

## CURRICULUM VITAE

- I. **COMPLETE NAME** Hiroshi Nakagawa, M.D., Ph.D.
- II. **EDUCATION**
- |                               |   |           |
|-------------------------------|---|-----------|
| Research Fellow               | University of Oklahoma HSC<br>Oklahoma City, OK   | 1991-1993 |
| Ph.D. (Cardiac Physiology)    | Post Graduate School of Medicine<br>Hiroshima University School of Medicine<br>Hiroshima, Japan | 1987-1991 |
| Residency (Cardiology)        | National Cardiovascular Center<br>Osaka, Japan  | 1983-1986 |
| Residency (Internal Medicine) | Hiroshima University School of Medicine<br>Hiroshima, Japan                                     | 1981-1983 |
| M.D.                          | Hiroshima University School of Medicine<br>Hiroshima, Japan                                     | 1981      |
- III. **PROFESSIONAL**
- ACADEMIC:**
- |   |                |
|---|----------------|
| Professor of Medicine<br>University of Oklahoma Health Sciences Center, Oklahoma City, OK   | 2007 - present |
| Director, Translational Electrophysiology<br>University of Oklahoma Health Sciences Center, Oklahoma City, OK                                 | 2007 - present |
| Co-Director, Heart Rhythm Institute/Cardiac Arrhythmia Research Institute<br>University of Oklahoma Health Sciences Center, Oklahoma City, OK | 2007 - present |
| Professor of Medicine Research<br>University of Oklahoma Health Sciences Center, Oklahoma City, OK  | 2005 - 2007    |
| Associate Professor of Medicine Research<br>University of Oklahoma Health Sciences Center, Oklahoma City, OK                                  | 1999 - 2005    |
| Assistant Professor of Medicine Research<br>University of Oklahoma Health Sciences Center, Oklahoma City, OK                                  | 1994 - 1999    |
| Research Associate<br>University of Oklahoma Health Sciences Center, Oklahoma City, OK  | 1993 - 1994    |

IV. **CERTIFICATION OR BOARD STATUS**

National Board of Medical Examiners in Japan	1981
Board of Internal Medicine in Japan	1991
Board of Cardiology in Japan	1994

V. **LICENSES**

**Active:**

Japanese Medical Licensure	1981
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VI. **RESEARCH AND SCHOLARSHIP**

**Research Grants and Contracts**

**Pending:**

None

**Active:**

Source: Biotronik, Inc.

Project Title: Evaluation of a Novel Gold Tip Radiofrequency Catheter for Prevention of Coagulum Formation

Period: 03/01/08 – 12/31/09

Funding: \$58,800

Principal Investigator: **Hiroshi Nakagawa, MD, PhD (2%)**

The purpose of the proposed animal study is to determine if a novel gold tip ablation catheter can produce continuous linear lesions without thrombus formation in the canine thigh muscle preparation and in beating hearts.

Source: Voyage Medical, Inc.

Project Title: Novel saline electrode ablation catheter incorporated with endoscopy for linear atrial ablation

Period: 05/01/08 – 05/31/2010

Funding: \$100,000

Principal Investigator: **Hiroshi Nakagawa, MD, PhD (2%)**

The purpose of the proposed animal study is to determine a novel saline electrode ablation catheter combined with endoscopy can produce continuous linear lesions in the canine thigh muscle preparation and in beating hearts.

Source: Mayo Clinic

Project Title: A novel radiofrequency ablation catheter for prevention of coagulum formation

Period: 05/01/08 – 05/31/2010

Funding: \$100,000

Principal Investigator: **Hiroshi Nakagawa, MD, PhD (2%)**

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The purpose of the proposed animal study is to determine a novel ablation catheter can produce continuous linear lesions without thrombus formation in the canine thigh muscle preparation and in beating hearts.

Source: St. Jude Medical, AF Division

Project Title: Evaluation of the Novel Neptune Catheter (High-Resolution Irrigated Ablation Catheter) in the Canine Thigh Muscle Preparation and In Vivo Hearts

Period: 06/01/08 – 06/30/09

Funding: \$40,000

Principal Investigator: **Hiroshi Nakagawa, MD, PhD (2%)**

The purpose of the proposed is to evaluate a novel catheter that uses a flow of saline through the catheter, which cools the tip, allowing the use of higher power for catheter ablation while maintaining high-resolution mapping capability. The higher power will increase the depth of the ablation lesion and may increase the chance to eliminate arrhythmias.

Source: St. Jude Medical, AF Division

Project Title: Prevention of Left Atrial Fistula after Radiofrequency Ablation of Left Atrium

Period: 03/01/08 – 02/28/11

Funding: \$100,000

Principal Investigator: **Hiroshi Nakagawa, MD, PhD (2%)**

This study will test a new technology which may prevent esophageal injury related to catheter ablation procedures for the treatment of patients with arrhythmias (abnormal heart rhythm), i.e. atrial fibrillation. A novel esophageal cooling balloon catheter will be tested in this study, which cools the esophageal wall to prevent its injury, when radiofrequency catheter ablation is performed in the left atrium very close to the esophagus.

Source: St. Jude Medical, AF Division

Project Title: Evaluation of the novel "high resolution irrigated ablation catheter" in the canine thigh muscle preparation and *in vivo* hearts

Period: 02/01/08 – 02/28/09

Funding: \$157,076

Principal Investigator: **Hiroshi Nakagawa, MD, PhD (2%)**

This study will test a new novel catheter which uses a flow of saline through the catheter, which cools the tip, allowing the use of higher power for catheter ablation. The higher power will increase the depth of the ablation lesion and may increase the chance to eliminate arrhythmias

Source: ProRhythm, Inc

Project Title: A novel ultrasound ablation catheter for linear atrial lesions

Study Period: 02/01/08 – 01/31/09

Funding: \$100,000

Principal Investigator: **Hiroshi Nakagawa, MD, PhD (2%)**

The purpose of the proposed animal study is to determine optimal application parameters for a novel ultrasound catheter ablation system to produce continuous linear lesions without thrombus formation in the canine thigh muscle preparation and in beating hearts. Ultrasound technology is unique energy source for ablation which does not require direct contact with the target tissue.

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Source: NIH/NHLBI 1K23 HL0699 72-01-A1

Project Title: Determinants of Catheter Ablation Failure

Study Period: 01/01/03-12/01/08

Funding: Total costs \$495,700

Principal Investigator: Sunny S. Po, MD

Co-Investigator: **Hiroshi Nakagawa, MD, PhD** (5%)

This project will utilize our extensive patient database to determine the reasons for failed catheter ablations

Source: Biosense Webster

Project Title: Training of physicians in the use of a computerized electrophysiology monitoring and catheter locating system

Study Period: 10/01/05 – 10/09/09

Funding: \$231,316

Principal Investigator: **Hiroshi Nakagawa, MD, PhD** (2%)

This study is designed to train physicians (cardiac electrophysiologists) to use a new electrophysiology mapping and catheter ablation system to allow cardiac mapping requiring no or minimized use of x-ray fluoroscopy, thereby reducing radiation exposure to patients and physicians. The 3D electro-anatomical mapping system (CARTO XP, Biosense Webster, Inc) is a computerized electrophysiologic catheter system which gives the exact 3D location of the catheter tip within a magnetic field in the heart without x-ray.

Source: Biosense Webster

Project Title: Evaluation of efficacy and safety of a fast mapping system

Study Period: 02/22/01 – 12/31/09

Funding: \$231,317

Principal Investigator: **Hiroshi Nakagawa, MD, PhD** (2%)

This study determines the accuracy of a novel fast mapping system (combination of sequential contact multi-electrode catheter mapping).

Source: CryoCor, Inc

Project Title: The incidence of electrical reconnection between the left atrium and pulmonary vein after pulmonary vein isolation procedure: Comparison between cryo-thermia and radiofrequency ablation in a canine model

Study Period: 03/01/07 – 02/28/09

Funding: \$109,284

Principal Investigator: **Hiroshi Nakagawa, MD, PhD** (2%)

This study will test a new technology a novel cryo-thermia ablation catheter which will be used to treat patients with arrhythmias (abnormal heart rhythm), i.e., atrial fibrillation (AF). We will determine whether a cryo-thermia ablation catheter can produce electrical isolation between the left atrium and the pulmonary vein and examine the incidence of electrical re-connection between the left atrium and the pulmonary vein after successful pulmonary vein isolation procedures.

Source: ProRhythm, Inc

Project Title: Evaluation of a novel esophageal cooling balloon catheter to prevent left atrial-esophageal injury during pulmonary vein isolation procedures using radiofrequency current and high intensity focused ultrasound (HIFU) in a canine model

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Study Period: 02/01/05 – 01/31/09

Funding: \$100,000

Principal Investigator: **Hiroshi Nakagawa, MD, PhD (2%)**

This study will test a new technology which may prevent esophageal injury related to catheter ablation procedures for the treatment of patients with arrhythmias (abnormal heart rhythm), i.e. atrial fibrillation. A novel esophageal cooling balloon catheter will be tested in this study, which cools the esophageal wall to prevent its injury, when catheter ablation is performed in the left atrium very close to the esophagus.

Source: AtriCure, Inc.

Project Title: Thorascopic catheter ablation using a canine model

Study Period: 01/31/07 – 02/01/09

Funding: \$51,083

Principal Investigator: **Hiroshi Nakagawa, MD, PhD (1%)**

The purpose of this study is to test a new technology which may cure patients with arrhythmias. A novel thorascopic catheter will be used to access the pericardial space to position an ablation catheter at the epicardial surface of the heart. Radiofrequency energy will be applied to destroy the abnormal tissues to cure arrhythmias. This approach will avoid the present introduction of the catheters into the heart and/or avoid multiple openings in the chest to terminate the abnormal heart rhythm disorders.

Source: Cardiofocus, Inc

Project Title: Evaluation of a novel endoscopic laser balloon ablation catheter in a canine model

Period: 01/31/07 – 12/31/08

Funding: \$189,277

Principal Investigator: **Hiroshi Nakagawa, MD, PhD (2%)**

The purpose of this study is to train clinical investigators in the use of the Laser Light Ring Balloon Ablation system prior to the start of human clinical trials.

Source: St. Jude Medical, AF Division

Project Title: Evaluation of the novel "pure external" cooling ablation catheter in the canine model

Period: 02/27/07 – 02/28/09

Funding: \$91,224

Principal Investigator: **Hiroshi Nakagawa, MD, PhD (2%)**

This study will test a new novel catheter which uses a flow of saline through the catheter, which cools the tip, allowing the use of higher power for catheter ablation. The higher power will increase the depth of the ablation lesion and may increase the chance to eliminate arrhythmias.

Source: EndoSense, Inc

Project Title: Evaluation of a novel contact sensor catheter for radiofrequency ablation in a canine model

Period: 10/01/05 – 09/30/08

Funding: \$72,639

Principal Investigator: **Hiroshi Nakagawa, MD, PhD (2%)**

The aim of this study to examine a new catheter which will be used for a treatment of cardiac rhythm disorders. The new ablation catheter has a new sensor to control contact force of the catheter to produce constant contact between the catheter and the surface of the heart. This study will

determine the relationship between strength of contact force and ablation lesion size with different incident angles, and determine relationship between catheter contact force and the incidence of a steam pop in the canine model.

