

CURRICULUM VITAE

I. **KAREN JUNE BECKMAN, MD**

Heart Rhythm Institute
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II. **EDUCATION**

Electrophysiology Fellow 1985-1986
Baylor College of Medicine
Houston, Texas

Cardiology Fellow 1983-1985
University of Illinois
Chicago, Illinois

Northwestern University Medical School M.D. 1976-1980
Chicago, Illinois

Northwestern University B.M. 1974-1978
Chicago, Illinois

III. **PROFESSIONAL EXPERIENCE**

Professor of Medicine, University of Oklahoma 2001
Oklahoma City, Oklahoma

Associate Professor of Medicine, University of Oklahoma 1995-2001
Oklahoma City, Oklahoma

Assistant Professor of Medicine, University of Oklahoma 1990-1995
Oklahoma City, Oklahoma

Director, Electrophysiology and Electrocardiography 1989-1990
University of Illinois, Chicago

Director, Cardiac Ambulatory Care Center 1988-1990
University of Illinois, Chicago

Assistant Professor of Medicine 1987-1990
University of Illinois, Chicago

Instructor in Medicine
University of Illinois, Chicago 1986-1987

IV. **CERTIFICATION AND BOARD STATUS**

American Board of Internal Medicine
Re-certified in Clinical Cardiac Electrophysiology 2002
Clinical Cardiac Electrophysiology 1992
Cardiovascular Disease 1985
Internal Medicine 1983
Diplomate, National Board of Medical Examiners 1980

V. **LICENSURE**

Oklahoma (active) 1990-
Present
Illinois (inactive) 1983-2002

VI. **RESEARCH AND SCHOLARSHIP**

NaviStar ThermoCool Evaluation of the Catheter with the Stockert 70 Radiofrequency Generator for Endocardial Ablation in Patients with Typical Atrial Flutter, Condition of Approval Study, PMA #P030031 IRB# and C# not yet assigned

Principal Investigator: **Karen Beckman**

Collaborating Investigator: Deborah Lockwood, Sunny Po and Moeen Abedin

Sponsor: Biosense Webster Projected Grant Award: \$50,000

Start Date: 6/1/2006 End Date: Closed

Study Objective; Subjects with symptomatic typical atrial flutter will be considered for this condition of approval study. The study will be conducted at up to 30 centers in a minimum of 221 evaluable subjects. The primary objective is to provide additional, corroborative safety and efficacy data for the NaviStar ThermoCool catheter for the treatment for subjects with typical atrial flutter.

Implantable Cardioverter Defibrillator Registry for long QT Syndrome (ICD-LQTS): Observational Study IRB#12078

Principal Investigator: **Karen Beckman**

Collaborating Investigator: Richard Wu, Deborah Lockwood and Sunny Po

Sponsor: **Cardiac Arrhythmia Research Institute**

Start Date: 3/2005 End Date: Open

Study Objective: To determine the life-saving effectiveness and safety of ICD therapy in people with LQTS, a registry bank will be formed to monitor the clinical experiences of people with PQTs who have an ICD. Information for the registry bank will be obtained via an enrollment questionnaire, and medical information.

Implantable Cardioverter Defibrillator Registry for long QT Syndrome (ICD-LQTS): Observational Study IRB#09585 C3021501

Principal Investigator: **Sunny S. Po**

Collaborating Investigators: Warren Jackman, Karen Beckman, Hiroshi Nakagawa, Richard Wu, Deborah Lockwood

Sponsor: **NIH**

Projected Grant Amount: \$669,195

Start Date: 1/22/2004

End Date: 11/30/2007

Study Objective: The purpose of this study is to find out the factors causing unsuccessful catheter ablations in approximately 10% of the patients with paroxysmal supraventricular tachycardia.

Localization of the anterograde and retrograde components of the reentrant circuit of AV nodal reentrant tachycardia. IRB#11255

Principal Investigator: **Deborah J. Lockwood**

Collaborating Investigators: Sunny Po, Warren Jackman, Karen Beckman, Richard Wu

Sponsor: **Cardiac Arrhythmia Research Institute**

Start Date: 3/25/2004

End Date: Open

Study Objective: The purpose of this study is to identify the location of the components of the circuit, which allows AV nodal reentry tachycardia to occur. The most common location of one part of the circuit is known, and will provide the primary target of the planned ablation procedure if the diagnosis of AVNRT is confirmed. In some patients ablation at this site does not eliminate the abnormal rhythm and other targets are sought.

Ablation of inappropriate sinus tachycardia syndrome by targeting cardiac neural input. IRB#11468

Principal Investigator: **Deborah J. Lockwood**

Collaborating Investigators: Sunny Po, Warren Jackman, Karen Beckman, Richard Wu

Sponsor: **Cardiac Arrhythmia Research Institute**

Start Date: 6/7/2004

End Date: Open

Study Objective: The purpose of this study is to determine whether radiofrequency catheter ablation, targeting the nerve that goes to the sinus node, can effectively and safely reduce the sinus node rate and reduce symptoms of palpitations.

