. Desai N, Raghunandan DS, Mallavarapu M, **Berger RD**, Yeragani VK. Beat-to-beat heart rate and QT variability in patients with congestive cardiac failure: blunted response to orthostatic challenge. Ann Noninvasive Electrocardiol. 9: 323-329, 2004

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91. Lickfett L. Mahadevappa M. Vasamreddy C. Bradley D. Jayam V. Eldadah Z. Dickfeld T. Kearney D. Dalal D. Luderitz B. **Berger R**. Calkins H. Radiation exposure during catheter ablation of atrial fibrillation. Circulation 110:3003-3010, 2004

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96. Raghunandan DS, Desai N, Mallavarapu M, **Berger RD**, Yeragani VK. Increased beat-to-beat QT variability in patients with congestive cardiac failure. Indian Heart J. 57:138-142, 2005

97. Yeragani VK, **Berger R**, Pohl R, Balon R. Effect of age on diurnal changes of 24-hour QT interval variability. Pediatr Cardiol. 26:39-44, 2005

98. Nazarian S. Knight BP. Dickfeld TL. Zviman MM. Jayanti VB. Amundson D. Hanlin J. Castleberry J. Smith MF. Blankenship L. Halperin HR. Ferguson TB. **Berger RD**. Direct visualization of coronary sinus ostium and branches with a flexible steerable fiberoptic infrared endoscope. Heart Rhythm 2:844-848, 2005

99. Dong J. Vasamreddy CR. Jayam V. Dalal D. Dickfeld T. Eldadah Z. Meininger G. Halperin HR. **Berger R**. Bluemke DA. Calkins H. Incidence and predictors of pulmonary vein stenosis following catheter ablation of atrial fibrillation using the anatomic pulmonary vein ablation approach: results from paired magnetic resonance imaging. J. Cardiovasc. Electrophysiol. 16:845-852, 2005

100. Jayam VK. Dong J. Vasamreddy CR. Lickfett L. Kato R. Dickfeld T. Eldadah Z. Dalal D. Blumke DA. **Berger R**. Halperin HR. Calkins H. Atrial volume reduction following catheter ablation of atrial fibrillation and relation to reduction in pulmonary vein size: an evaluation using magnetic resonance angiography. J. Interv. Card. Electrophysiol. 13:107-114, 2005

101. Lickfett L. Calkins H. Nasir K. Dickfeld T. Eldadah Z. Jayam V. Leng C. Tomaselli G. Donahue K. Halperin H. Luderitz B. **Berger R**. Clinical prediction of cavotricuspid isthmus dependence in patients referred for catheter ablation of “typical” atrial flutter. J. Cardiovasc. Electrophysiol. 16:969-973, 2005

102. Jayam V. Zviman M. Jayanti V. Roguin A. Halperin H. **Berger RD**. Internal defibrillation with minimal skeletal muscle activation: A new paradigm towards painless defibrillation. Heart Rhythm 2:1108-1113, 2005

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Research Grant Participation

Active:

Past:

1995-1999 SCOR in Sudden Cardiac Death
Sponsor: NIH, NHLBI P50 HL52307
Total direct: $5,849,141
P.I.: Eduardo Marban
Role: Investigator Effort: 20%

1995-1999 Cardiac Autonomic Consequences of Hemisphere Stroke
Sponsor: NIH, NHLBI R01 NS33770
P.I.: Stephen Oppenheimer
Role: Consultant Effort: 2%

1996-2001 Repolarization Variability and Sudden Cardiac Death
Sponsor: NIH, NHLBI R29 HL5458 (FIRST Award)
Total direct: $350,000
Role: Principal Investigator Effort: 25%

1996-1998 Mechanisms of Repolarization Variability
Sponsor: Johns Hopkins University School of Medicine
Clinician Scientist Award
Total direct: $65,000
Role: Principal Investigator Effort: 25%

1998-1999 Development and Clinical Test of QT Variability Monitor
Sponsor: NIH, NHLBI R43 HL59717 (SBIR Phase I)
P.I.: Erez Nevo
Role: Consultant Effort: 2%

1999-2001 Development and Clinical Test of QT Variability Monitor
Sponsor: NIH, NHLBI R44 HL61903 (SBIR Phase II)
P.I.: Erez Nevo
Role: Consultant Effort: 2%

1999-2004 Magnetic Resonance Guided Electrophysiologic Intervention
Sponsor: NIH, NHLBI R01 HL64795
P.I.: Henry Halperin
Role: Co-investigator Effort: 10%

2001-2004 Painless Internal Cardiac Defibrillation
Frank T. McClure Fellowship
Sponsor: Johns Hopkins Applied Physics Laboratory
Total direct: $450,000
Role: Principal Investigator Effort: 25%

2000-2004 SCOR in Sudden Cardiac Death
Sponsor: NIH, NHLBI P50 HL52307 (Competitive renewal)
Total direct: $6,682,521
P.I.: Eduardo Marban
Role: Project Leader Effort: 25%
Project: Temporal Spatial Variability of Cardiac Repolarization in Humans
Project: Total direct: $770,166

2002-2006 Physiology and Technology for Painless Internal Cardiac Defibrillation
A.H.A. Established Investigator Grant 0245017N
Sponsor: American Heart Association

