Curriculum Vitae

Eric Edward Johnson, M.D., F.A.C.C., F.H.R.S.

8060 Wolf River Blvd Germantown, TN 38138 (901) 271-1000

Date of Birth: November 1, 1961

Akron, Ohio

Marital Status: Married

<u>Citizenship:</u> United States of America

Education:

1980-1984 University of Akron

Akron, Ohio

B.S., Natural Sciences

(Part of a combined six-year B.S./M.D. program)

1982-1986 Northeastern Ohio Universities College of Medicine

Rootstown, Ohio

M.D.

(Part of a combined six-year B.S./M.D. program)

1986-1989 Internship and Residency in Internal Medicine

Bowman Gray School of Medicine

Wake Forest University

Winston-Salem, North Carolina

1989-1994 Cardiology and Electrophysiology Fellowships

Duke University Medical Center

Durham, North Carolina

Professional Experience:

1994 to present The Stern Cardiovascular Foundation, Inc.

8060 Wolf River Blvd

Germantown, Tennessee 38138

(901) 271-1000

Clinical Cardiac Electrophysiologist

Hospital Affiliations: Baptist Memorial Hospital - Memphis

6019 Walnut Grove Road Memphis, Tennessee 38120

Cardiologist – Active (1994 to present)

Baptist Memorial Hospital – Desoto 7601 Southcrest Parkway Southaven, Mississippi 38671 Cardiologist – Courtesy (1995 to present)

Baptist Memorial Hospital, Collierville 1500 W. Poplar Avenue Collierville, TN 38017 Cardiologist – Active (1999 to present)

Baptist Memorial Hospital North MS 1100 Belk Blvd Oxford, MS 38138 Cardiologist – Courtesy (2015 to Present)

Methodist Hospital - Germantown 7691 Poplar Avenue Germantown, Tennessee 38138 Cardiologist – Courtesy (1995 to present)

Saint Francis Hospital 5959 Park Avenue Memphis, Tennessee 38119 Cardiologist – Active (1995 to present)

Board Certification: American Board of Internal Medicine: **Certified #124545**

Diplomate in Cardiovascular Disease: Certified

Diplomate in Clinical Cardiac Electrophysiology: Certified

Initial Certification for Internal Medicine: 1989 Initial Certification for Cardiovascular Disease, 1993

Initial Certification for Clinical Cardiac Electrophysiology, 1994 Human Subjects Ethics Training: (web-based) sponsored by the Office for Human Research Protections (OHRP), January, 2003.

CITI Training: February, 2015 Certified Cardiac Device Specialist Certified Anticoagulation Provider Page 3

 Licensure:
 Tennessee
 08/08/87

 North Carolina
 07/01/94

 Mississippi
 12/12/94

Arkansas 03/10/95

DEA Registration: Tennessee & Mississippi

Professional Memberships: American Medical Association

American College of Physicians

Fellow, American College of Cardiology

Fellow, Heart Rhythm Society

Abstracts:

- 1. McGrew F, Johnson E, Coppess M, Foon J, Charlton S, Simms J.J. Significant Dose Escalation of Beta Blocker Therapy Following Initiation of Cardiac Resynchronization Therapy. Heart Rhythm, Vol. 9 (5), Supplement, 2012 May.
- 2. McGrew F, Johnson E, Coppess M, Foon J, Charlton S, Sims J.J. Survival Benefit Preserved over Long Term Follow-Up in 301 Elderly Cardiac Resynchronization Patients at a Single Center. Europace, Vol.12, Supplement 1:i154, 2010 June.
- 3. Charlton T, McGrew F, Johnson E, Coppess M, Hamilton B, Charlton S, Sims J.J. Defibrillator Utilization Rates in 234 Elderly Patients Receiving Cardiac Resynchronation Therapy. Journal of Cardiac Failure, 15 (6), Supplement 1:S60, 2009 August.
- 4. McGrew F, Johnson E, Coppess M, Hamilton B, Charlton S, Sims, J.J., Charlton T. Significant Survival Benefit in 286 Elderly Primary Prevention Patients with Implantable Cardioverter Defibrillators. Journal of Cardiac Failure, 15 (6), Supplement 1:S103, 2009 August.
- 5. McGrew F, Johnson E, Coppess M, Hamilton V, Charlton T.A., Charlton S, Sims J.J. Similar Survival Benefit Between Heart Failure Etiologies in 281 Elderly CRT Patients. Europace, Vol. 11, Supplement 1: poster 1021, 2009 July
- 6. Charlton T.A., McGrew F, Johnson E, Coppess M, Hamilton B, Charlton S, Sims J.J. Cardiac Resynchronization Therapy-Defibrillator Utilization Rates in 234 Elderly Patients, Europace, Vol. 11, Supplement 1, 2009 July. Oral abstract presentation at Europace 2009, Berlin, Germany on June 24, 2009.
- 7. McGrew F, Johnson E, Coppess M, Hamilton B, Charlton S, Sims J.J. Patients Aged 85 or Greater Derive Significant Benefit with Cardiac Resynchronization Therapy. Journal of Cardiac Failure, Vol. 14, Supplement 1: poster 324, August 2008
- 8. McGrew F, Johnson E, Coppess M, Charlton S, Sims J. J. Mortality Impact of CRT-D Versus Crt-P in Patients Greater than 75 years of Age. Europace, Vol 10, Supplement 1:i77, 2008 July.