Mechanisms of Arrhythmias and Long-Term Follow-Up of Patients Undergoing Catheter Ablation. IRB#09343

Co-Principal Investigators: Warren Jackman and Karen Beckman

Collaborating Investigators: Sunny Po, Richard Wu and Deborah Lockwood

Sponsor: Cardiac Arrhythmia Research Institute

Start Date: 2/25/2001

End Date: Open

Study Objective: The purpose of this study is to assess the long-term effects of catheter ablation procedures performed at this institution, including recurrence of the ablated arrhythmia and any late complications.

VII. PUBLICATIONS

Refereed Journals

1. Pakala A, Dasari TW, **Beckman KJ**. Brugada Pattern Mimicking Acute Coronary Syndrome in a Febrile State. *J Oklahoma State Medical* 105; 275-8, 2012. 21683023
2. Wayangankar SA, Dasari TW, Lozano PM, and **Beckman KJ**. A Case of Critical Aortic Stenosis Masquerading as Acute Coronary Syndrome. *Cardiology Research and Practice* 2010.
3. Lockwood D, Nakagawa H, Peyton MD, Edgerton JR, Scherlag BJ, Sivaram CA, Po SS, **Beckman KJ**, Abedin M, Jackman WM. Linear left atrial lesions in minimally invasive surgical ablation of persistent atrial fibrillation: Techniques for assessing conduction block across surgical lesions. *Heart Rhythm* 2009; 6: S50-S63
4. Patel MR, Dehmer GJ, Hirshfeld JW, Smith PK, Spertus JA, Masoudi FA, Brindis RG, **Beckman KJ**, Chamber CE, Perguson TS, Grover G, Holmes DR, Klein LW, Limacher M, Mack MJ, Malenka DJ, Park MH, Ragosta M, Ritchie JL, Rose GA, Rosenberg AB, Shemin RJ, Weintraub WS, Wolk MJ, Allen JM, Douglas PS, Hendel RC, Peterson ED. CCF/SCAI/STS/AATS/AHA/ASNC 2009 Appropriateness Criteria for Coronary Revascularization: a report of the American College of Cardiology Foundation Appropriateness Criteria Task Force, Society for Cardiovascular Angiography and Interventions, Society of Thoracic Surgeons, American Association for Thoracic Surgery, American Heart Association, and the American Society of Nuclear Cardiology. 2009
5. Patterson E, Jackman WM, **Beckman KJ**, Lazzara R, Lockwood D, Scherlag BJ, Wu R, Po S. Spontaneous pulmonary vein firing in man: relationship to tachycardia-pause early afterdepolarizations and triggered arrhythmia in canine pulmonary veins in vitro. *J Cardiovasc Electrophysiol* 2007;18(10):1067-75.
6. Nakagawa H, Antz M, Wong T, Schmidt B, Ernst S, Ouyang F, Vogtmann T, Wu R, Yokoyama K, Lockwood D, Po SS, **Beckman KJ**, Davies DW, Kuck KH, Jackman WM. Initial experience using a forward directed, high-intensity focused ultrasound balloon catheter for pulmonary vein antrum isolation in patients with atrial fibrillation. *J Cardiovasc Electrophysiol* 2007;18(2):136-144.

7. Hasdemir C, Gurgun C, Yavuzgil O, Yuksel A, **Beckman KJ**. Giant right atrial diverticulum associated with Wolff-Parkinson-White syndrome. *J Cardiovasc Electrophysiol* 2006 17(4):443.
8. Flaker GC, Belew K, **Beckman KJ**, Vidaillet H, Kron J, Stafford R, Mickel M, Barrell P for the AFFIRM Investigators. Asymptomatic atrial fibrillation: demographic features and prognostic information from the atrial fibrillation follow-up investigation of rhythm management (AFFIRM) study. *Am Heart J* 2005;149(4):657-63.
9. Murray K, Rottman JN, Arbogast PG, Primm RK, Campell WB, Solomon AJ, Olgin JE, Wilson MJ, DiMarco JD, **Beckman KJ**, Dennish G, Naccarelli GV, Nasco E, Shemanski L, Ray WA, and the NHLBI AFFIRM investigators. Inhibition of angiotensin II signaling and recurrence of atrial fibrillation in AFFIRM. *Heart Rhythm* 2004 1(6):669-75.
10. Nakagawa H, Aoyama H, **Beckman KJ**, Po SS, Wu R, Lockwood D, Spector P, Calame JD, Lustgarten LD, Herring L, Hasdemir C, Singh D, Lazzara R, Jackman WM. Relation between pulmonary vein firing and extent of left atrial-pulmonary vein connection in patients with atrial fibrillation. *Circulation* 2004;109:1523-9.
11. Klein RC, Raitt MH, Wilkoff BL, **Beckman KJ**, Coromilas J, Wyse DG, Friedman PL, Martins JB, Epstein AE, Engelstein ED, Hallstrom AP, Ledingham RB, Belco KM, Green HL, and the AVID investigators. Analysis of implantable cardioverter defibrillator in the antiarrhythmics versus implantable defibrillators (AVID) trial. *J Cardiovasc Electrophysiol* 2003;14:940-948.
12. Sun Y, Arruda M, Otomo K, **Beckman KJ**, Nakagawa H, Calame J, Po SS, Spector P, Lustgarten D, Herring L, Lazzara R, Jackman WM. Coronary sinus-ventricular accessory connections producing posteroseptal and left posterior accessory pathways: incidence and electrophysiological identification. *Circulation* 2003;106:1362-7.
13. Raitt MH, Klein RC, Wyse RG, Wilkoff BL, **Beckman KJ**, Epstein AE, Coromilas J, Friedman PL, Martins J, Ledingham RB, Greene HL, and the AVID investigators. Comparison of arrhythmia recurrence in patients presenting with ventricular fibrillation compared to ventricular tachycardia in the antiarrhythmics versus implantable defibrillators (AVID) trial. *Am J of Cardiol* 2002;19:812-816.
14. Hasdemir C, Shah N, Rao A, Acosta H, Matsudaira K, Neas BR, Reynolds DW, Po S, Lazzara R, **Beckman KJ**. Analysis of troponin 1 levels after spontaneous implantable cardioverter defibrillator shocks. *J Cardiovasc Electrophysiol* 2002;13(2):144-50.