**Past/Completed:**

Source: Presbyterian Health Foundation Bridge Grant

Project Title: The Role of Surviving Myocardial Bundles within the Infarct Scar in Ischemia Induced Ventricular Tachycardia/Fibrillation

Study Period: 10/01/04-9/30/05

Funding: Total costs \$60,000

Principal Investigator: **Hiroshi Nakagawa, MD, PhD**

Co-Investigator: Phil Adamson, MD, Warren M. Jackman, MD, Ralph Lazzara, MD

This study examined the relationship between isolated late ventricular potential and the occurrence of ventricular tachycardia/fibrillation during acute ischemia.

Source: American Heart Association – Heartland Affiliate (Grant-in Aid)

Project Title: Prevention of Post-Infarction Sudden Cardiac Death during Acute Ischemia by Catheter Ablation

Study Period: 07/31/03-06/30/05

Funding: Total costs \$110,000

Principal Investigator: **Hiroshi Nakagawa, MD, PhD**

Co-Investigator: Phil Adamson, MD, Warren M. Jackman, MD, Ralph Lazzara, MD, Jaques MT deBakker, PhD

This study examined the relationship between isolated late ventricular potential and the occurrence of ventricular tachycardia/fibrillation during acute ischemia.

Source: AtriCure, Inc.

Project Title: Evaluation of the AtriCure Bipolar Linear Ablation Catheter in the Canine Thigh Muscle Preparation and *In Vivo* Hearts

Study Period: 01/01/03 – 01/14/05

Funding: \$46,500

Principal Investigator: **Hiroshi Nakagawa, MD, PhD**

The purpose examined whether the bipolar linear RF ablation catheter can produce a linear transmural lesion without coagulum formation in the canine thigh muscle and in beating hearts.

Source: Stereotaxis, Inc.

Project Title: Evaluation of catheter contact force during ablation using a novel magnetic navigation system

Study Period: 02/22/01 – 02/28/05

Funding: \$50,000

Principal Investigator: **Hiroshi Nakagawa, MD, PhD**

This study examined the relationship between strength of magnetic field and catheter contact force with different incident angles and determines the relationship between catheter contact and radiofrequency lesion size in the canine thigh muscle preparation and *in vivo* hearts.

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Source: Endocardial Solutions, Inc

Project Title: Evaluation of accuracy of the non-contact balloon mapping system (EnSite)

Study Period: 10/22/01 – 06/30/04

Funding: \$66,000

Principal Investigator: **Hiroshi Nakagawa, MD, PhD**

This study examined whether discrete subendocardial potentials from the left bundle (Purkinje potentials) can be mathematically reconstructed using the non-contact balloon mapping system.

Source: Bard Electrophysiology

Project Title: *In vivo* investigation of radiofrequency lesion generation using an expandable mesh electrode catheter in a canine model

Study Period: 09/25/01 – 08/13/04

Funding: \$252,000

Principal Investigator: **Hiroshi Nakagawa, MD, PhD**

This study investigated the safety and efficacy of an expandable mesh electrode catheter to isolate the pulmonary vein musculatures for treatment of atrial fibrillation.

Source: Irvine Biomedical, Inc.

Project Title: Evaluation of the ultrasound balloon ablation system in the canine thigh muscle preparation and *in vivo* hearts

Study Period: 11/27/01 – 08/13/04

Funding: \$15,000

Principal Investigator: **Hiroshi Nakagawa, MD, PhD**

This study investigated the safety and efficacy of an ultrasound balloon catheter to isolate pulmonary vein musculatures for treatment of atrial fibrillation.

Source: CATHEFFECTS, Inc

Project Title: Evaluation of the Vector mapping catheter (Desai VectorCath) in catheter ablation of canine thigh muscle preparation and *in vivo* hearts

Study Period: 01/31/03 – 02/01/04

Funding: \$11,901

Principal Investigator: **Hiroshi Nakagawa, MD, PhD**

This study investigated whether a phased RF current application using the Desai VectorCath Mapping Catheter can produce deeper RF lesions without coagulum formation.

Source: Bayless Medical

Project Title: Evaluation of the Novel Radiofrequency Transeptal Perforation Catheter System in the Canine Thigh Muscle Preparation and *In Vivo* Hearts

Study Period: 09/18/03 – 09/17/05

Funding: \$26,500

Principal Investigator: **Hiroshi Nakagawa, MD, PhD**

This study investigated whether the bipolar linear RF ablation catheter can produce a linear transmural lesion without coagulum formation in the canine thigh muscle and in beating hearts.

Source: NIH/NHLBI R01-HL66394:

Project Title: Neural Mechanisms of Ventricular Electrical Remodeling

Study Period: 10/1/00-09/30/04

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Funding: Total costs \$1,006,999

Principal Investigator: Phil Adamson, MD

Co-Investigator: **Hiroshi Nakagawa, MD, PhD**

This project studied the relationship between left ventricular repolarization and ventricular fibrillation using a canine sudden cardiac death model

Source: Oklahoma Health Research Program (OCAST) (AR6-059)

Title: Prevention of Post-Infarction Sudden Death by Ablation

Study Period: 12/01/96 - 11/30/98

Funding: Total direct costs \$148,110

Principal Investigator: Warren M. Jackman, M.D.

Co-Investigators: Kenichiro Otomo, M.D., Mauricio Arruda M.D. **Hiroshi Nakagawa MD, PhD.**, Ralph Lazzara M.D., Benjamin Scherlag, Ph.D., Eugene Patterson, Ph.D., Stephan Hull, Ph.D., Jan V. Pitha, M.D., Ph.D.

### **Funded Clinical Studies:**

NAVI-STAR® *Thermo-Cool*™ Catheter for Endocardial Radiofrequency Ablation in Patients with Ventricular Tachycardia (Sponsor: Biosense Webster, Inc, **Co-PIs** Jackman, **Nakagawa**), IRB Approval Date: *April 2007*

Pivotal Clinical Study of the CardioFocus Endoscopic Ablation System (CF-EAS) for the Treatment of Symptomatic Atrial Fibrillation (Sponsor: CardioFocus, Inc, **Co-PIs** Jackman, **Nakagawa**), IRB Approval Date: *April 2006*

Early Detection and Treatment of Esophageal Injury after Catheter Ablation for Atrial Fibrillation (Sponsor: CARI, **PI**, Beckman KJ, **Co-Investigator Nakagawa**), IRB approved December 2006

A Clinical Study for the Assessment of Safety and Efficacy of the High Intensity Focused Ultrasound (HIFU II) System for the Treatment of Atrial Fibrillation (Sponsor: ProRhythm, Inc, **Co-PIs Nakagawa**, Jackman), IRB Approval Date: May 10, 2006

VERITAS Ventricular Electroanatomical Mapping to Assess the Risk of Life Threatening Arrhythmias (Sponsor: Biosense Webster, Inc, **Co-PIs** Jackman, **Nakagawa**), IRB Approval Date: January 22, 2004

Comparison of the Safety and Efficacy of Catheter Ablation of Atrial Fibrillation Between Pulmonary Vein Isolation Alone (Conventional Approach) and Pulmonary Vein Isolation Combined with Endocardial Ablation of Autonomic Ganglia Adjacent to the Pulmonary Veins (Sponsor: CARI, **Co-PIs** Jackman, **Nakagawa**), IRB Approval Date: January 29, 2004

A Clinical Study for the Assessment of Safety and Efficacy of the High Intensity Focused Ultrasound (HIFU) System for Pulmonary Vein Isolation (Sponsor: ProRhythm, Inc, **Co-PIs Nakagawa**, Jackman), IRB Approval Date: January 26, 2004



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ACES Next Generation CARTO System Evaluation (Sponsor: Biosense Webster, *Co-PIs: Nakagawa, Jackman*), IRB Approval Date: July 1, 2003

Feasibility Study for Using Deflectable Irrigated Tip Electrode Catheter for Radiofrequency Ablation of Accessory Pathways in Patients with Prior Ablation Failure (Sponsor Biosense Webster, Inc, PI Jackman, *Co-Investigator Nakagawa*), IRB Approval Date: December 1, 2003

Long Term Follow-Up of Patients Undergoing Catheter Ablation (Sponsor: CARI, *Co-PIs Nakagawa, Jackman*), IRB Approval Date: August 25, 2003

ATTRAC Arrhythmia Treatment with a Thermocouple Radiofrequency Ablation Catheter (ATTRAC) Study (Sponsor: Biosense Webster, PI Beckman, *Co-Investigator Nakagawa*), IRB Approval Date: November 25, 2002

Evaluation of P Wave Morphology Using New QRS-T Wave Subtraction Software (Sponsor: CARI, *PI Nakagawa*), IRB Approval Date: August 12, 2001

Radiofrequency Catheter Ablation of Macroreentrant Left and Right Atrial Tachycardia and Non-Macroreentrant Left Atrial Tachycardia Using a Saline Irrigated Electrode Catheter (Sponsor: Biosense Webster, Inc, *Co-PIs Jackman, Nakagawa*), IRB Approval Date: September 21, 2000

NAVI-STAR® *Thermo-Cool*™ Catheter for Ablation of Atrial Fibrillation (Sponsor: Biosense Webster, Inc, *Co-PIs Jackman, Nakagawa*), IRB Approval Date: July 16, 2001

## Teaching Materials

Course Syllabus "Advanced Course for Radiofrequency Catheter Ablation of Cardiac Arrhythmias" Sponsored by the Cardiac Arrhythmia Research Institute at the University of Oklahoma Health Sciences Center, Oklahoma City, OK

## Other Scholarly Activities and Creative Achievements

Nakagawa H, Fred Wittkampf, PhD, **US Patent # P66372NL00**: Catheter and Methods, In Particular for Ablation and Like Technique (Novel Irrigated Radiofrequency Ablation Electrode, Filed 10/29/03)

## VII. PUBLICATIONS

### Peer Reviewed Publications (Refereed journals)

1. Yokoyama K, *Nakagawa H*, Shah DC, Lambert H, Leo G, Aeby N, Ikeda A, Pitha JV, Sharma T, Lazzara R, Jackman WM. Novel contact force sensor incorporated in irrigated radiofrequency ablation catheter predicts lesion size and incidence of steam pop, and thrombus. *Circulation* 2008; Accepted for publication