Total direct: $300,000
Role: Principal Investigator Effort: 25%

2003-2006 Clinical Cardiac Electrophysiology Training Grant
Sponsor: Heart Rhythm Society
Total direct: $150,000
Role: Principal Investigator Effort: 5%

2003-2007 D.W. Reynolds Cardiovascular Clinical Research Center
Sponsor: D.W. Reynolds Foundation
Total direct: $5,000,000
P.I.: Eduardo Marban
Role: Investigator Effort: 10%

2004-2009 Magnetic Resonance Guided Electrophysiologic Intervention
Sponsor: NIH, NHLBI R01 HL64795 (Competitive renewal)
Total direct: $2,815,237
P.I.: Henry Halperin
Role: Co-investigator Effort: 10%

2004-2009 Pathobiology of Cardiac Dyssynchrony & Resynchronization
Sponsor: NIH, NHLBI PO1 HL077180
P.I.: David Kass
Role: Co-investigator Effort: 10%

2010-2011 Method and Device to Terminate Cardiac Arrhythmias
Sponsor: Maryland Technology Development Corporation (TEDCO)
Total direct: $50,000
P.I.: Ronald Berger Effort: 5%

2010-2012 Termination of Cardiac Arrhythmia by High Frequency Electric Field
Sponsor: NIH, NHLBI R21HL104338
Total direct: $451,000
P.I.: Leslie Tung, Ronald Berger
Role: Co-PI Effort: 5%

2009-2014 Improved Targeting and Assessment of Electrophysiology Intervention
Sponsor: NIH, NHLBI R01HL094610
Total direct: $986,874
P.I.: Henry Halperin
Role: Co-investigator Effort: 5%

2012-2014 Novel Implantable Defibrillator Using High Frequency Alternating Current
Sponsor: Wallace H. Coulter Foundation
Total direct: $116,812
P.I.: Ronald Berger, Leslie Tung
Role: Co-PI Effort: 5%

2015 – 2017 Painless Defibrillation
Sponsor: NIH/NHLBI, 1R44 HL127771
Total direct: $997,517
PI: Howard Levin (Administrative PI)
Role: Scientific PI Effort: 15%

2014 – 2019	Improved Targeting and Assessment of Electrophysiology Intervention	
	Sponsor: NIH/NHLBI,	2R01HL094610
	Total direct: $986,807	
	PI: Henry Halperin	
	Role: Co-investigator	Effort: 5%
2018 – 2021	Painless Defibrillation	
	Sponsor: NIH/NHLBI	2R44HL127771
	Total direct: $2,970,442	
	PI: Howard Levin	
	Role: Clinical PI	Effort: 15%
2018 – 2022	INFINITY Trial	
	Sponsor: NIH/NHLBI	R01HL142893
	Total direct: $187,969	
	Role: Investigator	Effort: 5%

Teaching Activities

Classroom Instruction

1993-curr	Lecturer, “Electrocardiography,” Human Pathophysiology, Cardiovascular Section, Johns Hopkins University School of Medicine
1993-2010	Group Leader, Human Pathophysiology, Cardiovascular Section, Johns Hopkins University School of Medicine
2002-2004	Director, “Skeletal Muscle Physiology Lab,” Physiologic Foundations, Biomedical Engineering Dept., Johns Hopkins University School of Engineering

Clinical Instruction

1993-curr	Attending, Clinical Cardiac Electrophysiology Service
1994-2000	Preceptor, Clinical Skills
1994-curr	Lecturer, Cardiology Fellows Core Curriculum Conference Series
2001-2005	Coordinator and Lecturer, Fellows ECG Interpretation Conference
2005-curr	Lecturer, Fellows ECG Interpretation Conference
2003-curr	Director, Clinical Cardiac Electrophysiology Training Program

Continuing Medical Education Lectures

1994	“Heart Rate Variability – Frequency Domain Techniques” Course on Heart Rate Variability, Boston, MA
1994	“Systems Analysis – an Overview” Course on Heart Rate Variability, Boston, MA
1995	“Evaluation and Management of Syncope” Johns Hopkins Topics in Cardiology Course

1996 “Current Status of Implantable Defibrillators”
Johns Hopkins Topics in Cardiology Course

1997 “Management of Atrial Fibrillation”
Physician Update, Saginaw, MI

1998 “New Tests to Identify Patients at High Risk for Sudden Death”
Johns Hopkins Topics in Cardiology Course

1998 “Current Management of Ventricular Arrhythmias”
Johns Hopkins Conjoint Clinic

1999 “Current Management of VT: The End of Drug Treatment?”
Johns Hopkins Topics in Cardiology Course

1999 “Sinus Node Dysfunction”
WebMD: Meet the Professor

2000 “How to Use Implantable Defibrillators”
Johns Hopkins Topics in Cardiology Course

2001 “Catheter Ablation of Ventricular Tachycardia”
Johns Hopkins Topics in Cardiology Course

2001 “Arrhythmias”
Johns Hopkins Internal Medicine Board Review Course

2002 “Arrhythmias”
Johns Hopkins Internal Medicine Board Review Course

2003 “Biventricular Pacing for Cardiomyopathy”
Johns Hopkins Topics in Cardiology Course