Abstracts – Continued

- 9. McGrew F, Johnson E, Coppess M, Hamilton B, chralton S, Sims J.J. Report on Eleven Nonagenarians Receiving CRT at a Single Center. Europace, Vol 10, Supplement 1:i78, 2008 July.
- 10. McGrew F, Johnson E, Coppess M, Charlton S, Sims J.J. Survival Benefit with CRT in 344 Elderly Patients. Europace, Vol 10, Supplement 1:i166, Oral abstract presentation at 16th Annual Scientific Session Cardiostim 2008, Nice, France on June 20, 2008.
- 11. McGrew F, Johnson E, Coppess M, Charlton S, Sims J.J. Impact of Cardiac Resynchronization Therapy on Mortality Between 344 Male and Female Patients Greater than 75 Years of Age at a Single Center. Heart Rhythm, 15(5S):S384, 2008 May.
- 12. McGrew F, Johnson E, Coppess M, Charlton S, Sims J.J. Single Center Survival Benefit With Cardiac Resynchronization Therapy in 344 Elderly Patients. Heart Rhythm, 15(5S):S185, 2008 May.
- 13. Frank A. McGrew III, MD, Eric E. Johnson, MD, Mark A. Coppess, MD, Sandra B. Charlton, BSN and J. Jason Sims, Pharm.D. The Stern Cardiovascular Center, Memphis, TN, Medtronic, Inc., Minneapolis, MN, Medtronic, Moundsview, MN: Impact of Cardiac Resynchronization Therapy on Mortality Between 344 Male and Female Patients Greater than 75 Years at a Single Center; 29th Annual Scientific Sessions of the Heart Rhythm Society, May, 2008.
- 14. Frank A. McGrew III,MD, Eric E. Johnson, MD, Mark A. Coppess, MD, Sandra B. Charlton, BSN and J. Jason Sims, Pharm.D., The Stern Cardiovascular Center, Memphis, TN, Medtronic, Inc, Minneapolis, MN, Medtronic Moundsview, MN: Single Center Survival Benefit with Cardiac Resynchronization Therapy in 344 Elderly Patients; 29th Annual Scientific Sessions of the Heart Rhythm Society, May, 2008.
- 15. Sylevester E, Hoffmeister B, Johnson EE, Hess P, Malkin R: Defibrillation Causes Immediate Cardiac Dilation in Humans. <u>J Cardiovasc Electrophysiol</u> 2003; 14:832-836.
- 16. Saksena S, PrakashA, Ziegler P, Dappaf Investigators: Dual site pacing for atrial Fibrillation prevention: insights from the DAPPAF trial secondary analyses. Circulation 2001; 104:17
- 17. Cooper RAS, Johnson EE, Wharton JM: The improved efficacy of asymmetric biphasic waveforms for internal cardioversion of atrial fibrillation in human. <u>PACE</u> 1995; 18:401.
- 18. Cooper RAS, Johnson EE, Yarger MD, Sorrentino RA, Greenfield RA, Wharton JM: Comparison of multiple biphasic and monophasic waveforms for internal cardioversion of atrial fibrillation in humans. <u>Circulation</u> 1994; 90:1-13.