15. Wyse DG, Friedman P, Brodsky M, **Beckman KJ**, Carlson M, Curtis A, Hallstrom A, Raitt M, Wilkoff B, Greene L. Life-threatening ventricular arrhythmias due to transient or correctible causes: high risk for death in follow-up. *J Am Coll Cardiol* 2001;38:1718-24.
16. Steinberg JS, **Beckman KJ**, Greene HL, Marinchak R, Klein RC, Greer SG, Ehler F, Foster P, Menchavez E, Raitt M, Wathen MS, Morris M, Hallstrom A. Follow-up of patients with unexplained syncope and inducible ventricular tachyarrhythmias: analysis of the AVID registry and an AVID substudy. *J Cardiovasc Electrophysiol* 2001;12:996-1001.
17. Rao A, Reynolds DW, **Beckman KJ**. Unexpectedly high defibrillation thresholds in an active can implantable cardioverter-defibrillator system. *PACE* 2001;24:1168-1169.
18. Otomo K, Gonzalez MD, Becker AE, **Beckman KJ**, Nakagawa H, Shah N, Arruda MS, Matsudaira K, Wang Z, Imai S, Lazzara R, Jackman WM. Reversing the direction of paced ventricular and atrial activation wavefronts reveals an oblique course in accessory AV pathways and improves localization of accessory AV pathways for catheter ablation. *Circulation* 2001;104:550-6.
19. Gonzalez MD, Otomo K, Shah N, Arruda MS, **Beckman KJ**, Lazzara R, Jackman WM. Transseptal left heart catheterization for cardiac ablation procedures. *J of Intervent Cardiac Electrophysiol* 2001;5:89-95.
20. Exner DV, Pinski SL, Wyse DG, Renfro EG, Follmann D, Gold M, **Beckman KJ**, Coromilas J, Lancaster S, Hallstrom AP, and the AVID investigators. Electrical storm presages nonsudden death: the antiarrhythmias versus implantable defibrillators (AVID) trial. *Circulation* 2001;103:2066-2071.
21. Nakagawa H, Shah N, Matsudaira K, Overholt E, Chandrasekaran K, **Beckman KJ**, Spector P, Calame JD, Hasdemir C, Otomo K, Wang Z, Lazzara R, Jackman WM. Characterization of the reentrant circuit in macroreentrant right atrial tachycardia following surgical repair of congenital heart disease: isolated channels between dense scars allow "focal" ablation. *Circulation* 2001;103:699-709.
22. Menon V, Steinberg JS, Akiyam T, **Beckman KJ**, Carillo L, Kutalek. Implantable cardioverter defibrillator discharge rates in patients with unexplained syncope, structural heart disease, and inducible ventricular tachycardia at electrophysiological study. *Clin Cardiol* 2000;23:195-200.

23. The AVID investigators. Causes of death in the antiarrhythmics versus implantable defibrillators (AVID) trial. *J Am Coll Cardiol* 1999;34:1552-9.
24. Anderson JL, Hallstrom A, Epstein AE, Pinski S, Rosenberg Y, Nora MO, Chilson D, Cannon DS, Moore R, and the AVID investigators. Design and results of the antiarrhythmics vs implantable defibrillators (AVID) registry. *Circulation* 1999;9:1692-99.
25. Arruda MS, McClelland JH, Wang X, **Beckman KJ**, Widman LE, Gonzalez MD, Nakagawa H, Lazzara R, Jackman WM. Development and validation of an ECG algorithm for identifying accessory pathway ablation site in Wolff-Parkinson-White Syndrome. *J Cardiovasc Electrophysiol* 1998;9:2-12.
26. Sivaram CA, **Beckman KJ**. Images in clinical medicine. Amiodarone-induced skin discoloration. *New Eng J Med* 1997;337:1813.
27. The Antiarrhythmics vs implantable defibrillators (AVID) investigators. A comparison of antiarrhythmic drug therapy with implantable defibrillators in patients resuscitated from near-fatal ventricular arrhythmias. *N Eng J Med* 1997;337:1576-83.
28. Stambler BS, **Beckman KJ**, Kadish AH, Camm JA, Ellenbogen KA, Perry KT, Vanderlugt JT. Acute hemodynamic effects of intravenous ibutilide in patients with or without reduced left ventricular function. *Am J Cardiol* 1997;80:458-463.
29. Curtis AB, Hallstrom AP, Klein RC, Nath S, Pinski S, Epstein AE, Wyse DG, Cannon DS, Renfro E, and the AVID investigators. *Am J Cardiol* 1997;79:001-005.
30. Hirao K, Otomo K, Wang X, **Beckman KJ**, McClelland JH, Widman L, Gonzalez M, Arruda M, Lazzara R, Jackman WM. Para-Hisian pacing. A new method for differentiating retrograde conduction over an accessory AV pathway from conduction over the AVE node. *Circulation* 1996;94:1027-1035.
31. Nakagawa H, Lazzara R, Khastigir T, **Beckman KJ**, McClelland JH, Imai S, Pitha JV, Becker AE, Arruda M, Gonzalez MD, Widman LE, Rome M, Neuhauser J, Wang X, Calame JD, Gondean MD, Jackman WM. Role of the tricuspid annulus and the eustachian valve/ridge on atrial flutter. *Circulation* 1996;94:407-424.
32. Reiter MJ, Mann DE, Reiffel JE, Hahn E, Hartz V and the ESVEM investigators. Significance and incidence of concordance of drug efficacy