2004 “Electrophysiology Rounds”
Johns Hopkins Topics in Cardiology Course

2004 Co-director, Johns Hopkins course: “Echocardiography: The Smart Route to Cardiac Resynchronization,” Baltimore, MD

2004 “Electrophysiology of Heart Failure”
Johns Hopkins course on Echocardiography for CRT

2004 “Overview of Devices and Implantation Technique”
Johns Hopkins course on Echocardiography for CRT

2005 “ICD Update 2005: Current Indications and Clinical Role”
Johns Hopkins Cardiovascular Topics Course

2006 “How Should Doctors Respond to Device Recalls”
Johns Hopkins Cardiovascular Topics Course

2006 Co-director, Johns Hopkins course: “Echocardiography in Resynchronization,” Baltimore, MD

2006 “Electrophysiology of Heart Failure – Overview of Devices and Techniques”
Johns Hopkins course on Echocardiography in Resynchronization

2006 “Clinical Benefits of Resynchronization”
Johns Hopkins course on Echocardiography in Resynchronization

2007 “When Arrhythmias Can Teach Lessons about Function”

Johns Hopkins Cardiovascular Topics Course

2008 "When Implanted Devices Do Bad Things"
Johns Hopkins Cardiovascular Topics Course

2008 "What Clinical Trials Tell Us About Resynchronization"
Johns Hopkins course on Echocardiography

2009 "Risk Stratification of Potential ICD Patients"
Johns Hopkins Cardiovascular Topics Course

2010 "How to Approach the Patient with Ventricular Tachycardia"
Johns Hopkins Cardiovascular Topics Course

2010 Course Co-director, "Contemporary, Challenging, and Controversial Issues in Electrophysiology," New York, NY

2010 "CRT Lead Strategies, Options, Alternatives, Ongoing Trials" at "Contemporary, Challenging, and Controversial Issues in Electrophysiology," New York, NY

2010 Moderator, "Expanding Treatment Options for Treating Atrial Fibrillation"
CardioCare Live, Johns Hopkins University

2011 "What do Clinical Trials Tell Us about CRT?"
Johns Hopkins Cardiovascular Topics Course

2011 Course Co-director, "2nd Annual Contemporary, Challenging, and Controversial Issues in Electrophysiology," New York, NY

2011 "Pearls and pitfalls of entrainment" at "2nd Annual Contemporary, Challenging, and Controversial Issues in Electrophysiology," New York, NY

2012 "Taking the History from Patients with Arrhythmias"
Johns Hopkins Cardiovascular Topics Course

2012 "How to Prevent Inappropriate ICD Shocks"
Johns Hopkins Arrhythmia Symposium

2012 "Stepwise Approach to Ablation of SVT"
Johns Hopkins Arrhythmia Symposium

2012 Course Co-director, "3rd Annual Contemporary, Challenging, and Controversial Issues in Electrophysiology," New York, NY

2012 "Multipolar LV Leads" at "3rd Annual Contemporary, Challenging, and Controversial Issues in Electrophysiology," New York, NY

2013 "Fixing Funny Flutters"
Johns Hopkins Cardiovascular Topics Course

2013 Course Co-director, "4th Annual Contemporary, Challenging, and Controversial Issues in Electrophysiology," New York, NY

2013 "How should we monitor for atrial fibrillation" at "4th Annual Contemporary, Challenging, and Controversial Issues in Electrophysiology," New York, NY

2014 "A Logical Approach to PVCs"
Johns Hopkins Cardiovascular Topics Course

2014 "New Devices for Electrophysiology"
Third Annual Johns Hopkins Arrhythmia Symposium

2014 Course Co-director, "5th Annual Contemporary, Challenging, and Controversial Issues in Electrophysiology," New York, NY

2014 "The S-ICD: Not Quite Ready Yet" Debate at "5th Annual Contemporary, Challenging, and Controversial Issues in Electrophysiology," New York, NY

2015 "New Technology in the Electrophysiology Lab"
Johns Hopkins Cardiovascular Topics Course

2015 "Prophylactic VT ablation should not be routinely considered prior to ICD implantation"
Debate at "6th Annual Contemporary, Challenging, and Controversial Issues in electrophysiology," New York, NY

2016 "New Focus on the Left Atrial Appendage"
Johns Hopkins Cardiovascular Topics Course

2017 "Subcutaneous ICD vs Transvenous ICD: What is Best for Your Patient?"
Cardiology Philadelphia Program

2017 "Left Atrial Appendage Closure Devices: 2017 State of the Art"
Cardiology Philadelphia Program

Clinical Cardiac Electrophysiology Fellows Trained

Dates	Fellow	Current Position
1993-1994	Mark C.P. Haigney, M.D.	Professor of Medicine Uniformed Services Medical School
1994-1995	Jay Dinerman, M.D.	Clinical electrophysiologist Huntsville, AL
1994-1996	David Orias, M.D.	Clinical electrophysiologist Santa Barbara, CA
1995-1997	Richard Hui, M.D., Ph.D.	Clinical electrophysiologist St. Louis, MO
1995-1997	Lawrence Rosenthal, M.D., Ph.D.	Associate Professor of Medicine University of Massachusetts
1996-1997	Kaikobad Irani, M.D.	Professor of Medicine University of Iowa
1996-1998	Brian Ramza, M.D., Ph.D.	Clinical electrophysiologist Tulsa, OK
1996-1998	Emmanuel Nsah, M.D.	Clinical electrophysiologist Salisbury, MD
1997-1999	Eric Taylor, M.D.	Clinical electrophysiologist McAllen, TX
1997-1999	J. Kevin Donahue, M.D.	Professor of Medicine Univ of Massachusetts
1997-1999	Walter Atiga, M.D.	Clinical electrophysiologist