2. Yokoyama K, **Nakagawa H**, Seres KA, Jung E, Merino J, Zou Y, Ikeda A, Pitha JV, Lazzara R, Jackman WM. Canine model of esophageal injury and atrial-esophageal fistula after application of forward firing high-intensity focused ultrasound and side-unfocused ultrasound in the left atrium and inside the pulmonary vein. *Circulation* 2008; Accepted for publication
3. **Nakagawa H** and Jackman WM. Catheter ablation of paroxysmal supraventricular tachycardia. *Circulation* 2007;116:2465-78
4. Arruda MS, He DS, Friedman P, **Nakagawa H**, Bruce C, Azegami K, Anders R, Kozel P, Chiavetta A, Marad P, MacAdam D, Jackman WM, Wilbur DJ. A novel mesh electrode catheter for mapping and radiofrequency delivery at the left atrium-pulmonary vein junction. *J Cardiovasc Electrophysiol* 2007;18:206-211
5. **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;18:136-134
6. Wittkampf FHM and **Nakagawa H**. RF catheter ablation: lessons in lesions. *Pacing Clin Electrophysiol* 2006;29:1285-1297
7. Yokoyama K, **Nakagawa H**, Wittkampf FHM, Pitha JV, Lazzara R, Jackman WM. Comparison of electrode cooling between internal and open irrigation in radiofrequency ablation lesion depth and incidence of thrombus and steam pop. *Circulation* 2006; 113:11-19
8. Aoyama H, **Nakagawa H**, Pitha JV, Khammar G, Chandrasekaran K, Matsudaira K, Yagi T, Yokoyama K, Lazzara R, Jackman WM. Comparison of cryothermia and radiofrequency current in safety and efficacy of catheter ablation within the canine coronary sinus close to the left circumferential coronary artery. *J Cardiovasc Electrophysiol* 2005;16:1-9
9. **Nakagawa H**, Jackman WM. Para-Hisian pacing: Useful clinical technique to differentiate retrograde conduction between accessory atrioventricular pathways and atrioventricular nodal pathways. *Heart Rhythm* 2005; 2:667-672
10. Wittkampf FHM, **Nakagawa H**, Foresti S, Aoyama H, Jackman WM. Saline irrigated radiofrequency ablation electrode with external cooling. *J Cardiovasc Electrophysiol* 2005;16:323-328
11. **Nakagawa H**, Aoyama H, Beckman KJ, Po SS, Wu R, Lockwood D, Spector P, Calame JD, Lustgarten DL, Hasdemir C, Singh D, Herring L, Lazzara R, Jackman WM. Relationship between pulmonary vein firing and extent of left atrial-pulmonary vein connection in patients with atrial fibrillation. *Circulation* 2004;109:1523-1529
12. Tan H, Wittkampf FHM, **Nakagawa H**, Derksen R. Atriofascicular accessory pathway. *J Cardiovasc Electrophysiol*. 2004;15:118
13. Matsudaira K, **Nakagawa H**, Wittkampf FHM, Yamanashi WS, Imai S, Pitha JV, Lazzara R, Jackman WM. High incidence of thrombus formation *without* impedance rise during

radiofrequency ablation using electrode temperature control. *Pacing Clin Electrophysiol* 2003; 26:1227-1237

14. Swann MH, **Nakagawa H**, Vanoli E, Lazzara R, Schwartz PJ, Adamson PB. Heterogeneous regional endocardial repolarization is associated with increased risk for ischemia-dependent ventricular fibrillation after myocardial infarction. *J Cardiovasc Electrophysiol* 2003; 14:873-879
15. **Nakagawa H**, Jackman WM, Scherlag BJ, Lazzara R. Pulmonary vein isolation during atrial fibrillation: Insight into the mechanism of pulmonary vein firing. *J Cardiovasc Electrophysiol* 2003; 14:261-262
16. Demonlin JM, Erick OJ, Munch K, Koullick E, **Nakagawa H**, Wittkamp FHM. Soft thrombus formation in radiofrequency catheter ablation. *Pacing Clin Electrophysiol* 2002;25:1219-1222
17. **Nakagawa H**, Jackman WM. Catheter ablation of macroreentrant atrial tachycardia in patients following atriotomy. *Eur Heart J*. 2002;20:1566-1568
18. Sun Y, Arruda MS, Otomo K, Beckman KJ, **Nakagawa H**, Calame J, Po S, Spector P, Lustgarten D, Herring L, Lazzara R, Jackman WJ: Coronary sinus-ventricular accessory connections producing posteroseptal and left posterior accessory pathways: incidence and electrophysiological identification. *Circulation* 2002;106:1362-1367
19. Brunckhorst CB, Stevenson WG, Jackman WJ, Kuck KH, Soejima K, **Nakagawa H**, Cappato R, Ben-Haim SA: Ventricular mapping during atrial and ventricular pacing: relation of multipotential electrograms to ventricular tachycardia reentry circuits after myocardial infarction. *Eur Heart J* 2002;23:1131-1138
20. **Nakagawa H**, Shah N, Matsudaira K, Overholt E, Chandrasekaran K, Beckman KJ, Spector P, Calame JD, Rao A, 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 scars allow "focal" ablation. *Circulation* 2001;103:699-709
21. Otomo K, Gonzalez M, Beckman KJ, **Nakagawa H**, Becker AE, Shah N, Arruda MS, Matsudaira K, Wang Z, Imai S, Lazzara R, Jackman WM: Reversing the direction of paced ventricular and atrial wavefronts reveals an oblique course in accessory AV pathways and improves localization for catheter ablation. *Circulation* 2001;104:550-556
22. Antz M, Otomo K, **Nakagawa H**, Yamanashi W, Jackman WM, Kuck KH: Radiofrequency catheter ablation with the split-tip electrode in the temperature-controlled mode. *Pacing Clin Electrophysiol* 2001;24:1765-1773
23. Schauerte P, Scherlag BJ, Patterson E, Scherlag MA, Matsudaira K, **Nakagawa H**, Jackman WM, Lazzara: Focal Atrial Fibrillation: Experimental evidence for a pathophysiological role of the autonomic nervous system. *J Cardiovascular Electrophysiol* 2001;12:592-599

24. **Nakagawa H**, Jackman WM. Use of a 3-dimensional electroanatomical mapping system for catheter ablation of macroreentrant right atrial tachycardia following atriotomy. *Journal of Electrocardiology* 1999;32:16-21
25. Goya M, Takahashi A, **Nakagawa H**, Iesaka Y. A case of catheter ablation of accessory atrioventricular connection between the right atrial appendage and right ventricle guided by a three-dimensional electroanatomical mapping system. *J Cardiovasc Electrophysiol* 1999;10:1112-1118
26. **Nakagawa H**, Wittkampf FHM, Yamanashi WS, Pitha JV, Imai S, Campbell B, Arruda M, Lazzara R, Jackman WM: Inverse relationship between electrode size and lesion size during radiofrequency ablation with active electrode cooling. *Circulation* 1998;98:458-465
27. **Nakagawa H**, Jackman WM: Use of a 3-dimensional, nonfluoroscopic mapping system for catheter ablation of typical atrial flutter. *Pacing Clin Electrophysiol* 1998;21:1279-1286
28. 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 Electrophysiology* 1998;9:2-12
29. Otomo K, Yamanashi WS, Tondo C, Antz M, Bussey J, Pitha JV, Arruda MS, **Nakagawa H**, Wittkampf FHM, Lazzara R, Jackman WM: Why a large tip electrode makes a deeper radiofrequency lesion: effects of increased in electrode cooling and electrode-tissue interface area. *J Cardiovasc Electrophysiology* 1998;9:47-54
30. Soejima K, Mitamura H, Miyazaki T, Miyoshi S, Murata M, Sato T, Shinagawa K, Takatsuki S, Ogawa S, **Nakagawa H**. Catheter ablation of accessory atrioventricular connection between right atrial appendage to right ventricle. *J Cardiovasc Electrophysiol* 1998;9:523-528
31. Wittkampf FHM, **Nakagawa H**, Yamanashi WS, Imai S, Jackman WM: Thermal latency in radiofrequency ablation. *Circulation* 1996;93:1083-1086
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Accessory Pathway Potentials in Patients Undergoing Repeat RF Catheter Ablation After Failed Initial Procedure. *PACE* 1993, 16:865. Presented at the North American Society of Pacing and Electrophysiology, May 1993

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### Editorials

1. *Nakagawa H*, Seres KA, Jackman WM: Limitations of esophageal temperature-monitoring to prevent esophageal injury during atrial fibrillation ablation. *Circ Arrhythmia Electrophysiol.* 2008;1:150-152.
2. *Nakagawa H*, Jackman WM: Catheter ablation of macroreentrant atrial tachycardia in patients following atriotomy. *Eur Heart J* 2002;23:1566-1568

### Original Invited Lectures

**Symposium:** First Annual Conference of Europe AF, London, UK, 06/15-16, 2008

**Chairman:** Video demonstration of new and investigational technologies

**Lecture:** Percutaneous interventional therapies: How to best accomplish them: What to expect today? - Autonomic modification

**Symposium:** The 23rd Annual Scientific Meeting of the Japanese Heart Rhythm Society. 5/31-6/01/2008, Yokohama, Japan

**Lecture:** Approval Process of New Devices in US

**Lecture and Chairman:** "Unknown Tracings of EPS"

**Lecture:** High-Intensity Focused Ultrasound Balloon Catheter for Ablation in Patients with Atrial Fibrillation.

**Lecture:** Progress of GP Ablation in Patients with Atrial Fibrillation

**Symposium:** 29th Annual Scientific Sessions of the Heart Rhythm Society, San Francisco, CA, 5/14-17/2008

**Lecture:** Mini-Course: Ablative approach to left atrial tachycardia: 3-D Mapping

**Lecture:** Core Curriculum: Balloon based PV isolation: High focused Ultrasound

**Chairman:** Non-ischemic VT/VF: From cell to bedside (Joint session: Coalition of Organizations in Pacing & Electrophysiology and Japanese Heart Rhythm Society)

**Symposium:** The 72<sup>st</sup> Annual Scientific Meeting of the Japanese Circulation Society. 3/27-30/2008, Fukuoka, Japan.

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**Keynote Lecture:** Integration of cine angiogram into magnetic maneuvering system for robotic mapping in patients with complex arrhythmias

**Commentator:** Live demonstration of catheter ablation of ventricular tachycardia

**Chairman:** Live demonstration of catheter ablation of atrial flutter

**Symposium:** 7<sup>th</sup> Atrial Fibrillation Symposium of, 03/13-14/2008, Paris, France

**Lecture:** What should be the approach to "man-made" arrhythmias after AFIB Ablation:  
Electroanatomical mapping based approach

**Symposium:** 13<sup>th</sup> Annual Symposium of Atrial Fibrillation: Mechanism and New Directions in Therapy, 01/17-19/2008, Boston, MA

**Lecture:** Prevention of Esophageal Injury after AF Ablation

**Symposium:** Western Atrial Fibrillation Symposium, Park City, Utah, 12/13-14/2007

**Lecture:** Ablation in AF: Targeting Ganglionated Plexi

**Symposium:** World Congress on Cardiac Pacing and Electrophysiology, Rome, Italy, 12/02-06/2007.

**Chairman:** The Essential Anatomy the Electrophysiologist Needs

**Lecture:** Use of Irrigation versus large electrodes to optimize efficacy and safety during RF ablation

**Chairman and Lecture:** Atrial Fibrillation: From Basic Science to Clinical Practice-Session VIII:  
The Post AF Ablation Patients: Incidence and management of AFL post AF ablation

**Symposium:** An International Symposium on Ventricular Arrhythmias: Pathophysiology and Therapy, Philadelphia, PA 10/26-27/2007

**Lecture:** Biophysics of Ablation in Infarcted Myocardium

**Symposium:** The 3rd Asia-Pacific Atria Fibrillation Symposium, Taipei, Taiwan, 10/18-20/2007.

**Lecture:** New Technology of AF Ablation (I): HIFU Balloon catheter ablation

**Lecture:** ThermoCool ablation of atrial fibrillation.

**Lecture:** Adjunctive Ablation Technique-When, How, and What? Denervation

**Lecture:** How to Find, Prevent, and Treat the Complications of AF Ablation

**Chair:** Case Review 1

**Symposium:** The Clinical Leadership Summit, Boston, MA, 9/15-16/2007

**Lecture:** Case Presentation with the Master

**Symposium:** The 55th Annual Scientific Meeting of the Japanese College of Cardiology. 9/09-12/2007, Maihama, Japan

**Chairman and Lecture:** New Devices for Diagnosis and Treatment of Arrhythmias.

**Symposium:** EUROPACE 2007, Lisbon, Portugal, 6/24-27/2007

**Lecture:** Meet the Expert Session: High-Intensity Focused Ultrasound Balloon Catheter for Ablation in Patients wit Atrial Fibrillation.