- predications by Holter monitoring and electrophysiology study in the ESVEM study. *Circulation* 1995;91:1988-95.
33. The AVID investigators. Antiarrhythmic versus implantable defibrillators (AVID) – rationale, design, and methods. *Am J Cardiol* 1995;75:470-475.
 34. Nakagawa H, Yamanashi WS, Arruda M, Pitha JV, Otomo K, Wang X, **Beckman KJ**, McClelland JH, Lazzara R, Jackman WM. Comparison of in vivo tissue temperature profile and lesion geometry for radiofrequency ablation using a saline irrigated electrode versus temperature control in a canine thigh muscle preparation. *Circulation* 1995;16:970-95.
 35. Lin JC, **Beckman KJ**, Hariman RJ, Bharati S, Lev M, Wang X. Microwave ablation of the atrioventricular junction in open chest dogs. *Bioelectromagnetics* 1995;16:97-105.
 36. Twidale N, Hazlitt HA, Berbari EJ, **Beckman KJ**, McClelland JH, Moulton KP, Prior MI, Lazzara R, Jackman WM. Late potentials are unaffected by radiofrequency catheter ablation in patients with ventricular tachycardia. *PACE* 1994;17(2):157-166.
 37. McClelland JH, Wang X, **Beckman KJ**, Hazlitt HA, Prior M, Nakagawa H, Lazzara R, Jackman WM. Radiofrequency catheter ablation of right atriofascicular (Mahaim) accessory pathways guided by accessory pathway activation potentials. *Circulation* 1994;89:2655-2666.
 38. Tong DA, **Beckman KJ**, Widman LE. Model based rhythm analysis of the ECG: evaluation of a prototype implementation. *J of Electrocardio* 1994;26 suppl:182-193.
 39. Nakagawa H, **Beckman KJ**, McClelland JH, Wang X, Lazzara R, Arruda M, Santoro I, Hazlitt HA, Abdalla I, Singh A, Gossinger H, Sweidan R, Hiaro K, Widman L, Jackman WM. Radiofrequency catheter ablation of idiopathic left ventricular tachycardia guided by a Purkinje potential. *Circulation* 1993;88:2607-2617.
 40. The ESVEM Investigators. Determinants of predicted efficacy of antiarrhythmic drugs in the electrophysiologic study versus electrocardiographic monitoring trial. *Circulation* 1993;87:323-329.
 41. Mason JW for the ESVEM Investigators. A comparison of seven antiarrhythmic drugs in patients with ventricular tachyarrhythmias. *N Eng J Med* 1993;329:452-8.
 42. Mason JW for the ESVEM Investigators. A randomized comparison of electrophysiologic testing with Holter monitoring to predict antiarrhythmic

- drug efficacy for ventricular tachyarrhythmias. *N Eng J Med* 1993;329:445-51.
43. Hoon TJ, McCollam PL, **Beckman KJ**, Hariman RJ, Bauman JL. Impact of food on the pharmacokinetics and electrocardiographic effects of sustained release of verapamil in normal subjects. *Am J Cardiol* 1992;70:1072-1076.
 44. Jackman WM, **Beckman KJ**, McClelland JH, Wang X, Friday KJ, Roman CA, Moulton KP, Twidale N, Hazlitt HA, Prior MI, Oren J, Overholt ED, Lazzara R. Treatment of supraventricular tachycardia due to atrioventricular nodal reentry by radiofrequency catheter ablation of slow-pathway conduction. *N Eng J Med* 1992;327:313-318.
 45. Berk SI, **Beckman KJ**, Hoon TJ, Hariman RJ, Hu D, Siegel FP, Bauman JL. Comparison of the pharmacokinetics and electrocardiographic effects of sublingual and intravenous verapamil. *Pharmacotherapy* 1992;12:33-39.
 46. Twidale N, Wang X, **Beckman KJ**, McClelland JH, Moulton KP, Prior MI, Hazlitt HA, Lazzara R, Jackman WM. Factors associated with recurrence of accessory pathway conduction after radiofrequency catheter ablation. *PACE* 1991;14:2042-2048.
 47. Jackman WM, Wang X, Friday KJ, Roman CA, Moulton KP, **Beckman KJ**, McClelland H, Twidale N, Hazlitt HA, Prior MI, Margolis PD, Calame JD, Overholt ED, Lazzara R. Catheter ablation of accessory atrioventricular pathways (Wolff-Parkinson-White syndrome) by radiofrequency current. *N Eng J Med* 1991;324:1605-1611.
 48. **Beckman KJ**, Parker RB, Bauman JL, Javaid JI, Hariman RJ. The hemodynamic and electrophysiologic actions of cocaine. Effects of sodium bicarbonate as an antidote. *Circulation* 1991;83:1799-1807.
 49. **Beckman KJ**, Bauman JL, Pimental PA, Garrard C, Hariman RJ. Arsenic induced torsade de pointes. *Critical Care Medicine* 1991;19:290-292.
 50. Schoen MD, Parker RB, Hoon TJ, Hariman RJ, Bauman JL, **Beckman KJ**. Evaluation of the pharmacokinetics and electrocardiographic effects of IV verapamil with IV calcium chloride pretreatment. *Am J Cardiol* 1991;67:300-304.
 51. Hariman RJ, Hu D, Gallastegui JL, **Beckman KJ**. High incidence of remission in patients with incessant ventricular tachycardia. *Am J Cardiol* 1990;66:831-836.