		Fairfax, VA
1998-2000	Pitayadet Jumrussirikul, M.D.	Clinical electrophysiologist Grand Junction, CO
1998-2000	Sunny Po, M.D., Ph.D.	Professor of Medicine University of Oklahoma
1999-2001	Charles Leng, M.D.	Clinical electrophysiologist Philadelphia, PA
2000-2002	Piamsook Angkeow, M.D.	Clinical electrophysiologist Wilmington, DE
2000-2002	George Juang, M.D.	Clinical Asst. Professor of Medicine Stony Brook Medical Center
2000-2002	Richard Wu, M.D.	Professor of Medicine University of Texas, Southwestern
2001-2003	David Bradley, M.D.	Assistant Professor of Medicine Mayo Clinic
2001-2003	Lars Lickfett, M.D.	Academic Electrophysiologist Bonn, Germany
2002-2004	Timm Dickfeld, M.D., Ph.D.	Associate Professor of Medicine University of Maryland
2002-2004	Zayd Eldadah, M.D.	Clinical Electrophysiologist Washington Hospital Center
2002-2004	Vinod Jayam, M.D.	Clinical electrophysiologist Manhasset, NY
2003-2005	Glenn Meininger, M.D.	Clinical electrophysiologist Baltimore, MD
2004-2005	Charles Henrikson, M.D.	Associate Professor of Medicine University of Oregon
2004-2005	Sameh Lamiy, M.D.	Clinical electrophysiologist Indianapolis, IN
2004-2006	David Spragg, M.D.	Associate Professor of Medicine Johns Hopkins University
2004-2006	Alan Cheng, M.D.	Associate Professor of Medicine Johns Hopkins University
2005-2007	Kenneth Bilchick, M.D.	Associate Professor of Medicine University of Virginia
2005-2007	Saman Nazarian, M.D., PhD	Professor of Medicine Univ. of Pennsylvania
2005-2008	Harikrishna Tandri, M.D.	Professor of Medicine Johns Hopkins University
2006-2007	Ibrahim Almasry, M.D.	Academic electrophysiologist SUNY, Stony Brook

2006-2008	Rajat Deo, M.D.	Assistant Professor of Medicine University of Pennsylvania
2006-2008	Manish Shah, M.D.	Clinical electrophysiologist Washington Hospital Center
2007-2009	Molly Sachdev, M.D.	Academic electrophysiologist Ohio State University
2007-2009	Robert Helm, M.D.	Assistant Professor of Medicine Boston University
2007-2009	Anastasios Saliaris, M.D.	Assistant Professor of Medicine University of Maryland
2008-2010	Aravindan Kolandaivelu, M.D.	Assistant Professor of Medicine Johns Hopkins University
2008-2010	Ravi Ranjan, M.D.	Assistant Professor of Medicine University of Utah
2008-2010	Christine Tompkins, M.D.	Assistant Professor of Medicine University of Colorado
2009-2011	Brad Sutton, M.D.	Assistant Professor of Medicine University of Louisville, KY
2009-2011	Luciano Amado, M.D.	Assistant Professor of Medicine University of Minnesota
2009-2011	Fawaz Alhumaid, M.D.	Clinical electrophysiologist Portland, OR
2010-2012	Hiroshi Ashikaga, M.D.	Associate Professor of Medicine Johns Hopkins University
2010-2012	Sandeep Bansal, M.D.	Clinical electrophysiologist Lancaster, PA
2010-2012	David Edwards, M.D.	Clinical Electrophysiologist Dallas, TX
2010-2012	Matthew Needleman, M.D.	Staff Electrophysiologist U.S. Navy, Bethesda, MD
2011-2013	Sang Ji, M.D.	Clinical Electrophysiologist Los Angeles, CA
2011-2013	John Catanzaro, M.D.	Assistant Professor Medicine University of Florida
2011-2013	Binu Philips, M.D.	Assistant Professor of Medicine Brown University
2012-2014	Sameer Jamal, M.D.	Clinical Electrophysiologist Hackensack, NJ
2012-2014	Khalil Kanjwal, M.D.	Clinical Electrophysiologist Michigan Cardiovascular Institute
2012-2014	Takeki Suzuki, M.D.	Assistant Professor of Medicine