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**Symposium:** The 22nd Annual Scientific Meeting of the Japanese Heart Rhythm Society. 6/1-2/2007, Hiroshima, Japan

**Lecture:** What is your strategy for AF ablation?

**Lecture:** "Unknown Tracings of EPS"

**Lecture:** High-Intensity Focused Ultrasound Balloon Catheter for Ablation in Patients with Atrial Fibrillation.

**Lecture:** Japan and US Medical Standard Gap

**Chairman:** Symposium: Nonpharmacological Therapy of Atrial Fibrillation: Catheter Ablation or Surgical Ablation.

**Symposium:** 28th Annual Scientific Sessions of the Heart Rhythm Society, Boston, MA, 5/9-12/2007

**Lecture:** Core Curriculum: Strategies for ablation of chronic atrial fibrillation II: Neural modulation: Single or adjunctive approach.

**Symposium:** 28th Annual Scientific Sessions of the Heart Rhythm Society, Boston, MA, 5/9-12/2007

**Lecture:** Core Curriculum: Emerging tools and technologies in catheter ablation: Large tip or open irrigation

**Symposium:** 4<sup>th</sup> Annual St. Jude Medical EP Fellows Conference, Boston, MA, 5/8/2007.

**Lecture:** Biophysics of RF ablation

**Lecture:** Catheter ablation of Complex Atrial Tachycardia and Atrial Flutter

**Symposium:** 5<sup>th</sup> Annual Symposium: Towards a New Era in Interventional Electrophysiology. Montreal, Quebec, Canada, 4/26-28/2007.

**Lecture:** Biophysics of Catheter Ablation and Remote Magnetic Navigation

**Lecture:** An Animal Model of Atrial-Esophageal Fistula

**Symposium:** 56<sup>th</sup> Annual Scientific Session of American College of Cardiology Symposium, New Orleans, LA, March 24-27, 2007

**Chairman:** Symposium: Atrial tachycardias and atrial flutter: Mechanism and therapies.

**Symposium:** The 71<sup>st</sup> Annual Scientific Meeting of the Japanese Circulation Society. 3/14-17/2007, Kobe, Japan.

**Lecture:** Ablation of ganglionated plexi with pulmonary vein antrum isolation in patients with paroxysmal and persistent atrial fibrillation

**Lecture:** Robotic catheter maneuvering system for mapping/ablation of left atrium and pulmonary veins.

**Chairman and Commentator:** Live demonstration of catheter ablation

**Symposium:** Boston AF Symposium: Evolving Approaches: The next generation of AF management: 01/11/2007, Boston, MA.

**Lecture:** Signal processing for ganglionated plexi in AF ablation

**Symposium:** The 2nd Asia-Pacific Atrial Fibrillation Symposium, Tokyo, Japan, 11/23-25/2006.

**Lecture:** Progress of GP ablation in AF treatment

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**Lecture:** Initial experience using a forward directed, high-intensity focused ultrasound balloon catheter for pulmonary vein antrum isolation in patients with atrial fibrillation.

**How to Session:** How to detect and ablate the ligament of Marshall focus

**Symposium:** American Heart Association Scientific Sessions 2006, 11/12-15/2006, Chicago, Illinois.

**Lecture:** Clinical Practice 2006: Evolving Technologies in Electrophysiology Procedure: Curing Atrial Fibrillation with Autonomic Modulation.

**Symposium:** Catheter Ablation Seminar, Tokyo, Japan, 11/3-5/2006.

**Lecture:** Pitfall of Electroanatomical Mapping in Complex Arrhythmias

**Symposium:** Atrial Fibrillation: Contemporary Management and Therapeutic Approaches. Las Vegas, Nevada, 10/28-29/2006

**Lecture:** The Developing Role of Catheter Ablation of Cardiac Autonomic Ganglia for Prevention of Atrial Fibrillation

**Symposium:** 20 Years of Radiofrequency Ablation: What have we learned and where do we go from here? Mannheim, Germany, 10/20-21/2006

**Lecture:** How do we approach catheter ablation of AF in the future? "The ganglionic plexus approach"

**Symposium:** The Clinical Leadership Summit, Boston, MA, 10/6-7/2006

**Lecture:** Case Presentation with the Master

**Symposium:** 4th China Atrial Fibrillation Symposium, Dalian, China, 7/14-16/2006.

**Lecture:** "Progress of GP Ablation in AF Treatment"

**Lecture:** "Radiofrequency Catheter Ablation with Irrigated Electrode-Optimizing Safety and Efficacy"

**Symposium:** The Joint Conference of the 21<sup>st</sup> Annual Scientific Meeting of the Japanese Heart Rhythm Society and the 23<sup>rd</sup> Annual Meeting of the Japanese Society of Electrocardiology. 7/7-9/2006, Tokyo, Japan

**Lecture:** "Unknown Tracings"

**Lecture:** "Radiofrequency Catheter Ablation with Irrigated Electrode-Optimizing Safety and Efficacy"

**Symposium:** 15<sup>th</sup> World Congress in cardiac electrophysiology and Cardiac Techniques (Cardiostim), Nice, France, 6/14-17/2006

**Lecture:** 15<sup>th</sup> World Congress on Catheter Ablation: Ablation of complex atrial flutter circuits.

**Symposium:** 27th Annual Scientific Sessions of the Heart Rhythm Society, Boston, MA 5/17-20/2006

**Lecture:** Mini Course: RF Ablation with irrigated or large electrodes; optimizing safety and efficacy.

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**Symposium:** 27th Annual Scientific Sessions of the Heart Rhythm Society, Boston, MA 5/017-20/2006

**Lecture:** Special session: Non-Ischemic VT/VF

**Symposium:** 3<sup>rd</sup> Annual St. Jude Medical EP Fellows Conference, Boston, MA, 5/16/2006.

**Lecture:** Biophysics of RF ablation

**Lecture:** Catheter ablation of Macroreentrant Atrial Tachycardia

**Lecture:** Catheter ablation of Ventricular Tachycardia in Patients with Prior Myocardial Infraction

**Symposium:** 36<sup>th</sup> Annual Meeting of Japanese Society for Cardiovascular Surgery, Morioka, Japan, 04/011-14/2006

**Lecture:** The Developing Role of Catheter Ablation of Cardiac Autonomic Ganglia for Prevention of Atrial Fibrillation

**Lecture:** High-intensity focused ultrasound balloon catheter for ablation of atrial fibrillation

**Symposium:** 14<sup>th</sup> Tachyarrhythmia, Kanazawa, Japan, 02/04/2006

**Lecture:** The Developing Role of Catheter Ablation of Cardiac Autonomic Ganglia for Prevention of Atrial Fibrillation

**Symposium:** The 1st Asia-Pacific Atrial Fibrillation Symposium, Seoul, Korea, 12/15-17/2005.

**Lecture:** The Developing Role of Catheter Ablation of Cardiac Autonomic Ganglia for Prevention of Atrial Fibrillation

**Lecture:** Comparison of Electrode Cooling Between Internal and Open Irrigation in Radiofrequency Ablation Lesion Depth and Incidence of Thrombus and Steam Pop.

**Panel Discussion:** How to prevent and Treat Complication of AF Ablation

**Symposium:** 22<sup>nd</sup> Brazilian Congress of Cardiac Arrhythmias, Fortaleza, Brazil, 12/01-03/2005.

**Lecture:** The Developing Role of Catheter Ablation of Cardiac Autonomic Ganglia for Prevention of Atrial Fibrillation

**Lecture:** Ventricular Ablation: Oklahoma Approach

**Symposium:** 3<sup>rd</sup> Annual Scientific Meeting of Oriental Catheter Therapeutics, Nanjing, China, 6/10-11/2005

**Lecture:** Clinical Application of Saline Irrigated Ablation Catheter

**Symposium:** 20<sup>th</sup> Annual Scientific Meeting of Japanese Association of Pacing and Electrophysiology, Takarazuka, Japan, 5/29-31/2005

**Lecture:** The Developing Role of Catheter Ablation of Cardiac Autonomic Ganglia for Prevention of Atrial Fibrillation

**Lecture:** Japan and US Medical Standard Gap

**Symposium:** 26<sup>th</sup> Annual Scientific Sessions of the Heart Rhythm Society, New Orleans, LA 5/04-07/2005

**Lecture:** Mini Course: Alternative Ablation Devices: Is Imaging Still Important?

**Lecture:** Clinical Tutorial: Ablation of SVT: Catheter Ablation of Macroreentrant Left Atrial Tachycardia Following Catheter or Surgical Ablation of Atrial Fibrillation

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**Lecture:** Clinical Tutorial: AF Ablation Technique Controversy Catheter Ablation: Localization and Catheter Ablation of Cardiac Autonomic Ganglia in Patients with Atrial Fibrillation

**Lecture:** Localization and Catheter Ablation of Cardiac Autonomic Ganglia in Patients with Atrial Fibrillation

**Symposium:** 10th Annual Boston AF Symposium: Boston, MA, 01/14-15/2005

**Lecture:** Localization and Catheter Ablation of Cardiac Autonomic Ganglia in Patients with Atrial Fibrillation

**Symposium:** 21st Annual Meeting of Japanese Electrocardiography, Kyoto, Japan, 9/13-14/2004

**Lecture:** Saline Irrigated Radiofrequency Ablation electrode Using Internal and/or External Cooling

**Symposium:** 3rd Annual Symposium: Toward s a New Era in Interventional Electrophysiology, Mont Tremblant, Quebec, Canada, 10/01-03/2004

**Lecture:** Non-Fluoroscopic Mapping: Dawn of the Second Era: Stereotaxis-The Robotics of Electrophysiology

**Lecture:** AF is a Dysautonomia: Fact or Fiction: Clinical Counterpart: Catheter Ablation of Cardiac Autonomic Nerves Prevents Initiation of Atrial Fibrillation

**Symposium:** 21st Annual Meeting of Japanese Electrocardiography, Kyoto, Japan, 9/13-14/2004

**Lecture:** Saline Irrigated Radiofrequency Ablation electrode Using Internal and/or External Cooling

**Symposium:** 4th Annual Meeting of Kanagawa Circulation Forum, Yokohama, Japan, 7/03/2004

**Lecture:** Catheter Ablation of Atrial Fibrillation

**Symposium:** 3rd Annual Meeting of Jonan Bench to Bedside Conference, Tokyo, Japan, 7/02/2004

**Lecture:** Catheter Ablation of Atrial Fibrillation

**Symposium:** 31<sup>st</sup> International Congress on Electrocardiography, Kyoto, Japan, 6/28-7/01/2004

**Lecture:** Catheter Ablation of Unmappable Ventricular Tachycardias Associated with Prior Myocardial Infarction

**Symposium:** 3<sup>rd</sup> Annual Meeting of New Jersey Society for Pacing and Electrophysiology, Livingston, NJ, 6/10/2004

**Lecture:** Catheter Ablation of Autonomic Ganglia in Patients with Atrial Fibrillation

**Symposium:** 19<sup>th</sup> Annual Scientific Meeting of Japanese Association of Pacing and Electrophysiology, Niigata, Japan, 5/27-30/2004

**Lecture:** A Novel High-Intensity Focused Ultrasound (HIFU) Balloon Catheter for Pulmonary Vein Antrum Isolation in Patients with Atrial Fibrillation

**Symposium:** 25<sup>th</sup> Annual Scientific Sessions of the North American Society of Pacing and Electrophysiology, San Francisco, CA, 5/19-22/2004