52. **Beckman KJ**, Gallastegui JL, Bauman JL, Hariman RJ. The predictive value of electrophysiologic studies in untreated patients with the Wolff-Parkinson-White syndrome. *J Am Coll Cardiol* 1990;15:640-647.
53. McCollam PL, Parker R, Bauman JL, **Beckman KJ**, Hariman RJ. Proarrhythmia: a paradoxical response to antiarrhythmic drugs. *Pharmacotherapy* 1989;9:144-153.
54. Lin JC, **Beckman KJ**, Hariman RJ. Microwave ablation for tachycardia. *IEEE/EMBS International Conf Proc* 1989;pp 1141-1142.
55. Hariman RJ, **Beckman KJ**, Gomes JAC, Bauman JL, El-Sherif N. Cryothermal mapping of the sinus node in dogs: a simple method of localizing dominant and latent pacemakers. *Cardiovasc Res* 1989;23:231-238.
56. McCollam PL, Bauman JL, **Beckman KJ**, Hariman RJ. A simple method of monitoring antiarrhythmic drugs during acute and chronic therapy. *Am J Cardiol* 1989;63:1273-1275.
57. **Beckman KJ**, Velasco CE, Krafcheck J, Lin HT, Margro S, Wyndham CRC. Significant variability in the mode of induction of ventricular tachycardia. *Am Heart J* 1988;116:718-726.
58. Saad N, Bauman JL, Gallastegui JL, **Beckman K**, Hariman RJ. Analysis of antiarrhythmic drug concentrations determined during electrophysiologic drug testing in patients with ventricular tachycardia. *Am J Cardiol* 1988;61:922-924.
59. Krafchek J, Lin HT, **Beckman KJ**, Nielson AP, Magro SA, Hargis J, Wyndham CRC. Cumulative effects of amiodarone on inducibility of ventricular tachycardia: implications for electrophysiologic testing. *PACE* 1988;11:434-444.
60. Skinner JE, **Beckman KJ**, Nielson CM. Detection of the cardiac patient at risk using the event related slow potential. *Electroencephalogr Clin Neuro Suppl* 1987;40:543-548.
61. Bauman JL, Berk SI, Hariman RJ, Langenberg PW, Deal BJ, **Beckman KJ**, Brownstein S, Prechel D, Gallastegui JL. Amiodarone for recurrent sustained ventricular tachycardia: efficacy, safety, and factors influencing long-term outcome. *Am Heart J* 1987;114:1436-1444.
62. **Beckman KJ**, Hariman R. When to treat ventricular tachycardia without organic heart disease. *J of Critical Illness* 1986;1:15.

63. **Beckman KJ**, Lin HT, Krafcheck J, Wyndham CRC. Classic and concealed entrainment in typical and atypical atrial flutter. *PACE* 1986;9:826-835.

Non-refereed Journals

None

Chapters in Books

1. Lockwood D, Otomo K, Wang Z, Foresti S, Nakagawa H, **Beckman KJ**, Scherlag B, Patterson E, Lazzara R, Jackman WM. Electrophysiological Characteristics of Atrioventricular Nodal Reentrant Tachycardia: Implications for the Reentrant Circuits. In: Zipes D, Jalife J (eds) Cardiac Electrophysiology From Cell to Bedside. Saunders, 2004;537-557.
2. Otomo K, Wang Z, **Beckman KJ**, Spector P, Nakagawa H, Matsudaira K, Patterson E, Lazzara R, Jackman WM. The Reentrant Circuit for Slow/Fast AV Nodal Reentrant Tachycardia. In: Mazgalev TN, Tchou PJ (eds) A-V Nodal Electrophysiology: A View from the Millennium. Futura Publishing Co., Inc, 2000;421-436.
3. **Beckman KJ**, Lazzara R. Cardiac Arrhythmias and Conduction Disturbances. In: Kaufman CEE, McKee PA (eds) Essentials of Pathophysiology. Little, Brown, and Co., Boston 1996.
4. McClelland JH, Jackman WM, **Beckman KJ**, Nakagawa H, Arruda M, Wang X, Prior MI, Lazzara R. The Spectrum of "Mahaim-like" Accessory Connections and Their Associated Ablation Techniques. In: Oto AM (ed) Practice and Progress in Cardiac Pacing and Electrophysiology, Kluwer Academic Publishers, Netherlands 1996.
5. Jackman WM, Nakagawa H, Heidbuchel H, Beckman KJ, McClelland JH, Lazzara R. Three Forms of Atrioventricular Nodal (and Junctional) Reentrant Tachycardia. In: Zipes DP, Jalife J (eds) Cardiac Electrophysiology, W.B. Saunders Company, Philadelphia 1995.
6. Oren JW, **Beckman KJ**, McClelland JH,, Wang X, Lazzara R, Jackman WM. A Functional Approach to the Preexcitation Syndromes. In: Akhtar M (ed) Cardiology Clinics, W. B. Saunders Co, Philadelphia 1993.
7. **Beckman KJ**, Hariman RJ. Extracellular Recording Techniques. In: Miura DS, Dingham KH (eds) Basic and Clinical Electrophysiology of the Heart MerceL Dekker, Inc., New York 1991.