Abstracts - Continued

- 19. Murgatroyd FD, Johnson EE, Cooper RAS, Lau C, Alt E, Kappenburger LJ, Smith JM, Camm AJ, Wharton JM: Safety of low energy transvenous atrial defibrillation world experience. Circulation 1994; 90:1-14.
- 20. Johnson EE, Smith WM, Yarger MD, Cooper RAS, Broughton A, Wharton JM: Clinical predictor of low energy internal cardioversion of atrial fibrillation in humans. <u>PACE</u> 1994; 17:742.
- 21. Bayly PV, Johnson EE, Wolf PD, Smith WM, Ideker RE: Short-term predictability of epicardial potential fields in VF. <u>J Am Coll Cardiol</u> 1994; 152A.
- 22. Wharton JM, Merrill JJ, Johnson EE, Simonson JS, Greenfield RA, Sorrentino RA, Hamer ME: Radiofrequency ablation of atypical atrial flutter. <u>J Am Coll Cardiol</u> 1994; 341A.
- 23. Johnson EE, Yarger MD, Wharton JM: Monophasic and biphasic waveforms for low energy internal cardioversion of atrial fibrillation in humans. <u>Circulation</u> 1993; 88:1-592.
- 24. Wharton JM, Johnson EE, Merrill JJ, Sorrentino RA, Greenfield RA: Localization of the zone of slow conduction in patients with atypical atrial flutter. <u>Circulation</u> 1993; 88:1-583.
- 25. Shenasa H, Greenfield RA, Johnson EE, Sorrentino RA, Wharton JM: Does adenosine differentiate sinoatrial reentrant tachycardia from ectopic atrial Tachycardia? <u>Circulation</u> 1993; 88:1-396.
- 26. Blanchard SM, Johnson EE, Smith WM, Ideker RE: Activation mapping of ventricular fibrillation. Porch IEEE EMBS 1993; 15:861-862.
- 27. Johnson EE, Rollins DL, Wolf PD, Smith WM, Ideker R: Mechanism of ventricular Fibrillation as mapped with 524 closely spaced simultaneously recorded electrodes. Circulation 1992; 86:1-820.
- 28. Bayly PV, Johnson EE, Idriss SF, Ideker RE, Smith WM: Minimum electrode spacing for mapping ventricular fibrillation using spatial sampling theory. Computers in Cardiology 1992; 5-8.
- 29. Johnson EE, Hagler JA, Alferness CA, Swanson DK, Morgan CB, Ideker RE: efficacy of short and long monophasic and biphasic waveforms in internal and external defibrillation. American Hear Journal 1992; 124:836.

Abstracts - Continued

- 30. Johnson EE, Idriss SF, Melnick SB, Wolf PD, Smith WM, Ideker RE: Excitation during ventricular fibrillation in pigs mapped in a small area with high density electrodes. <u>PACE</u> 1992; 15:506.
- 31. Johnson EE, Idriss SF, Cabo C, Melnick SB, Smith WM, Ideker RE: Evidence that organization increases during the first minute of ventricular fibrillation in pigs mapped with closely spaced electrodes. <u>J Am Coll Cardiol</u> 1992; 19:90A.
- 32. Johnson EE, Idriss SF, Melnick SB, Wolf PD, Smith WM, Ideker RE: Conduction block during ventricular fibrillation in pigs mapped with closely spaced electrodes. Circulation 1991; 84:11-499.
- 33. Malkin RA, Johnson EE, Pilkinton TC, Ideker RE: Optimum Bayesian estimation of the 95 percent effective defibrillation dose. <u>Circulation</u> 1991; 84:11-611.
- 34. Johnson EE, Smith WM, Ideker RE: Defibrillation thresholds for single and successive biphasic shocks. Proc IEEE EMBS 1991; 13:762-763.
- 35. Malkin RA, Pilkington TC, Johnson EE, Ideker RE: Optimum estimation of the 95 percent effective defibrillation dose. <u>Proc IEEE EMBS</u> 1991; 13:758-759.
- 36. Johnson EE, Walcott GP, Melnick SB, Wolf PD, Smith WM, Ideker RE: Defibrillation efficacy for various delays between two successive biphasic shocks. PACE 1991; 14:715.