		University of Mississippi
2013-2015	Deeptankar Demazumder, M.D., Ph.D.	Assistant Professor of Medicine University of Cincinnati
2013-2015	Grant Chow, M.D.	Clinical electriphysiologist Zanesville, OH
2013-2015	Tanyanan Tanawuttiwat, M.D.	Assistant Professor of Medicine University of Mississippi
2014-2016	Andreas Barth, M.D.	Assistant Professor of Medicine Johns Hopkins University
2014-2016	Omair Yousuf, M.D.	Clinical Electrophysiologist Kansas City, MO
2014-2016	Haseeb Jafri, M.D.	Clinical Electrophysiologist Kettering, OH
2015-2017	Aditya Bhonsale, M.D.	Assistant Professor of Medicine University of Pittsburgh
2015-2017	Jonathan Chrispin, M.D.	Assistant Professor of Medicine Johns Hopkins University
2015-2017	Cao Thach Tran, M.D., Ph.D.	Assistant Professor of Medicine Brown University
2016-2018	Jared Miller, M.D.	Assistant Professor of Medicine Oregon Health & Science University
2016-2018	Satish Misra, M.D.	Clinical Electrophysiologist Sanger Heart & Vascular Center, Charlotte, NC
2016-2018	Zack Hollis, M.D.	Assistant Professor of Medicine Winchester Hopsital, Winchester, VA
2017-2019	Oliver Monfredi, MBChB, PhD	Assistant Professor of Medicine University of Virginia
2017-2019	Kaustubha Patil, M.D.	Assistant Professor of Medicine Northwestern University
2017-2019	Daniel Carlson, M.D.	Staff Electrophysiologist, USUHS
2017-2019	Olurotimi Mesubi, MBBS, MPH	Assistant Professor of Medicine Johns Hopkins University
2018-2020	Mohammadali Habibi, M.D.	Staff Electrophysiologist, Valley Health, NJ
2018-2020	Sunjeet S. Sidhu M.D.	Staff Electrophysiologist, Medstar, Baltimore, MD
2018-2020	Ali Keramati, M.D.	Staff Electrophysiologist,

		Lankenau Heart Group, PA
2019-2021	Klitos Konstantinidis, MD	Assistant Professor of Medicine Johns Hopkins University
2019-2021	Konstantinos Aronis, MD	Assistant Professor of Medicine University of Pittsburgh
2019-2021	David Okada, MD	Staff Electrophysiologist, Tulsa, OK
2020-2022	Eunice Yang, MD	Staff Electrophysiologist Inova Heart & Vascular Institute
2020-2022	Richard Jones, MD	Staff Electrophysiologist Medstar, Baltimore, MD
2020-2022	Dominik Beer, DO	Staff Electrophysiologist Geisinger Health System

Research Fellows Mentored

1994-1995	Jay Dinerman, M.D.	Clinical electrophysiologist Huntsville, AL
1996-1997	Emmanuel Nsah, M.D.	Clinical electrophysiologist Salisbury, MD
1996-1997	Walter Atiga, M.D.	Clinical electrophysiologist Fairfax, VA
1996-1998	Pitayadet Jumrussirikul, M.D.	Clinical electrophysiologist Grand Junction, CO
1999-2002	Kenneth Bilchick, M.D.	Academic electrophysiologist University of Virginia
2000-2002	Piamsook Angkeow, M.D.	Clinical electrophysiologist Wilmington, DE
2001-2002	Taizo Murabayashi, Ph.D.	Academic cardiologist Tokyo, Japan
2002-2003	Vinod Jayam, M.D.	Clinical electrophysiologist Manhasset, NY
2004-2007	Saman Nazarian, M.D., PhD.	Professor of Medicine Univ. of Pennsylvania
2004-2006	Venku Jayanti, Ph.D.	Engineer, NASA
2007-2009	Larisa Tereshchenko, M.D., Ph.D.	Assistant Professor University of Oregon
2009-2011	Fariba Ariaei, Ph.D.	
2014-2017	David Hunter, Ph.D.	Research Associate

Thesis Committees

1993 William Martin, M.S., Biomedical Engineering, Johns Hopkins University
1995 Gilead Kedem, M.S., Biomedical Engineering, Johns Hopkins University
1995 Matthew Fishler, Ph.D., Biomedical Engineering, Johns Hopkins University
1999 Eric Sobie, Ph.D., Biomedical Engineering, Johns Hopkins University
2000 Vinod Sharma, Ph.D., Biomedical Engineering, Johns Hopkins University
2002 Yelena Nabutovsky, M.S., Biomedical Engineering, Johns Hopkins University
2008 Rajesh Sekar, Ph.D., Biomedical Engineering, Johns Hopkins University
2008 Xiao Jie, Ph.D., Biomedical Engineering, Johns Hopkins University
2008 Josh Cysyk, Ph.D., Biomedical Engineering, Johns Hopkins University
2012 Seth Weinberg, Ph.D., Biomedical Engineering, Johns Hopkins University
2013 Jason Bayer, Ph.D., Biomedical Engineering, Johns Hopkins University
2017 David Hunter, Ph.D., Biomedical Engineering, Johns Hopkins University

Oral Examination Committees

1999 Katherine Lucas, School of Public Health, Johns Hopkins University
2005 Josh Cysyk, Biomedical Engineering, Johns Hopkins University
2008 Xiao Jie, Biomedical Engineering, Johns Hopkins University
2008 Jason Bayer, Biomedical Engineering, Johns Hopkins University
2008 Brock Tice, Biomedical Engineering, Johns Hopkins University
2009 Seth Weinberg, Biomedical Engineering, Johns Hopkins University
2009 Susan Edmonds, Biomedical Engineering, Johns Hopkins University
2013 David Hunter, Biomedical Engineering, Johns Hopkins University
2015 Sohail Zahid, Biomedical Engineering, Johns Hopkins University