**Lecture:** Clinical Tutorials: Ablation of Difficult Flutters

**Lecture:** Core Curriculum: Optimal Approaches to Catheter Ablation of Atrial Fibrillation



**Symposium:** 68<sup>th</sup> Annual Scientific Meeting of Japanese Circulation Society, Tokyo, Japan 3/27-29/2004

**Keynote Lecture:** Identification and Ablation of Arrhythmogenic Channels within the Scar During Sinus Rhythm in Patients with Unmappable VT Associated Prior-MI

**Lecture:** Novel Magnetic Catheter Maneuvering System for Pulmonary Vein Isolation and Left Atrial Linear Lesions

**Symposium:** Atrial Fibrillation Therapy Symposium, Roma, Italy, 3/25-26/2004

**Lecture:** Potential Role of "Fat Pad" for AF Ablation

**Lecture:** Ablation Technologies: conventional "past", irrigated "present" and laser or HIFU "future"

**Symposium:** 18<sup>th</sup> Annual Scientific Meeting of Japanese Association of Pacing and Electrophysiology, Kyoto, Japan, 5/25-27/2003

**Lecture:** Pulmonary vein isolation procedures in patients with paroxysmal and persistent atrial fibrillation

**Lecture:** New Technologies for Catheter ablation of Atrial Fibrillation

**Lecture:** Accessory AV pathways difficult to ablate

**Lecture:** Radiofrequency Catheter Ablation of Ventricular Tachycardia Associated with Organic Heart Disease: Ablation of Unmappable VT

**Symposium:** 24<sup>th</sup> Annual Scientific Sessions of the North American Society of Pacing and Electrophysiology, Washington, DC, 5/14-17/2003

**Lecture:** Clinical Tutorials: Anatomic basis of arrhythmias: Atrial Fibrillation, Atrial Flutter and AVNRT

**Lecture:** Core Curriculum: Atrial flutter and its Cousins: Mapping and Ablation Right and Left Atrial Non-Isthmus Dependent Flutter

**Symposium:** American College of Cardiology, Chicago, IL, 3/30/2003-4/2/2003

**Lecture:** Meet the Expert Session: Use of Advanced Cardiac Mapping Systems

**Symposium:** 5<sup>th</sup> Annual Meeting of Catheter Ablation in Iwate, Morioka, Japan, 8/23/2002

**Lecture:** Catheter Ablation of Unmappable Ventricular Tachycardia Associated with Prior Myocardial Infarction

**Symposium:** 17<sup>th</sup> Annual Scientific Meeting of Japanese Association of Pacing and Electrophysiology, Toyama, Japan, 5/26-28/2002

**Lecture:** Radiofrequency Catheter Ablation of Macroreentrant Atrial Tachycardia Following Fontan Procedure: Ablation of Unmappable AT

**Lecture:** New Technologies for Catheter ablation of Atrial Fibrillation

**Symposium:** Turkish Arrhythmia Congress, Ankara, Turkey, 4/18-20/2002

**Lecture:** Pulmonary Vein Isolation in Patients with Paroxysmal/Persistent Atrial Fibrillation

**Symposium:** American College of Cardiology: Atlanta, 3/17-20/2002

**Lecture:** Arrhythmia Management in Adult Congenital Heart Disease: Radiofrequency Catheter Ablation of Macroreentrant Atrial Tachycardia Following Fontan Procedure: Ablation of Unmappable AT

**Symposium:** Contemporary Issue on New Technology for Catheter Ablation, Milan, Italy, 12/2-4/2001

**Lecture:** Radiofrequency Catheter Ablation of Macroreentrant Left Atrial Tachycardia

**Symposium:** National Workshop on Clinical Cardiac Electrophysiology and Ablation, New Delhi, India 10/7-8/2001

**Lecture:** Radiofrequency Catheter Ablation of Ventricular Tachycardia Associated with Organic Heart Disease

**Lecture:** Radiofrequency Catheter Ablation of Atrial Fibrillation

**Lecture:** Catheter Ablation of Macroreentry Associated with Repaired Congenital Heart Disease

**Symposium:** 3<sup>rd</sup> Annual Scientific Meeting of Seoul Electrophysiology Society, Seoul, Korea, Japan, 5/25-26/2001

**Lecture:** Radiofrequency Catheter Ablation of Atrial Fibrillation

**Lecture:** Catheter Ablation of Macroreentry Associated with Repaired Congenital Heart Disease

**Symposium:** 16<sup>th</sup> Annual Scientific Meeting of Japanese Association of Pacing and Electrophysiology, Tokyo, Japan, 5/21-5/23, 2001

**Lecture:** Radiofrequency Catheter Ablation of Ventricular Tachycardia Associated with Organic Heart Disease

**Lecture:** New Technologies for Catheter ablation of Atrial Fibrillation

**Symposium:** 22<sup>nd</sup> Annual Scientific Sessions of the North American Society of Pacing and Electrophysiology, Boston, Massachusetts, 5/2-5/2001,

**Lecture:** Core Curriculum: Ablation of Atrial Macroreentry: Macroreentry Associated with Repaired Congenital Heart Disease

**Symposium:** 7<sup>th</sup> Annual Meeting of Kyushu Fusemyaku Kenkukai, Hakata, Japan, 12/15/2000

**Lecture:** Catheter Ablation of Atrial Flutter/Atrial Fibrillation

**Symposium:** 14<sup>th</sup> Annual Meeting of Coronary Artery Disease, Hiroshima, Japan, 12/14-15/2000

**Lecture:** Catheter Ablation of Ventricular Tachycardia Associated with Coronary Artery Disease

**Lecture:** Catheter Ablation of Atrial Flutter/Atrial Fibrillation

**Symposium:** Post Graduate Course: Electro Anatomy of the Heart, Norderstedt, Germany, 10/5-7/2000

**Lecture:** Ventricular Tachycardia: Ablation Strategies "Channel Elimination"

**Lecture:** Channel Identification to Guide Catheter Ablation of Atrial Tachycardia Following Fontan Procedure

**Symposium:** 1<sup>st</sup> Annual Meeting of Catheter Ablation in Maebashi, Gunma, Japan, 6/1/2000

**Lecture:** Catheter Ablation of Atrial Fibrillation

**Symposium:** 3<sup>rd</sup> Annual Meeting of Catheter Ablation in Iwate, Morioka, Japan, 5/31/2000

**Lecture:** Catheter Ablation of Complex Atrial Tachycardia

**Symposium:** 15<sup>th</sup> Annual Scientific Meeting of Japanese Association of Pacing and Electrophysiology, Tokyo, Japan, 5/28-30/2000

**Lecture:** Basic Concept of Radiofrequency Catheter Ablation

**Lecture:** Catheter Ablation of Atrial Flutter and Fibrillation

**Symposium:** 21<sup>st</sup> Annual Scientific Sessions of the North American Society of Pacing and Electrophysiology, Seattle, Washington, 5/17-20/2000

**Lecture:** Clinical Tutorials: Biophysics of RF Ablation: Impact of New Catheter Technology

**Lecture:** Core Curriculum: Biophysical considerations of radiofrequency ablation in children and patients with congenital heart disease: Effects of blood flow patterns common in pediatrics and congenital heart disease

**Symposium:** Recent advancement in the diagnosis and management of cardiac arrhythmia, Taipei, Taiwan, 2/20/2000

**Lecture:** Characterization of the reentrant circuit in macroreentrant right atrial tachycardia following surgical repair of congenital heart disease

**Symposium:** Asian Pacific Symposium on Cardiac Electrophysiology and Pacing, Hualien, Taiwan, 12/10-12/1999

**Lecture:** Catheter mapping and ablation of VT associated with ischemic heart disease

**Lecture:** Catheter ablation of Marshall tract from the coronary sinus

**Symposium:** 11<sup>th</sup> Annual Scientific Sessions of the Japanese Catheter Ablation Society, Tokyo, Japan, 10/23/1999

**Lecture:** Radiofrequency Catheter Ablation of Atrial Fibrillation

**Symposium:** 2<sup>nd</sup> Scholar's Meeting of CARTO & NOGA/DMR Sitges, Spain, 8/26-27/1999

**Lecture:** Role of the voltage map in selecting an ablation line across the subeustachian isthmus for ablation of typical atrial flutter

**Symposium:** 2<sup>nd</sup> Annual Seminar of Catheter Ablation Electrophysiology, Okayama, Japan, 5/28/1999

**Lecture:** Basic concept of radiofrequency ablation

**Symposium:** 14<sup>th</sup> Annual Scientific Meeting of Japanese Association of Pacing and Electrophysiology, Okayama, Japan, 5/26-27/1999

**Lecture:** Case Conference

**Symposium:** 2<sup>nd</sup> Annual Meeting of Catheter Ablation in Iwate, Morioka, Japan, 4/23/1999

**Lecture:** Catheter Ablation of Atrial Fibrillation

**Symposium:** 24<sup>th</sup> Annual Conference of the International Society for Computerized Electrocardiology, Nara, Japan 4/20-22/1999

**Lecture:** Use of a 3-D, Non-fluoroscopic mapping system for catheter ablation of Macroreentrant Atrial Tachycardia

**Symposium:** 12<sup>th</sup> Annual Scientific Sessions of the Clinical Electrophysiology, Tokyo, Japan, 4/17/1999

**Lecture:** Catheter Ablation of Macroreentrant Atrial Tachycardia Using a Noble 3-D Electroanatomical Mapping System

**Symposium:** 9<sup>th</sup> Annual Meeting of Catheter Ablation, Kantou, Tokyo, Japan, 9/18/1998

**Lecture:** Catheter Ablation of Atrial Flutter/Fibrillation Using a Noble 3-D Electroanatomical Mapping System

**Symposium:** 2<sup>nd</sup> Annual Meeting of the Arrhythmia in Kyoto, Shiga and Nara, Kyoto, Japan, 6/21/1998

**Lecture:** Catheter Ablation of Ventricular Tachycardia Associated with Coronary Artery Disease Using a Noble 3-D Electroanatomical Mapping System

**Symposium:** 18<sup>th</sup> Annual Scientific Sessions of the North American Society of Pacing and Electrophysiology, San Diego, California, 5/6-9/1998

**Lecture:** Meet the Experts Luncheon Panel: Complications of Catheter Ablation Techniques: How to Avoid Them

**Symposium:** Catheter Ablation of Atrial Fibrillation Using the CARTO System: Techniques and Initial Clinical Results, Orlando, Florida, 11/9/97

**Lecture:** Atrial Potential Amplitude Attenuation as a Guide to Transmural Atrial Injury in Langendorff-Perfused Canine Hearts

**Symposium:** 12<sup>th</sup> Annual Scientific Meeting of Japanese Association of Pacing and Electrophysiology, Saitama, Japan, 6/4-6/1997

**Lecture:** Usefulness and Limitations of Entrainment Mapping for reentrant Tachycardias

**Symposium:** New Technology for Atrial Linear Lesions: Problems and Promise, New Orleans, Louisiana, 5/8/1997

**Lecture:** Differences in Continuity and Size of Linear RF Atrial Lesions Created in Sinus Rhythm vs. Atrial Fibrillation Using Multielectrode Catheter and Temperature Control: Implications for Use of a Cooled Electrode

**Symposium:** 18<sup>th</sup> Annual Scientific Sessions of the North American Society of Pacing and Electrophysiology, New Orleans, Louisiana, 5/7-10/1997