Publications:

- 1. Henrikson, Charles A, Sohail, M Rizwan, Acosta, Helbert, Johnson, Eric E, Rosenthal, Lawrence, Pachulski, Roman, Dan, Dan, Paladino, Walter, Khairallah, Farhat S. Gleed, Kent, Hanna, Ibrahim, Cheng, Alan, Lexcen, Daniel R, Simons, Grant R: Antibacterial Envelope Is Associated With Low Infection rates After Implantable Cardioverter-Defirillator and Cardiac Resynchronization Therapy Device Replacement Results of the Citadel and Centurion Studies. JACC: Clinical Electrophysiology, May 2017 DOI: 10.1016/j.jacep.2017.02.016
- 2. Johnson EE, Seide H, Hackett FK, Svinarich JT, Stark S, Irwin J, DeVille JB, Dan D, Lim H: A U.S. Multicenter Examination of the New Cryoballoon: Early Experience with Procedural Enhancements for the Treatment of Atrial Fibrillation. EP Lab Digest, May 2013
- 3. Sacks HS, Johnson EE: Adipokine Concentractions are Similar in Femoral Artery and Coronary Venous Sinus Blood: Evidence Against *In Vivo* Endocrine Secretion by Human epicardial Fat. Adipobiology 2009; 1:51-56.
- 4. Sylvester, E, Hoffmeister B, Johnson E, Hess P, Malkin R,: Defibrillation Causes Immediate Cardiac Dilation in Humans. <u>Journal of Cardiovascular Electrophysiology</u> 2003; 14:8 1045-3873.

Publications - Continued

- 5.Friedman P, Dijkman B, Warman E, Jewel AF Investigators: Atrial Therapies Reduce Atrial Arrhythmia Burden in Defrillator Patients. <u>Circulation</u> 2001; 1023-1028.
- 6.Malkin RA, Johnson EE: The Effect of Inducing Ventricular Fibrillation with 50-HZ Pacing Versus T Wave Stimulation on the Ability to Defibrillate. <u>Pacing and Clinical Electrophysiology</u> Vol. 21, No. 5, May 1998; pp 1093-1097.
- 7.Ideker RE, Walcott GP, Walcott KT, KenKnight BH, Johnson EE, Hillsley RE, Bayly PV: Mapping of ventricular Fibrillation. In Allessic MA, Froner M (eds): <u>Atrial and Ventricular Fibrillation</u>: <u>Mechanisms and Device Therapy</u>. Armonk, NY, Futura publishing Company, Inc. 1997; pp 63-79.
- 8.Blanchard SM, Johnson EE, Ideker RE: Myocardial activation at the onset of and during ventricular fibrillation. In Akhtar M, Myerburg RJ, Ruskin JN (eds): <u>Sudden Cardiac Death:</u> <u>Prevalence Mechanisms, and Approaches Diagnosis and Management</u>. Malvern PA, Williams & Wilkins, 1994, pp 128-143.
- 9. Wharton JM, Johnson EE: Catheter based atrial defibrillation. PACE 1994; 17:1058-1066.
- 10.Bayly PV, Johnson EE, Wolf PD, Greenside HS, Smith WM, Ideker RE: A Quantitative measurement of spatial order in ventricular fibrillation. <u>J Cardiovas Electrophysiol</u> 1993; 4:533-546.
- 11.Ideker RE, Wolf PD, Simpson EV, Johnson EE, Blanchard SM, Smith WM: The ideal cardiac mapping system. In Shenasa M, Borggrefe M, Breithardt G (eds): <u>Cardiac Mapping</u>. Mount Kisco, New York, Futura Publishing Company, Inc., 1993, pp 649-653.
- 12.Malkin RA, Burdick DS, Johnson EE, Pilkington TC, Swanson DK, Ideker RE: Estimating the 95 percent effective defibrillation dose. <u>IEEE Transactions on Biomedical Engineering</u>. 1993; 40:256-265.
- 13.Johnson EE, Alferness CA, Wolf PD, Smith WM, Ideker RE: Effect of pulse separation between two sequential biphasic shocks given over different lead configurations on ventricular defibrillation efficacy. <u>Circulation</u> 1992; 85:2267-2274.
- 14.Johnson EE, Ideker RE: Ventricular fibrillation: Update. In Fisch C, Surawicz B (eds): Cardiac Electrophysiology and Arrhythmias
- 15. Johnson EE, Seide H, Hackett FK, Svinarich JT, Stark S, Irwin J, DeVille JB, Dan D, Lim H: A U.S. Multicenter Examination of the New Cryoballoon: Early Experience with Procedural Enhancements for the Treatment of Atrial Fibrillation. <u>EP Lab Digest, May 2013</u>