Training Grant Participation

2003-2006 Principal Investigator, NASPE-Heart Rhythm Society
Clinical Cardiac Electrophysiology Training Grant

Editorial Board Appointments

2001-2009 Circulation Research
2004-curr Journal of Cardiovascular Electrophysiology
2007-curr Heart Rhythm
2010-2015 Journal of Innovations in Cardiac Rhythm Management
2012-curr Journal of Interventional Cardiac Electrophysiology
2014-curr Pacing and Clinical Electrophysiology
2017-curr Circulation Arrhythmia & Electrophysiology

Journal Referee

Circulation, Circulation Research, JACC, JACC EP, American Journal of Physiology, American Journal of Cardiology, Journal of Cardiovascular Electrophysiology, Heart Rhythm, Journal of the American College of Cardiology, IEEE Transactions on Biomedical Engineering

Clinical Activities

Certification

1988 Diplomate, National Board of Medical Examiners
1990 Diplomate, American Board of Internal Medicine (ABIM)
1993 Diplomate in Cardiovascular Disease, ABIM
1996 Diplomate in Clinical Cardiac Electrophysiology, ABIM
2004 Recertification in Cardiovascular Disease, ABIM
2006 Recertification in Clinical Cardiac Electrophysiology, ABIM
2015 Recertification in Cardiovascular Disease, ABIM
2016 Recertification in Clinical Cardiac Electrophysiology, ABIM

Licensure

1988 Medical License, State of Massachusetts (No. 60578)
1990 Medical License, State of Maryland (No. D39912)

Service Responsibilities

1993-curr Attending, Cardiac Electrophysiology Service, 60% effort

Clinical Trial Participation

1993-1995 Co-Investigator, An open label safety study of intravenous amiodarone HCl in patients with life threatening VT/VF.

1994-1995 Co-Investigator, Radiofrequency catheter ablation of cardiac arrhythmias using the ATAKR ablation system, Sponsor: Cardiorhythm

1994-1995 Co-Investigator, Advanced multiprogrammable active can defibrillator, Sponsor: Guidant Inc.

1994-1996 Co-Investigator, Evaluation of the dispersion of repolarization and refractoriness in human patients with normal and impaired LV function.

1995-1996 Co-Investigator, Randomized controlled trial of efficacy of a steroid-tipped permanent pacemaker lead, Sponsor: Medtronic Inc.

1995-1996 Co-Investigator, Ventak PRx-III multiprogrammable implantable defibrillator, Sponsor: Guidant Inc.

1996-1998 Co-Investigator, Randomized trial of Pacemaker and ICD Implantation via the Axillary and Cephalic Veins.

1996-1998 Co-Investigator, Cooled ablation system for RF ablation of ischemic VT, Sponsor: Cardiac Pathways Inc.

1997-1999	Co-Investigator, Low energy safety study (LESS): Efficacy of ventricular defibrillation with low energy margins, Sponsor: Guidant Inc.
1997-2001	Co-Investigator, SCD-HeFT multicenter trial, Sponsor: Medtronic Inc.
1997-2003	Co-Investigator, DEFINITE multicenter trial, Sponsor: St. Jude Medical Inc.
1998-2000	Co-Investigator, Atrial Dynamic Overdrive Pacing Trial (ADOPT-A), Sponsor: St. Jude Medical Inc.
1998-2000	Co-Investigator, Randomized trial of Cooled RF and Standard RF ablation of Atrial Flutter.
1998-2001	Co-Investigator, Contak-CD multicenter trial, Sponsor: Guidant Inc.
2000-2003	Co-Investigator, COMPANION multicenter trial, Sponsor: Guidant Inc.
2001-2003	Co-P.I., Biventricular pacing in chronic atrial fibrillation (BiCAF) study, Sponsor: Guidant Inc.
2002-2006	P.I., Alternans Before Cardioverter Defibrillator (ABCD) trial, Sponsor: St. Jude Medical Inc.
2003-2004	National P.I., Easytrak-3 multicenter trial, Sponsor: Guidant Inc.
2005-2010	Site P.I., MADIT-CRT trial, Sponsor: Guidant Inc.
2005-2011	Organizing Committee, RIGHT trial, Sponsor: Guidant, Inc.
2005-2010	Organizing Committee and DSMB, MENDMI trial, Sponsor: Guidant, Inc.
2008-2010	Site P.I., Ablation Frontiers pivotal trial, Sponsor: Ablation Frontiers, Inc.
2008-2011	Site P.I., DETERMINE trial, Sponsor: St. Jude Medical, Inc.
2011-2017	Site P.I., RAID trial, Sponsor: NIH
2012-2014	National P.I., SAMURAI trial, Sponsor: Boston Scientific Corp.
2014-2018	Steering Committee and Site PI, ENHANCE-CRT, Sponsor: St. Jude Medical Inc.
2016-2021	Site P.I., AMAZE trial, Sponsor: SentreHeart
2020-2021	Site P.I., PROOF trial, Sponsor: EPD Solutions / Philips