**Lecture:** Clinical Tutorials: Catheter ablation of accessory pathways (A)

**Symposium:** 9<sup>th</sup> Annual Scientific Sessions of the Arrhythmia Conference, Nagoya, Japan, 4/3/1997

**Lecture:** New Non-contact Multielectrode Array Catheter Mathematically Reconstructs Left Bundle Branch Potentials

**Symposium:** 61<sup>st</sup> Annual Scientific Meeting of Japanese Circulation Society: The International Session "Circulation '97, Japan", Tokyo, Japan, 3/31/1997-4/2/1997

**Lecture:** Non-Pharmacological Therapy of Atrial Flutter

**Lecture:** "Analysis on substrate of reentrant ventricular tachycardia": New Non-Contact Multielectrode Array Catheter Mathematically Reconstructs Left Bundle Branch Potentials

**Lecture:** Radiofrequency Catheter Ablation of Accessory AV Pathways

**Symposium:** 9<sup>th</sup> Annual Scientific Sessions of the Clinical Electrophysiology, Tokyo, Japan, 1/18/1997

**Lecture:** Current status of catheter ablation of atrial flutter/fibrillation

**Symposium:** International Symposium: Atrial Flutter and Fibrillation From Basics to Clinical Application, Heidelberg, Germany, 9/27-28/1996

**Lecture:** Mechanisms of atrial flutter: Clinical Findings

**Symposium:** 17<sup>th</sup> Annual Scientific Sessions of the North American Society of Pacing and Electrophysiology, Seattle, Washington, 5/15-18/1996

**Lecture:** Clinical Tutorials: Catheter Ablation: Biophysics, Basic Concepts, and Radiation Safety

**Lecture:** Meet the Experts Luncheon Panel: Catheter Ablation of Supraventricular Tachycardia-Using all of the Tools

**Symposium:** 45<sup>th</sup> Annual Scientific Session of the American College of Cardiology: Orlando, Florida, 3/24-27/1996,

**Lecture:** Fireside Panel "New Electrophysiologic Ablation Technique"

**Symposium:** 4<sup>th</sup> Annual Scientific Sessions of the New Horizon for Cardiology, Tokyo, Japan, 2/10/1996

**Lecture:** Current status and future trend of radiofrequency catheter ablation

**Symposium:** 16<sup>th</sup> Annual Scientific Sessions of the North American Society of Pacing and Electrophysiology, Boston, Massachusetts, 5/3-6/1995

**Lecture:** Clinical Tutorials: Catheter Ablation: Basic concepts (A)

**Symposium:** 21<sup>st</sup> International Congress on Electrocardiology, Yokohama, Japan, 7/4-7/1994

**Lecture:** Catheter ablation of idiopathic ventricular tachycardia: Catheter ablation of atrial flutter

**Symposium:** 15<sup>th</sup> Annual Scientific Sessions of the North American Society of Pacing and Electrophysiology, Nashville, Tennessee, 5/11-14/1994,

**Lecture:** Core Session: Catheter Ablation IV: Ventricular Tachycardia

**Lecture:** Radiofrequency Catheter Ablation of Idiopathic Left Ventricular Tachycardia

**Symposium:** 4<sup>th</sup> Annual Scientific Sessions of the Japanese Catheter Ablation Society, Tokyo, Japan, 10/31/1992

**Lecture:** Radiofrequency Catheter Ablation in Patients with Supraventricular Tachyarrhythmias

**Symposium:** International Symposium on Cardiac Arrhythmias, Hiroshima, Japan, 5/23-24/1992

**Lecture:** Idiopathic Monomorphic Right Ventricular Tachycardia: Mechanism and Results of Catheter Ablation

**Symposium:** 53<sup>rd</sup> Annual Scientific Session of the Japanese Circulation Society, Nagoya, Japan, 3/29-31/89

**Lecture:** Symposium on Diagnosis and Treatment of Life-threatening Arrhythmia

**Lecture:** Efficacy and Safety of Catheter Electrical Ablation for Ventricular Tachycardia: Experimental and Clinical Studies

**Symposium:** 5<sup>th</sup> Annual Scientific Sessions of the Japanese Electrocardiology Society, Tokyo, Japan, 10/2-3/88

**Lecture:** Monophasic Action Potential Mapping in Human Subjects with Normal Electrocardiogram

## VIII. **TEACHING ACTIVITIES**

### **Electrophysiology Research Fellows:**

Atsushi Ikeda: January 2007 – present  
Katsuaki Yokoyama: January 2004 – May 2007  
Hiroshi Aoyama: 2001-2004  
Tetsuo Yagi: 2000-2002  
Kagari Matsudaira: 1998-2000  
Shinobu Imai: 1995-1998

**Course Co-Director:**

**Advanced Course in Catheter Ablation of Cardiac Arrhythmias. Presented by Cardiac Arrhythmia Research Institute (CARI)**

March 19-23, 2007

April 3-7, 2006  
September 18-22, 2006

April 4-8, 2005  
September 19-23, 2005  
November 17-22, 2005 (for Japanese Physicians)

November 12-17, 2004 (for Japanese Physicians)  
September 20-23, 2004  
May 3-6, 2004

November 21-26, 2003 (for Japanese Physicians)  
September 2-5, 2003  
March 2-5, 2003

November 22-27, 2002 (for Japanese Physicians)  
September 9-12, 2002  
May 13-16, 2002  
March 4-7, 2002

**Course Faculty:**

**Advanced Course in Catheter Ablation of Cardiac Arrhythmias. Presented by Cardiac Arrhythmia Research Institute (CARI)**

November 16-22, 2001 (For Japanese Physicians)  
September 6-11, 2001  
March 1-6, 2001  
February 8-13, 2001

November 2000 (For Japanese Physicians)  
May 2000  
April 2000

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November 1999 (For Japanese Physicians)  
September 1999  
January 1999

November 1998 (For Japanese Physicians)  
September 1998  
January 1997

November 1996 (For Japanese Physicians)  
September 5-10, 1996  
July 18-23, 1996  
April 11-16 1996  
January 18-23, 1996

November 17-22, 1995 (For Japanese Physicians)  
September 14-19, 1995

November 18-23, 1994 (For Japanese Physicians)  
October 13-19, 1994  
April 4-10, 1994

**Faculty for Session:**

**Symposium:** American College of Cardiology, Heart House, Bethesda, MD, 12/6-8/1999  
**Lecture:** Advanced catheter ablation of cardiac arrhythmias

**Symposium:** American College of Cardiology Heart House, Bethesda, MD, 12/11-13/1997  
**Lecture:** Advanced catheter ablation of cardiac arrhythmias

**Symposium:** American College of Cardiology Heart House, Bethesda, MD. 5/19-21/1997  
**Lecture:** Advanced catheter ablation of cardiac arrhythmias

**Symposium:** American College of Cardiology: Bethesda, MD. 5/29-31/1996  
**Lecture:** Advanced catheter ablation of cardiac arrhythmias

**Symposium:** American College of Cardiology: Bethesda, MD. 4/10-12/1995  
**Lecture:** Advanced catheter ablation of cardiac arrhythmias: Basic concepts of RF lesion formation: Potential advantages of an active cooled electrode for RF ablation

**Visiting Professorships and Demonstration of Catheter Ablation:**

Juntendo University School of Medicine, Tokyo, Japan (Dr. Daida), September 12, 2008  
Lecture: Catheter Mapping and Ablation of Complex Arrhythmias Using Magnetic Robotic Catheter Maneuvering System

Tokyo Women Medical College, Tokyo, Japan (Dr. Morio Shoda), September 10-12, 2008  
Demonstration of Catheter Ablation Using Magnetic catheter maneuvering system (Stereotaxis)

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Toyohashi Heart Center, Toyohashi, Japan (Dr. Takahiko Suzuki), August 27-29, 2008  
Demonstration of Catheter Ablation of Atria Fibrillation and Macroreentrant Atrial Tachycardia  
Lecture: Catheter Ablation of Cardiac Autonomic Ganglionated Plexi in Patients with Atrial Fibrillation  
Lecture: Catheter Ablation of Macroreentrant Right and Left Atrial Tachycardias

Nihonkai Hospital, Yamagata, Japan (Dr. Daida), August 25, 2008  
Lecture: Catheter Mapping and Ablation of Complex Arrhythmias Using Magnetic Robotic Catheter Maneuvering System

Singapore General Hospital, Singapore (Dr. Wee Teo), June 9-10, 2008  
Demonstration of Catheter Ablation of Atria Fibrillation and Macroreentrant Atrial Tachycardia  
Lecture: Catheter Mapping and Ablation of Complex Arrhythmias Using Magnetic Robotic Catheter Maneuvering System

Saitama University School of Medicine, Saitama, Japan (Dr. Matsumoto), October 23, 2007  
Lecture: Catheter Mapping and Ablation of Complex Arrhythmias Using Magnetic Robotic Catheter Maneuvering System

Yamada Red Cross Hospital, Ise, Japan (Dr. Sakai), October 22, 2007  
Demonstration of Catheter Ablation of Atrial Fibrillation  
Lecture: Catheter Ablation of Cardiac Autonomic Ganglionated Plexi in Patients with Atrial Fibrillation

Toyohashi Heart Center, Toyohashi, Japan (Dr. Takahiko Suzuki), August 28-31, 2007  
Demonstration of Catheter Ablation of Atria Fibrillation and Macroreentrant Atrial Tachycardia  
Lecture: Catheter Ablation of Cardiac Autonomic Ganglionated Plexi in Patients with Atrial Fibrillation  
Lecture: Catheter Ablation of Macroreentrant Right and Left Atrial Tachycardias

Funahashi City Hospital, Chiba, Japan (Dr. Inagaki), June 8, 2007  
Demonstration of Catheter Ablation of Atrial Fibrillation

Kumamoto University School of Medicine, Kumamoto, Japan (Dr. Hisao Ogawa), June 07, 2007  
Demonstration of Catheter Ablation of Atrial Fibrillation  
Lecture: Robotic Catheter Mapping/Ablation of Complex Arrhythmias

Tsukuba University School of Medicine, Tsukuba, Japan (Dr. Aonuma), March 12, 2007  
Lecture: Evolving Approaches for Catheter Ablation of Atrial Fibrillation

Toyohashi Heart Center, Toyohashi, Japan (Dr. Takahiko Suzuki), August 22-25, 2006  
Demonstration of Catheter Ablation of Atria Fibrillation and Macroreentrant Atrial Tachycardia  
Lecture: Catheter Ablation of Cardiac Autonomic Ganglionated Plexi in Patients with Atrial Fibrillation  
Lecture: Catheter Ablation of Macroreentrant Right and Left Atrial Tachycardias



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Care Hospital, Hyderabad, India (Dr. Calambur Narasimhan), November 15-17, 2006  
Demonstration of Catheter Ablation of Anteroseptal Accessory Pathway, Atrial Fibrillation, Atrial Tachycardia and Ventricular Tachycardia.

Lecture: Catheter Ablation of Anteroseptal Accessory Pathway

Lecture: Catheter Ablation of Macroreentrant Atrial Tachycardia

Lecture: Catheter Ablation of Ventricular Tachycardia Associated with Prior Myocardial Infarction

Funahashi City Hospital, Chiba, Japan (Dr. Inagaki), April 14, 2006

Demonstration of Catheter Ablation of Ventricular Tachycardia in a Patient with Dilated Cardiomyopathy.

Chiba Cardiovascular Center, Chiba, Japan (Dr. Tateno), April 13, 2006

Demonstration of Catheter Ablation of Macroreentrant atrial tachycardia post Mustard operation.