Research Experience:

(Sub Investigator)

A Prospective, Randomized, Double-Blind, Double-Dummy Parallel-Group, Multicenter, Event-Drive, Non-Inferiority Study comparing the Efficacy and safety of Once-Daily Oral Rivaroxaban (BAY 59-7939) With Adjusted-Dose Oral Warfarin for the Prevention of Stroke and non-Central Nervous System Systemic Embolism in Subjects With Non-Valvular Atrial Fibrillation (ROCKET-Bayer Pharmaceutical)

(Sub Investigator)

A Phase IV trial to Assess the Effectiveness of Apixaban Compared with Usual Care Anticoagulation in Subjects with Non-Valvular Atrial Fibrillation Undergoing Cardioversion (EMANATE – Pfizer)

(Principal Investigator)

A Multi-center, Paralle-group, double-blind, Placebo-controlled, Randomized, Ascending Dose Trial to Determine the Safety, Tolerability, Pharmacokinectics and Efficacy of Intravenous Infusions of OPC-108459 Administered to Subjects with Paroxysmal and Persistent Atrial Fibrillation (CADENCE – Otsuka Pharmaceutical Development & Commercialization, Inc.)

(Investigator/Sponsor)

Implementation of a Protocol Utilizing Adaptive CRT in a Normal AV Conduction, CRT Non-Response Population at Generator Replacement (IMPROVE RESPONSE – Eric Johnson, MD)

(Principal Investigator)

 $AIGIS_{Rx}$ Anti-Bacterial Envelope and Custom Mesh to reduce major CRMD infection after cardiac rhythm management device (CRMD) replacement with a cardiac resynchronization therapy device (CRT) (Centurion – TRYX, Inc)

(Principal Investigator)

AIGIS_{Rx} Anti-Bacterial Envelope and Custom Mesh to reduce major CRMD infection after cardiac rhythm management device (CRMD) replacement an implantable cardioverter-defirillator (ICD) (CITADEL – TRYX, Inc)

(Principal Investigator)

SYMPLICITY AF - Medtronic

(Sub Investigator)

CRT Implant Strategy Using the lOngest Electrial Delay for Non-Left Bundle Branch Block Patients (ENHANCE – St Jude Medical)

(Sub Investigator)

Evaluation of ACUITYTMX4 Quadripolar coronary Venous Leads and RELIANCETM 4-FRONT Defibrillation Leads (NAVIGATE X4- Boston Scientific)

(Principal Investigator)

World-wide Randomized Antibiotic Envelope Infection Prevention Trial (WRAP-IT – Medtronic)

Research Experience-Continued

(Principal Investigator)

Sustained Treatment of Paroxysmal Atrial Fibrillation Post-Approval Study (STOP AF PAS – Medtronic, Inc)

(Principal Investigator)

MicraTM Transcatheter Pacing Study (MICRA – Medtronic)

(Principal Investigator)

MicraTM Transcatheter Pacing System Continued Access Study (MICRA CA – Medtronic)

(Sub Investigator)*

Tachy Prediction Download (TACHY PREDICTION – Medtronic)

(Sub Investigator)*

Stimulation of the Left Ventricular Endocardium for Cardiac Resynchronization Therapy in Non-Responders and Previously Untreatable Patients (SOLVE CRT – ebr Systems)

Prevention of Disease Progression by Cardiac Resynchronization Therapy in Patients with Asymptomatic or Mildly Symptomatic Left Ventricular Dysfunction (REVERSE Trial – Medtronic).

Search A V Extension and Managed Ventricular Pacing for Promoting Atrioventricular Conduction (SAVE PACe Trial – Medtronic).

Chronicle Offers Management to Patients with Advanced Signs and Symptoms of Heart Failure (COMPASS-HF Trial – Medtronic).

Resynchronization Therapy In Normal QRS (RETHINQ Trial—St Jude Medical).

Sudden Cardiac Death in Heart Failure Trial. Randomized Trial for the Prevention of Cardiac Death (SCD—HeFT Trial –Medtronic/NHLB Institute).

Comparison of Medical Therapy, Pacing, and Defibrillation in Chronic Heart Failure (COMPANION Trial – Boston Scientific).

Inhibition of Unnecessary RV Pacing with A V Search Hysteresis in ICDs (INTRINSIC RV Trial – Boston Scientific).