Organizational Acivities

Institutional Administrative Appointments

1996-2002	Associate Director of Cardiac Electrophysiology, Johns Hopkins Hospital
2002-curr	Co-Director of Cardiac Electrophysiology, Johns Hopkins Hospital
2002-curr	Director of Cardiac EP Fellowship Training, Johns Hopkins University
2006-2016	Department of Medicine Promotions Committee, Johns Hopkins University

Professional Societies

1983-	Member, Institute of Electrical and Electronics Engineers
1987-	Member, American Medical Association
1994-	Member, Heart Rhythm Society (formerly NASPE)
1998-	Clinical Council, American Heart Association

1998- Fellow, American College of Cardiology
2006- Fellow, Heart Rhythm Society

Study Section Participation

1992 Reviewer, NHLBI Reverse Site Visit for Program Project Grant
1996-1997 Reviewer, A.H.A., Maryland Affiliate
2000-2003 Study Section Member, A.H.A. Mid-Atlantic Affiliate
2001-2004 NASPE Fellowship Grant Selection Committee
2002 AHA Melvin Marcus Award Selection Committee

Conference Abstract Reviewer

2000-2004 North American Society for Pacing and Electrophysiology (NASPE)
2001-2008 American Heart Association
2005-curr Heart Rhythm Society

National Committee Appointments

2002 NASPE Web/Technology Task Force
2006-2008 HRS, Membership Committee
2008-2009 HRS, Task Force on Leads Performance
2010-2016 ABIM, CCEP Exam Writing Committee
2011-2012 EHRA/HRS Expert Consensus on CRT Task Force
2013-2015 HRS, Awards Committee
2014-2015 HRS/EHRA/APHRS/SOLAECE Expert Consensus on Optimal ICD Programming and Testing Task Force
2014- HRS, CCEP Program Directors Subcommittee
2018-2019 Vice-Chair, HRS CCEP Program Directors Subcommittee

Data Safety Monitoring Boards

2010-2012 S-ICD System Clinical Investigation, Protocol: DN-03909 Sponsor: Cameron Health
2021- Rebalance HF study, Sponsor: Axon Therapies

Consultantships

1993-1995 Consultant, Cardiologic Corp.
1995-1997 Medical Advisory Board, Boston Medical Technologies, Inc.
1996-curr Officer and consultant, Robin Medical, Inc.
1998-2001 Cofounder and consultant, Surgi-Vision, Inc.
2000-2005 Consultant, Revivant Corp.
2001-2006 Medical Advisory Board, Telzuit Corp.
2003-2012 Consultant, Cameron Health, Inc.
2003-2006 Medical Advisory Board and consultant, Guidant Corp.
2004-2009 Medical Advisory Board, CardioOptics Corp.
2005-2020 Consultant, Zoll Medical Corp.
2006-2008 Consultant, EP MedSystems, Inc.
2006 Consultant, Alinea Corp.
2006-2015 Medical Advisory Board and consultant, Boston Scientific Corp.
2006-2009 Scientific Advisory Board, Cleveland Clinic Atrial Fibrillation Innovation Center

2007-2010	Co-founder and consultant, Imricor Corp.
2007-2012	Consultant and Scientific Advisory Board, Cardiac Concepts, Inc.
2007-2008	Consultant and Scientific Advisory Board, Corventis, Inc.
2012-2014	Consultant, Respicardia, Inc.
2012-curr	Founder, EP Sciences, LLC
2014	Consultant, Zansors, Inc.

Recognition

Honors and Awards

1976	National Merit Finalist
1979	Elected to Eta Kappa Nu, M.I.T. Chapter
1980	Elected to Tau Beta Pi, M.I.T. Chapter
1986	Elected to Sigma Xi, M.I.T. Chapter
1986-1987	Whitaker Health Sciences Fellow
1989-1990	A.H.A. Massachusetts Affiliate Research Fellow
1996-1998	Johns Hopkins University Solo Cup Clinician Scientist
1996-2001	N.I.H. FIRST Award Recipient
1997	Mentor for fellow finalist in NASPE Young Investigator Competition
1997-curr	Cudahy Scholar of the Johns Hopkins University
1998-curr	Fellow, American College of Cardiology
2001-2003	Frank T. McClure Fellow of the Johns Hopkins Applied Physics Lab
2002-2006	A.H.A. Established Investigator
2006-curr	Fellow, Heart Rhythm Society
2007	Co-Mentor for fellow winner in HRS Young Investigator Competition
2013	Abell Foundation Award for Research Translation
2015	National Academy of Inventors, Johns Hopkins University chapter
2017	Mentor, Best Basic Science Paper in Heart Rhythm in 2016
2019	Endowed Chair, Nicholas J. Fortuin Professor in Cardiology
2021	Fellow of the National Academy of Inventors

Invited Lectures and Talks

1995 “Predicting and Preventing Sudden Cardiac Death”
Cardiology Grand Rounds, Johns Hopkins University

1997 “Electrophysiologic Manifestations of Cardiac Sarcoidosis”
Cardiology Grand Rounds, Johns Hopkins University