Abstracts

1. Nakagawa H, Abedin M, Lockwood D, Po SS, **Beckman KJ**, Ikeda A, Lazzara R, Jackman WM: Substrate ablation of scar ventricular tachycardia using magnetic catheter maneuvering system. *Heart Rhythm* 2010; 7: S65.
2. Lockwood, DJ, Po SS, **Beckman KJ**, Nakagawa H, Karim R, Herring L, Abedin M, Patterson E, Scherlag BJ, Jackman WM. Late extrastimuli (after atrial activation) captures rightward inferior extension of AV node (slow pathway) resetting slow/fast AV nodal reentrant tachycardia in 5 patients. *Heart Rhythm* 5(5);PO2-18, 2008.
3. Patterson E, Jackman WM, **Beckman KJ**, Lockwood DJ, Lazzara R, Scherlag BJ, Wu R, Po SS. Spontaneous pulmonary vein firing in man-relationship to tachycardia-pause early afterdepolarizations (EADS) and triggered arrhythmia in canine pulmonary veins (PVS) *Heart Rhythm* 4(5);AB9-1, 2007.
4. Nakagawa H, Yokoyama K, Hayam G, Katari V, Collier J, Zhang Y, Po SS, **Beckman KJ**, Lockwood DJ, Slobodova A, Herring L, Olsen J, Scherlag BJ, Lazzara R, Jackman WM. Effective localization of left atrial autonomic ganglionated plexi using a computer algorithm during mapping in atrial fibrillation. *Heart Rhythm* 4(5);AB33-6, 2007.
5. Lockwood DJ, Po SS, **Beckman KJ**, Patterson E, Scherlag BJ, Nakagawa H, Herring L, Olsen J, Lazzara R, Jackman WM. Selective capture of rightward inferior extension of AV node in slow/fast AV nodal reentrant tachycardia: evidence against the role of atrial myocardium in the triangle of Koch. *Heart Rhythm* 4(5);AB46-1, 2007.
6. Zhang Y, Nakagawa H, Collier J, Slobodova A, Katari V, **Beckman KJ**, Po SS, Lockwood DJ, Lazzara R, Jackman WM. Characteristics of left-sided Mahaim A-V pathways: report in 5 patients. *Heart Rhythm* 4(5);PO1-90, 2007.
7. Zhang Y, Nakagawa H, Po SS, Scherlag BJ, **Beckman KJ**, Lockwood DJ, Slobodova A, Katari V, Collier J, Lazzara R, Jackman WM. Effects of sequential ablation of autonomic ganglionated plexi: evidence for GP innervating multiple pulmonary veins. *Heart Rhythm* 4(5);PO5-19, 2007.
8. Nakagawa H, Yokoyama K, Katari V, **Beckman KJ**, Lockwood DJ, Po SS, Collier J, Slobodova A, Olsen J, Herring L, Scherlag BJ, Lazzara R, Jackman WM. Characterization of left atrial tachycardia after ganglionated plexi ablation plus pulmonary vein antrum isolation. *Heart Rhythm* 4(5);PO5-29, 2007.

9. Lindsay BD, Tomassoni GF, Reddy VY, Sehra R, **Beckman KJ**, Weiner S, Warner K, Zagrodsky J. Magnetic catheter navigation is safe and effective for ablation of supraventricular tachycardia: results of the multi-center ATTRAC study. *Heart Rhythm* 2006;3(5):P1-56.
10. Nakagawa H, Yokoyama K, Wu R, Po SS, Lockwood D, **Beckman KJ**, Herring L, Lazzara R, Scherlag BJ, Jackman WM. Comparison of areas of fractionated atrial potentials and location of autonomic ganglionated plexi between patients with paroxysmal, persistent and permanent atrial fibrillation. *Heart Rhythm* 2006;3(5):AB3-5.
11. Nakagawa H, Yokoyama K, Wu R, Po SS, Lockwood DJ, **Beckman KJ**, Herring L, Lazzara R, Jackman WM. Increased inducibility of macroreentrant left atrial tachycardia with addition of autonomic ganglionated plexi ablation to pulmonary vein antrum isolation. *Heart Rhythm* 2006;3(5):AB18-3.
12. Nakagawa H, Jackman WM, Scherlag BJ, Yokoyama K, Wu R, Oza S, Shukla H, **Beckman KJ**, Po SS, Lockwood D, Herring L, Lazzara R. Relationship of complex fractionated atrial electrograms during atrial fibrillation to the location of cardiac autonomic ganglionated plexi in patients with atrial fibrillation. *Circulation* 2005;112(17 suppl II):3482.
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14. Jackman WM, Lockwood DJ, Foresti S, **Beckman KJ**, Po SS, Nakagawa H, Wu R, Scherlag BJ, Aoyama H, Oza S, Herring L, Lazzara R. Double atrial potentials in the His bundle electrograms during slow/fast AV nodal reentrant tachycardia suggest block at tendon of Todaro. *Heart Rhythm* 2004;1:143A.
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IX. **TEACHING ACTIVITIES**