Research studies conducted by Dr. Eric E. Johnson

"Geometry of the Ventricles During Fibrillation and Defibrillation

Atrial Conversion Efficacy with Delay Trial (ACED-AF)

Medtronic Model 7250 Arrhythmia Management Device (AMD)."

Research Experience-Continued

Attain® AbilityTM Model 4196 Left Ventricular Lead

Attain® StarFixTM Model 4195 Left Ventricular Lead

Characterization of Interventricular Conduction Measurements

"COMPASS-HF (Chronicle® Offers Management to Patients with Advanced Signs and Symptoms of Heart Failure)"

Dual Site Atrial Pacing Study of the Prevention of Atrial Fibrillation" ("DAPPAF")

<u>Genetic Arrhythmia Markers for Early detection (GAME)</u>

"InSync™ ICD: Clinical Study Evaluating Cardiac Resynchronization Therapy for Heart Failure Patients with ICD Indications"

Clinical Investigation of Model 3830 Pacing Lead"

Evaluating the Use of the <u>Mag</u>netic <u>Navigation</u> in Placing Medtronic Over-the-Wire Coronary Sinus Leads (MagNav)

"InSync III MarquisTM CRT and ICD System (Model 7279)"

"Microvolt T Wave AlternanS TEsting for Risk Stratification of Post MI Patients (MASTER)"

System Longevity Study

Resynchronization/Defibrillation for Ambulatory Heart Failure Trial (RAFT)

"REsynchronization reVErses Remodeling in Systolic left vEntricular dysfunction (REVERSE)"

<u>Comparison of Exercise Capacity Among Patients Implanted with Pacing Leads in the Right</u> Ventricular Apex Versus the Right Ventricular Outflow Tract

SAVE PACe – Search AV Extension for Promoting Atrioventricular Conduction"

Sensory Perception of Atrial Pacing Therapies in Gem III AT Patients

Short Interval Diagnostics Study

ST Segment Detection Study (ST Detect

"Sustained Treatment of Paroxysmal Fibrillation Post-Approval Study (STOP AF PAS)" TRENDS

Research Experience-Continued

Unipolar Ring / Coil Sensing Study (Gem DR and Gem II DR)

DEfibrillators To REduce Risk by MagnetIc ResoNance Imaging Evaluation

Left Atrial Pressure Monitoring to Optimize Heart Failure Therapy Study (LAPTOP-HF).

Optimal Lead Placement for AF Suppression

"Required Defibrillation Voltage for Two Defibrillation Waveforms Utilizing a Different Tilt":

Resynchronization Therapy In Normal QRS (RETHINQ)

Evaluation of Atrial Arrhythmias Utilizing the Onset Electrogram - Capability of DISCOVERY II and VENTAK PRIZM/PRIZM 2 AICD Field Following "Comparison of Medical Therapy, Pacing, and Defibrillation in Chronic Heart Failure (COMPANION)"

"CONTAK® RENEWAL™ 3 AVT® Consisting of Model: M150/M155/M157/M159 CONTAK RENEWAL 3 AVT Model 2893 CONSULT Software Application Model 2930 Partner Rhythm Assistant Model 4514-4520/4542-4544 EASYTRAK® 2 Coronary Venous Dual Electrode Pace/Sense Lead" Cardiac Resynchronization Therapy in Heart Failure Patients with Preserved Ejection Fraction

<u>(CRT-PEF)</u>"

Guidant EASYTRAK 4 STEERABLE LV Lead Models 4554/4555/4556 Stylet/OTW Steroid Eluting, Coronary Venous Bipolar Pace/Sense Lead

EASYTRAK® 3 Model 4522/4524/45254527 Spiral Fixation Coronary Venous Bipolar Pace/Sense Lead CONTAK RENEWAL 3 Model H173 with Model 2845 Consult Software Application v2.1

"Inhibition of Unnecessary RV Pacing with AV Search Hysteresis in ICDs" (INTRINSIC RV Longitudinal Surveillance Registry of the ACUITYTM Spiral Lead

Multicenter Automatic Defibrillator Implantation Cardiac Resynchronization Therapy Trial (MADIT-CRT)

ENDOTAK RELIANCE® G Evaluation of Handling and Electrical Performance (REFLEx)

"VITALITY VR/DR and VITALITY + DR Implantable Cardioverter Defibrillator with the Automatic Intrinsic RHYTHM ID Algorithm