1998 "Significance of Repolarization Lability"
International Symposium on Circulatory Homeostasis
National Cardiovascular Center, Osaka, Japan

1998 "Hemodynamic Effects of VDD Pacing"
Cardiostim, Nice, France

1998 "Beat-to-Beat QT Interval Variability"
Biomedical Engineering Society, Cleveland, OH

1999 “Ablation of Para-Hisian Accessory Pathways”
Symposium on Interventional Electrophysiology, Louisville, KY

1999 “Catheter Ablation of Atrial Flutter”
Symposium on Interventional Electrophysiology, Louisville, KY

2000 “Catheter Ablation of Surgical Proarrhythmia”
Cardiology Grand Rounds, Johns Hopkins University

2000 “Non-Invasive Assessment of Arrhythmia Risk”
NASPE Clinical Tutorial, Washington, DC

2000 “Non-Invasive Risk Stratification in Clinical Practice”
NASPE Meet the Experts Panel, Washington, DC

2000 “QT Interval Variability”
Cardiostim, Nice, France

2001 “Catheter Ablation of Atrial Flutter”
NASPE Clinical Tutorial, Boston, MA

2001 “QT Interval Dynamicity,”
NASPE Clinical Tutorial, Boston, MA, May, 2001.

2001 “Indicators of Repolarization”
EP Society, American Heart Association, Anaheim, CA

2002 “Mapping and Ablation of Macroreentrant Atrial Tachycardia”
NASPE Core Curriculum, San Diego, CA

2002 “Risk Stratification in Patient Management”
Chairman, NASPE Meet the Experts Panel, San Diego, CA

2002 “Repolarization Lability: A marker of Electrical Instability”
Cardiology Grand Rounds, Duke University, Durham, NC

2003 “A Curative Approach for Atrial Fibrillation”
Medical Grand Rounds, Johns Hopkins University

2003 “The Latest Buzz in Device Trials”
Cardiology Grand Rounds, Johns Hopkins University

2003 “QT Interval Variability”
International Society for Computerized Electrocardiology, Snowbird, UT

2003 “ICD Therapy: State-of-the-Art and Future Directions”
International Society for Computerized Electrocardiology, Snowbird, UT

2003 “The Reality of MADIT-2 Economics”
Emerging Therapies for the Cardiac Patient, New York, NY

2003 Chairman, Symposium on Novel Cardiac Therapeutics, New York, NY

2004 Chairman, Symposium on Atrial Fibrillation: Contemporary Issues
ACC meeting, New Orleans

2004 “Is it time for a non-transvenous ICD?”
Heart Rhythm Society, San Francisco, CA

2005 “The Leadless ICD”
Heart Rhythm Society, New Orleans, LA

2006 “Two Cases with a Common Theme”
Cardiology Grand Rounds, Johns Hopkins University

2006 Debate: "CRT Deserves Widespread Use" (Protagonist)
American Society of Echocardiography, Baltimore, MD

2007 "How to Avoid Inappropriate ICD Shocks"
Heart Rhythm Society, Denver, CO

2007 "Risk Stratification for Primary SCD Prevention in Nonischemic Cardiomyopathy"
Heart Rhythm Society, Denver, CO

2008 "How Do We Train the Electrophysiologist in 2008: So Little Time"
Cardiostim, Nice, France

2010 "What Clinical Trials Tell Us about Cardiac Resynchronization Therapy"
Heart Rhythm Society, Denver, CO

2010 "Repolarization Variability: Assessment by Implanted Devices"
Cardiostim, Nice, France

2010 "ECG Markers of Heart Failure Progression"
Cardiostim, Nice, France

2010 "Heart Failure and Atrial Fibrillation: Understanding the Pathophysiology as a Determinant of Treatment Strategy"
Advanced CRT Summit, Philadelphia, PA

2011 "State of the Art and Future of Connectivity"
Advanced CRT Summit, Chicago, IL

2013 "What Crazy New Things are Electrophysiologists Getting Into?"
Cardiology Grand Rounds, Johns Hopkins University

2013 "MRI in Patients with Implanted Devices: Predictions for the Future"
Heart Rhythm Society, Denver, CO

2014 "Something New in Defibrillation: Can Defibrillation be Rendered Painless?"
Cardiology Grand Rounds, Ohio State University

2014 "How to Troubleshoot Cardiac Resynchronization Pacing Problems"
Heart Rhythm Society, San Francisco, CA

2015 Debate: "Every AF Patient Requiring CRT Should Have an AV Node Ablation – Protagonist," Heart Rhythm Society, Boston, MA

2015 "LA Appendage Occlusion Devices: Do they have a role?"
Venice Arrhythmia, Venice Italy

2015 "Subcutaneous ICD Therapy: Is there a role in the elderly?"
Venice Arrhythmia, Venice Italy

2016 Debate: "The Transvenous ICD is the Optimal Single Chamber ICD System – Protagonist,"
Heart Rhythm Society, San Francisco, CA

2016 "Interventional Therapy for Atrial Fibrillation Stroke Prevention: What Says the Evidence?"
Mid-Atlantic ACC Symposium, Washington, DC

2017 "LA Appendage Closure for Stroke Prevention In Atrial Fibrillation"
Cardiology Grand Rounds, Johns Hopkins University