Heart Lung Center Utrecht, Utrecht, The Netherlands (Dr. Fred HM Wittkamp), February 10, 2006

Demonstration of Catheter Ablation of Focal Atrial Fibrillation

Sakurabashi Watanebe Hospital, Osaka, Japan (Dr. Kurotobi), February 3, 2006

Demonstration of Catheter Ablation of Atrial Fibrillation

Lecture: Catheter Ablation of Cardiac Autonomic Ganglionated Plexi in Patients with Atrial Fibrillation

Kyoto University Graduate School of Medicine, Kyoto, Japan (Dr. Tsuyoshi Kimura), February 2, 2006

Lecture: Catheter Ablation of Cardiac Autonomic Ganglionated Plexi in Patients with Atrial Fibrillation

Mie University School of Medicine, Tsu, Japan (Dr. Eitaro Fujii), December 13-14, 2005

Demonstration of Catheter Ablation of Atrial Fibrillation

Lecture: Catheter Ablation of Cardiac Autonomic Ganglionated Plexi in Patients with Atrial Fibrillation

Rio de Janeiro Hospital, Rio de Janeiro, Brazil (Dr. Eduardo Saad), November 28, 2005

Demonstration of Catheter Ablation of Atrial Fibrillation

Lecture: Catheter Ablation of Cardiac Autonomic Ganglionated Plexi in Patients with Atrial Fibrillation

Shanghai Medical University, Shanghai, China (Dr. Wang), June 8, 2005

Demonstration of Catheter Ablation of Idiopathic Left Ventricular Tachycardia

Lecture: Catheter Ablation of Atrial Fibrillation

Sapporo Medical University, Sapporo, Japan (Dr. Kikuya Uno), June 4, 2005

Lecture: Catheter Ablation of Cardiac Autonomic Ganglionated Plexi in Patients with Atrial Fibrillation

Nihon University, Tokyo, Japan (Dr. Ichiro Watanabe), June 3, 2005

Demonstration of Catheter Ablation of Atrial Fibrillation

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Lecture: Japan and US Medical Standard Gap

Ageo Chuou General Hospital, Saitama, Japan (Dr. Nishimura), June 2, 2005

Demonstration of Catheter Ablation of Atrial Tachycardia

Lecture: Catheter Ablation of Cardiac Autonomic Ganglionated Plexi in Patients with Atrial Fibrillation

Toyohashi Heart Center, Toyohashi, Japan (Dr. Takahiko Suzuki), June 1, 2005

Demonstration of Catheter Ablation of Accessory Pathways and AVNRT

Lecture: Catheter Ablation of Cardiac Autonomic Ganglionated Plexi in Patients with Atrial Fibrillation

Nihon University, Tokyo, Japan (Dr. Ichiro Watanabe), March 18, 2005

Demonstration of Catheter Ablation of Macroreentrant Atrial Tachycardia

Lecture: Biophysics of RF Ablation

Shenyang Northern Hospital, Shenyang, China (Dr. Zulu Wang), January 7-8, 2005

Demonstration of Catheter Ablation of Atrial Fibrillation

Lecture: Catheter Ablation of Atrial Fibrillation

Nihon University, Tokyo, Japan (Dr. Ichiro Watanabe), July 2, 2004

Demonstration of Catheter Ablation of Atrial Fibrillation

Iwate Medical University, Morioka, Japan (Dr. Kouhei Kawazoe), June 3-4, 2004

Demonstration of Catheter Ablation of Atrial Fibrillation

Nihon University, Tokyo, Japan (Dr. Ichiro Watanabe), June 2, 2004

Demonstration of Catheter Ablation of Macroreentrant Left Atrial Tachycardia Following Ablation of Atrial Fibrillation

Sapporo Medical University, Sapporo, Japan (Dr. Kikuya Uno), May 31-June 1, 2004

Demonstration of Catheter Ablation of Macroreentrant Atrial Tachycardia

Lecture: Catheter Ablation of Atrial Fibrillation

Iwate Medical University, Morioka, Japan (Dr. Kouhei Kawazoe), April 1-2, 2004

Demonstration of Catheter Ablation of Atrial Fibrillation

Demonstration of Catheter Ablation of Macroreentrant Left Atrial Tachycardia

Lecture: Catheter Ablation of Focal Atrial Fibrillation

Toyohashi Heart Center, Toyohashi, Japan (Dr. Suzuki), March 31, 2004

Demonstration of Catheter Ablation of Focal Atrial Fibrillation

Lecture: Catheter Ablation Using Computerized Magnetic Catheter Maneuvering System

Fukuoka University, Hakata, Japan (Dr. Koichiro Kumagai), March 30, 2004

Demonstration of Catheter Ablation of Focal Atrial Fibrillation

Lecture: Catheter Ablation Using Computerized Magnetic Catheter Maneuvering System

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Nihon University, Tokyo, Japan (Dr. Ichiro Watanabe), January 9, 2004  
Demonstration of Catheter Ablation of Atrial Fibrillation

Nihon University, Tokyo, Japan (Dr. Ichiro Watanabe), January 9, 2004  
Demonstration of Catheter Ablation of Atrial Fibrillation

Owari General Hospital, Owari, Japan (Dr. Takumi Yamada), January 8, 2004  
Demonstration of Catheter Ablation of Atrial Fibrillation

Himeji Brain Heart Center, Himeji, Japan (Dr. Kohei Yamashiro), January 7, 2004  
Lecture and Live Demonstration of Catheter Ablation of Atrial Fibrillation

Co-Director, Post Graduate Course: Electro Anatomy of the Heart, Morioka, Japan, 8/27-29/2003  
Lecture and Live Demonstration: Catheter Ablation of Paroxysmal Atrial Fibrillation  
Lecture and Live Demonstration: Catheter Ablation of Macroreentrant Atrial Tachycardia

Nihon University, Tokyo, Japan (Dr. Shinobu Imai), June 4, 2003  
Lecture: Catheter Ablation of Ventricular Tachycardia

Co-Director, Post Graduate Course: Electro Anatomy of the Heart, Morioka, Japan, 8/21-23/2002  
Lecture and Live Demonstration: Catheter Ablation of Paroxysmal Atrial Fibrillation  
Lecture and Live Demonstration: Catheter Ablation of Macroreentrant Atrial Tachycardia

Iwate Medical University, Morioka, Japan (Dr. Kouhei Kawazoe), May 30-31, 2002  
Demonstration of Catheter Ablation of Macroreentrant Atrial Tachycardia  
Demonstration of Catheter Ablation of Focal Atrial Fibrillation  
Lecture: Catheter Ablation of Focal Atrial Fibrillation

Chula Hospital, Bangkok, Thailand (Dr. Suraphan), March 1, 2002  
Demonstration of Catheter Ablation of Accessory AV Pathway  
Lecture: Catheter Ablation of Macroreentrant Atrial Tachycardia

Chiangmai Hospital, Chiangmai, Thailand (Dr. Thanawat), February 29, 2002  
Demonstration of Catheter Ablation of Accessory AV Pathway  
Lecture: Catheter Ablation of Macroreentrant Atrial Tachycardia

Siriraj Hospital, Bangkok, Thailand (Dr. Charn), February 27, 2002  
Demonstration of Catheter Ablation of Focal Atrial Fibrillation

Singapore General Hospital, National Heart Center, Singapore (Dr. Wee Siong Teo), February 25, 2002  
Lecture: Catheter Ablation of Paroxysmal Atrial Fibrillation  
Demonstration of Catheter Ablation of Focal Atrial Fibrillation

Kameda General Hospital, Kamogawa, Japan (Dr. Makoto Suguki), February 22, 2002  
Demonstration of Catheter Ablation of Epicardial Accessory AV Pathway

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Kameda General Hospital, Kamogawa, Japan (Dr. Makoto Suguki), February 22, 2002  
Demonstration of Catheter Ablation of Atrial Flutter

Iwate Medical University, Morioka, Japan (Dr. Kouhei Kawazoe), February 21, 2002  
Demonstration of Catheter Ablation of Macroreentrant Atrial Tachycardia  
Demonstration of Catheter Ablation of Focal Atrial Fibrillation  
Lecture: Catheter Ablation of Focal Atrial Fibrillation

Sendai City Hospital, Sendai, Japan (Dr. Odakura), February 20, 2002  
Demonstration of Catheter Ablation of Macroreentrant Atrial Tachycardia Following Repair of  
Tetralogy of Fallot  
Lecture: Radiofrequency catheter ablation of macroreentrant atrial tachycardia

Iwate Medical University, Morioka, Japan (Dr. Kouhei Kawazoe), February 19, 2002  
Demonstration of Catheter Ablation of Macroreentrant Atrial Tachycardia  
Demonstration of Catheter Ablation of Focal Atrial Fibrillation  
Lecture: Catheter Ablation of Focal Atrial Fibrillation

Batra Hospital & Medical Research Center, New Dehli, India (Dr. Balbir Singh), October 8-9, 2001  
Demonstration of Catheter Ablation of Ventricular Tachycardia  
Demonstration of Catheter Ablation of Left Atrial Tachycardia

AIIMS, New Dehli, India (Dr. Talwar), October 7, 2001  
Demonstration of Catheter Ablation of Idiopathic Left Ventricular Tachycardia  
Demonstration of Catheter Ablation of Macroreentrant Atrial Tachycardia Following Repair of  
Tetralogy of Fallot  
Lecture: Radiofrequency catheter ablation of ventricular tachycardia associated with coronary  
artery disease

Iwate Medical University, Morioka, Japan (Dr. Kouhei Kawazoe), October 2-4, 2001  
Demonstration of Catheter Ablation of Macroreentrant Atrial Tachycardia  
Demonstration of Catheter Ablation of Focal Atrial Fibrillation

AIIMS, New Dehli, India (Dr. Talwar), October 1, 2001  
Demonstration of Catheter Ablation of Idiopathic Left Ventricular Tachycardia  
Demonstration of Catheter Ablation of Macroreentrant Atrial Tachycardia Following Repair of  
Tetralogy of Fallot  
Lecture: Radiofrequency catheter ablation of ventricular tachycardia associated with coronary  
artery disease

Yamaguchi University School of Medicine, Ube, Japan (Dr. Akihiko Shimizu), May 31, 2001  
Lecture: Catheter Ablation of Macroreentrant Atrial Tachycardia  
Demonstration of Catheter Ablation of Ventricular Tachycardia

Iwate Medical University, Morioka, Japan (Dr. Kouhei Kawazoe), May 23-24, 2001  
Demonstration of Catheter Ablation of Macroreentrant Atrial Tachycardia and Atrial Flutter  
Lecture: Catheter Ablation of Macroreentrant Atrial Tachycardia and Atrial Flutter

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National Heart Center, Singapore (Dr. Wee Siong Teo), January 19, 2001  
Lecture: Catheter Ablation of Paroxysmal Atrial Fibrillation  
Demonstration of Catheter Ablation of Focal Atrial Fibrillation

Royal Melbourne Hospital, Melbourne, Victoria, Australia (Prof. Jonathan M. Kalman), January 15-16, 2001  
Lecture: Catheter Ablation of Paroxysmal Atrial Fibrillation  
Demonstration of Catheter Ablation of Focal Atrial Fibrillation

Chang Gung Medical College and Hospital, Taipei, Taiwan (Prof. Delon Wu), October 17-19, 2000  
Lecture: Catheter Ablation of Ventricular Tachycardia  
Demonstration of Catheter Ablation of Ventricular Tachycardia and Macroreentrant Atrial Tachycardia