At the University of Oklahoma Health Sciences Center

1. Medicine Grand Rounds

“Anti-Arrhythmic Drug Update”

2. Cardiology Grand Rounds

2009 “Anti-Arrhythmic Drug Update”

2007 “Amiodarone”

2006 “Arrhythmogenic Right Ventricular Dysplasia”

“Informed Consent in Human Subjects Research and the Therapeutic Misconception”

3. “ICD Therapy as Primary Prevention of SCD: Trial evidence”

2001 “Tachycardia Mediated Cardiomyopathy”

2000 “Inappropriate Sinus Tachycardia”

4. **Cardiology Fellows Didactic Lecture Series**
1990 – Present
5. **Medical Student Pathophysiology Lecture**
Annually 1993 – 2000 and 2007-2012: “Cardiac Arrhythmias and Conduction Disturbances”
6. **Medical Student Pathophysiology Workshop**
Annually 1990 – Present
7. **Medicine Housestaff Subspecialty Lecture**
2012 “Diagnosis + Treatment of Arrhythmias”
2005 “Diagnosis + Treatment of Arrhythmia in the ICU setting”
2004 “Diagnosis + Treatment of Arrhythmias in the ICU setting”
2003 “Diagnosis + Treatment of Arrhythmias”
2002 “Diagnosis + Treatment of Arrhythmias”
8. **Professional Ethics and Professionalism (Medical students)**
Informed Consent 2003, 2004, 2005
9. **Ethics Journal Club**
Therapeutic Misconception 2005
10. **Human Research Protection Seminars**
Informed Consent 2000-present

State of Oklahoma

Comanche County Medical Center, October, 2008
“Atrial Fibrillation”

Contemporary Challenges in Biomedical Research (OHRP), December, 2004
"Informed Consent Issues"

Oklahoma City Chapter of the American Academy of Professional Coders 2000
"Treatment of Arrhythmias"

Primary Care Update 2012
“Evaluation and Treatment of New Onset Atrial Fibrillation”

National

- 2004 Northwest EP Society Meeting
"Use of the Stereotaxis Magnetic System for Mapping and Ablation"
- 2002 Women in Electrophysiology, Sonoma, NM
"Radiofrequency Catheter Ablation of Focal Atrial Fibrillation"

Annual Scientific Sessions of the North American Society of Pacing and Electrophysiology

- 2005 Tutorial “Minimum Follow-Up of the ICD Patient”
Allied Professional “Work-up of Ventricular Tachycardia”
- 2004 Tutorial "Follow-up of ICD Patients"
"Troublesome Arrhythmias in the ICD Patient"

International

Human Research Protection Education

- 2004 Lecture series in Human Research Participant Protection
St. Petersburg State, St. Petersburg
- 2009 Lecture series in Human Research Participant Protection
St. Petersburg State, St. Petersburg and Pedagogical
Institute, Nizny Novogrod
- 2011 Lecture seminar on Human Research Participant Protection
Walter Sisulu University/Nelson Mandela Academic
Hospital in Umthata, South Africa

X. PROFESSIONAL SERVICE

Clinical Activities

OU Physicians Faculty clinical practice – 1 day/week

Service to Professional Societies

University of Oklahoma Health Sciences Center (Service):

Campus

- | | | |
|--------------------------------------|--|--|
| 1. Institutional Review Board | 2000-present
1997-2000
1993-1997 | IRB Chairperson
Vice-Chairman
Member |
| 2. Campus Tenure Committee | 1998-2001 | Committee Member |
| 3. Institutional Biosafety Committee | 2006-present | Ad hoc member |
| 4. Faculty Appeals Board | 2010-present | Ad hoc member |

College

- | | | |
|--|--------------|--------------|
| 1. Program Director, Clinical Cardiac Electrophysiology Fellowship | 2000-present | |
| 2. College of Medicine Admissions | 1999-2003 | Board Member |

Hospital

- | | |
|---------------------------|-----------|
| 1. CCU Director | 1999-2002 |
| 2. Special Care Committee | 2000-2001 |

National:

1. **Abstract Grader:**
Heart Rhythm Society (formerly NASPE)
2008 29th Annual Scientific Session
2007 28th Annual Scientific Session
2006 27th Annual Scientific Session
2005 26th Annual Scientific Session
2004 25th Annual Scientific Sessions
2003 24th Annual Scientific Sessions

2. **Grant Reviewer:**
2004 VA Merit Review
2003 VA Merit Review
3. **Co-Chairman of Abstract Presentations:**
American Heart Association
2005 78th Annual Scientific Session ICDs: Defibrillation and
Antitachycardia Pacing
North American Society of Pacing and Electrophysiology/Heart Rhythm
Society
2006 27th Annual Scientific Session ICD: Outcomes
4. **Human Research Ethics**
Partnership for Human Research Protection, Inc. (Survey assessor)
2004-2005

Editorial Services (Journal Reviewer)

American Heart Journal
American Journal of Physiology
Chest
Circulation
Journal of American College of Cardiology
Journal of Cardiovascular Electrophysiology
Journal of Clinical Pharmacology
Heart Rhythm Society (formerly PACE)

XI. ADMINISTRATION (College and University Service)

Director, Cardiac Electrophysiology Fellowship Program	2000-present
Institutional Review Board Chairman	2000-present
Institutional Review Board Vice Chairman	1997-2000
Institutional Review Board Member	1993-1997

XII. MEMBERSHIPS, HONORS, AWARDS, AND SPECIAL RECOGNITION

Scholarly, Professional, and Scientific Memberships

Fellow, American College of Cardiology
Member, Heart Rhythm Society (formerly North American Society of
Pacing and Electrophysiology)
Member, American Heart Association
Member, Applied Research Ethics National Association

Awards, Honors, Special Recognition

Castle Connolly "America's Top Doctor's - Oklahoma"	2008
University of Oklahoma Professor of Medicine	2001
Albert S. Hyman Fellow, North American Society of Pacing and Electrophysiology	1985-1986
Chief Cardiology Fellow, University of Illinois at Chicago	1984-1985
Honors Program in Medical Education Northwestern University, Chicago	1974-1980

XIII. PROFESSIONAL GROWTH AND DEVELOPMENT

Department of Medicine Grand Rounds

Cardiovascular Grand Rounds

Heart Rhythm Society annual meetings

CME ACTIVITIES

2008

4/08 CITI Human Research Refresher	2 hours
4/08 OSMA/ACC, Oklahoma City	5.75 hours
5/08 Heart Rhythm Society, San Fransisco	24 hours
5/15/08 AF Seminar, San Fransisco	2 hours
7/22/08 Legal Medicine Curriculum: Module 1-Doctor-Pt Relationship	2 hours
(8/07-6/08) Cardiovascular Grand Rounds	17 hours
(7/07-6-08) Medicine Grand Rounds	18 hours
Total:	70.75 hours

2007

5/07 Heart Rhythm Society, AF Summit, Denver	15 hours
5/07 Heart Rhythm Society, 28 th Annual Scientific Sessions, Denver	9 hours
5/10/07 AF and VT Symposium: Deciphering the Mystery, Denver	2 hours
5/07 Standards of Care, Scope of Practice, Discontinued Care, Documentation II	4 hours
5/18/07 VA Research Data, Security and Privacy	1 hour
5/18/07 CITI Human Research Refresher	2 hours
Medicine Grand Rounds	8 hours
Cardiovascular Grand Rounds	9 hours
Pediatric Grand Rounds	1 hour
Advanced Research ethics, Boston MA 12/1/07	6.25 hours
PRIMER, Boston MA 12/2-12/4/07	11 hours
VA Moderate Sedation	1 hour

Total: 69.25 hours

2006

1/06 Advanced Cardiac Life Support, OKC VA 8 hours
5/6 EMTALA, Records and Disclosure, Patient Safety, Consultation and Referral 4 hours
5/06 CITI Program: Refresher Course in the Protection of Human Research Subjects 2 hours
5/06 Heart Rhythm Society, 27th Annual Scientific Session, Boston 15 hours
Cardiovascular Grand Rounds 6 hours
Medicine Grand Rounds 9 hours
11/06 2006 Annual HRPP Conference, Washington DC 19 hours

Total: 73 hours

2005

4/05 Continuing Education IC, Provider interaction, supervision, disclosure 4 hours
5/05 Heart Rhythm Society, Annual Scientific Session, New Orleans 13 hours
ACR8079-0 1.5 hours
11/05 American Heart Association, Annual Scientific Session, Dallas TX 11.5 hours
12/05 PRIMER/ARENA Annual Conference, Boston MAOUHSC 13 hours
Medical Grand Rounds 19 hours
OUHSC Cardiology Grand Rounds 16 hours

Total: 64 hours

2004

5/19-22 NASPE/Heart Rhythm Society, Annual Scientific Session, San Francisco, CA 13 hours
OUHSC Medicine Grand Rounds 10 hours

OUHSC Cardiology Grand Rounds	20 hours
OUHSC Medicine Research Seminar	1 hour
PRIMER/ARENA Annual IRB Conference, San Diego, CA	15 hours
Contemporary Challenges in Biomedical Research, OKC, OK	7 hours
Total:	63 hours

2003

3/ American College of Cardiology, Annual Scientific Session, Chicago, IL	10.5 hours
5/North American Society of Pacing and Electrophysiology, Washington DC	10 hours
12/ PRIM&R Annual IRB conference	16.25 hours
OUHSC Medicine Grand Rounds	(approx 10 hours)
OUHSC Cardiology Grand Rounds	17 hours
Totals:	62.5 hours