National Taipei University Hospital, Taipei, Taiwan (Prof. Shoen K Stephen Huang) October 16, 2000  
Demonstration of Catheter Ablation of Macroreentrant Atrial Tachycardia

Iwate Medical University, Morioka, Japan (Dr. Katsuhiko Hiramori), May 31 – June 1, 2000  
Demonstration of Catheter Ablation of Macroreentrant Atrial Tachycardia

Sino-China-Japan Friendship Hospital, Beijing, China (Prof. Ma), February 18, 2000  
Lecture: Catheter Ablation of Macroreentrant Atrial Tachycardia  
Demonstration of Catheter Ablation of Atrial Flutter

Chao Yang Hospital, Beijing, China, February 17, 2000  
Lecture: Catheter Ablation of Macroreentrant Atrial Tachycardia  
Demonstration of Catheter Ablation of Atrial Flutter

Fuwai Hospital, Beijing, China, February 16, 2000  
Lecture: Catheter Ablation of Macroreentrant Atrial Tachycardia  
Demonstration of Catheter Ablation of Atrial Flutter

Royal Melbourne Hospital, Melbourne, Victoria, Australia (Prof. Jonathan M. Kalman), February 14, 2000  
Lecture: Catheter Ablation of Macroreentrant Atrial Tachycardia  
Demonstration of Catheter Ablation of Atrial Flutter

ChangGung Medical College and Hospital, Taipei, Taiwan (Prof. Delon Wu), December 14, 1999  
Demonstration of Catheter Ablation of Atrial Flutter

Saitama University School of Medicine, Saitama, Japan (Dr. Kazuo Matsumoto), October 21, 1999  
Demonstration of Catheter Ablation of Focal Atrial Fibrillation

Iwate Medical University, Morioka, Japan (Dr. Katsuhiko Hiramori), October 18-19, 1999  
Demonstration of Catheter Ablation of Macroreentrant Atrial Tachycardia

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Singapore General Hospital, Singapore (Dr. Teo), August 5, 1999  
Demonstration of Catheter Ablation of Atrial Flutter

Nippon Medical School, Tokyo, Japan (Professor & President Hirokazu Hayakawa, MD), April 19, 1999  
Lecture in the Medical Association of Nippon Medical School: Catheter Ablation of Atrial Fibrillation  
Demonstration of Catheter Ablation of Atrial Flutter

Iwate Medical University, Morioka, Japan (Dr. Katsuhiko Hiramori), September 24, 1998  
Demonstration of Catheter Ablation of Ventricular Tachycardia

Gunma Cardiovascular Center, Maebashi, Japan (Dr. Akihiko Nogami), September 22, 1998  
Demonstration of Catheter Ablation of AVNRT and Discuss Recent Advances of Catheter Ablation of Ventricular Tachycardia

Tsuchiura General Hospital, Tsukuba, Japan (Dr. Yoshito Iesaka), September 18, 1998  
Demonstration of Catheter Ablation of Accessory AV Pathway and Atrial Flutter

Saitama University School of Medicine, Saitama, Japan (Dr. Kazuo Matsumoto), June 24, 1998  
Demonstration of Catheter Ablation of Ventricular Tachycardia

Keio University School of Medicine, Tokyo, Japan (Dr. Hideo Mitamura), June 23, 1998  
Demonstration of Catheter Ablation of Accessory AV Pathway

Iwate Medical University, Morioka, Japan (Professors Hiramori & Kawazoe), June 17-19, 1998  
Discuss Recent Advances of Catheter Ablation of Atrial Flutter/Fibrillation  
Demonstration of Catheter Ablation of Ventricular Tachycardia and AV Nodal Reentrant tachycardia

Nippon Medical School, Tokyo Japan (Professor & President Hirokazu Hayakawa, MD), June 15, 1998  
Lecture in the Medical Association of Nippon Medical School: Catheter Ablation of Ventricular Tachycardia Associated with Coronary Artery Disease Using a Noble 3-D Electro-anatomical Mapping System  
Demonstration of Catheter Ablation of Atrial Flutter

Hiroshima University School of Medicine, Hiroshima, Japan (Dr. Goro Kajiyama), June 12-13, 1997  
Discuss Recent Advances of Catheter Ablation of Atrial Flutter/Fibrillation  
Demonstration of Catheter Ablation of Atrial Flutter

Fukui General Hospital, Fukui, Japan (Dr. Toshihiro Misawa), June 9, 1997  
Demonstration of Catheter Ablation of Accessory AV Pathways

Nihon University, Tokyo, Japan (Dr. Hiroshi Yagi), June 4, 1997  
Demonstration of Catheter Ablation of Atrial Flutter

Nihon University, Tokyo, Japan (Dr. Ichiro Watanabe), June 3, 1997

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Discuss Recent Advances of New Mapping Systems  
Demonstration of Catheter Ablation of Accessory AV Pathways

Nihon University, Tokyo, Japan (Dr. Hiroshi Yagi), January 22, 1997  
Demonstration of Catheter Ablation of Accessory AV Pathway  
Discuss Recent Advances of Catheter Ablation

Keio University School of Medicine, Tokyo, Japan (Dr. Hideo Mitamura), January 21, 1997  
Demonstration of Catheter Ablation of Accessory AV Pathway

Nihon University, Tokyo, Japan (Dr. Ichiro Watanabe), January 20, 1997  
Discuss Recent Advances of New Mapping Systems  
Demonstration of Catheter Ablation of Atrial Flutter

Sendai City Hospital, Sendai, Japan (Dr. Tetsuo Yagi), January 16, 1997  
Demonstration of Catheter Ablation of Atrial Flutter  
Discuss Recent Advances of Catheter Ablation of Atrial Flutter/Fibrillation

University Hospital Utrecht, Utrecht, The Netherlands (Dr. Fred HM Wittkamp), October 3, 1996  
Demonstration of Catheter Ablation of Atrial Flutter  
Discuss Recent Advances of Catheter Ablation of Atrial Flutter

Tottori University School of Medicine, Yonago, Japan (Dr. Osamu Igawa), June 27, 1996  
Demonstration of Catheter Ablation of Accessory AV Pathway and Ventricular Tachycardia

Hiroshima University School of Medicine, Hiroshima, Japan (Dr. Goro Kajiyama), June 21, 1996  
Demonstration of Catheter Ablation of Ventricular Tachycardia

Tottori University School of Medicine, Yonago, Japan (Dr. Osamu Igawa), February 8, 1996  
Demonstration of Catheter Ablation of Accessory AV Pathway

Saitama University School of Medicine, Saitama, Japan (Dr. Hiroshi Matsuo), February 7, 1996  
Demonstration of Catheter Ablation of Atrial Flutter  
Discuss Recent Advances of Catheter Ablation of Atrial Flutter

Sendai City Hospital, Sendai, Japan (Dr. Tetsuo Yagi), February 5, 1996  
Demonstration of Catheter Ablation of Atrial Flutter  
Discuss Recent Advances of Catheter Ablation of Atrial Flutter

Hiroshima University School of Medicine, Hiroshima, Japan (Dr. Goro Kajiyama), May 15, 1995  
Demonstration of Catheter Ablation of Atrial Flutter  
Discuss Recent Advances of Clinical Electrophysiology and Catheter Ablation

Saitama University School of Medicine, Saitama, Japan (Dr. Kazuo Matsumoto), May 14, 1995  
Demonstration of Catheter Ablation of Ventricular Tachycardia  
Discuss Recent Advances of Clinical Electrophysiology and Catheter Ablation  
Nihon University, Tokyo, Japan (Dr. Hiroshi Yagi), May 12, 1995

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Demonstration of Catheter Ablation of Accessory AV Pathway  
Discuss Recent Advances of Clinical Electrophysiology and Catheter Ablation

The Heart Institute of Japan, Tokyo Women's Medical College, Tokyo, Japan (Dr. Hiroshi Kasanuki), February 15, 1994

Demonstration of Catheter Ablation of Accessory AV Pathway  
Discuss Recent Advances of Clinical Electrophysiology and Catheter Ablation

Nihon University, Tokyo, Japan (Dr. Hiroshi Yagi), February 12, 1994

Demonstration of Catheter Ablation of Accessory AV Pathway  
Discuss Recent Advances of Clinical Electrophysiology and Catheter Ablation

Hiroshima University School of Medicine, Hiroshima, Japan (Dr. Goro Kajiyama), February 8, 1994

Demonstration of Catheter Ablation of Slow AV Nodal Pathway  
Discuss Recent Advances of Clinical Electrophysiology and Catheter Ablation

Nihon University, Tokyo, Japan (Dr. Hiroshi Yagi), July 12, 1994

Demonstration of Catheter Ablation of Accessory AV Pathway  
Discuss Recent Advances of Clinical Electrophysiology and Catheter Ablation

Hiroshima University School of Medicine, Hiroshima, Japan (Dr. Goro Kajiyama), July 14, 1994

Demonstration of Catheter Ablation of Accessory AV Pathway  
Discuss Recent Advances of Clinical Electrophysiology and Catheter Ablation

Hiroshima University School of Medicine, Hiroshima, Japan (Dr. Goro Kajiyama), May 25, 1992

Demonstration of Catheter Ablation of Accessory AV pathways

The Heart Institute of Japan, Tokyo Women's Medical College, Tokyo, Japan (Dr. Hiroshi Kasanuki), November 4, 1992

Demonstration of Catheter Ablation of Accessory AV Pathway

## IX. PROFESSIONAL SERVICE

### Service to professional societies

Japanese Society of Cardiac Pacing and Electrophysiology (JASPE):  
Board of Trustees 0/01/2004

### Editorial services – Manuscript Reviewer

Journal of American College of Cardiology  
Circulation  
Journal of Cardiovascular Electrophysiology  
PACE  
Cardiovascular Research



European Heart Journal  
Journal of Interventional Cardiovascular Electrophysiology  
Heart Rhythm  
Journal of Arrhythmia  
Journal of Atrial Fibrillation

**Invited and special lectures of clinical and service relevance**

Kumamoto Arrhythmia Conference, Hiroshima, Japan (Dr. Masao Yoshizumi), June 06, 2007  
Lecture: Robotic Catheter Mapping/Ablation of Complex Arrhythmias

Kumamoto Arrhythmia Conference, Kumamoto, Japan (Dr. Hisao Ogawa), August 31, 2003  
Lecture: Catheter Ablation of Atrial Fibrillation

Nihon University, Tokyo, Japan (Dr. Ichiro Watanabe), August 25, 2003  
Lecture: Catheter Ablation of Ventricular Tachycardia

Nihon University, Tokyo, Japan (Dr. Ichiro Watanabe), June 6, 2002  
Lecture: Catheter Ablation of Macroreentrant Atrial Tachycardia

Nihon University, Tokyo, Japan (Dr. Shinobu Imai), June 5, 2002  
Lecture: New Catheter Mapping Systems

Kumamoto Arrhythmia Conference, Kumamoto, Japan (Dr. Hisao Ogawa), June 1, 2002  
Lecture: Catheter Ablation of Complex Atrial Tachycardia

University of Pavia, Pavia, Italy (Dr. Emilio Vanoli), December 5, 2001  
Lecture: Radiofrequency catheter ablation of ventricular tachycardia associated with coronary artery disease

University of Utrecht, Utrecht, The Netherlands (Dr. Fred Wittkampf), November 29, 2001  
Lecture: Radiofrequency catheter ablation of macroreentrant atrial tachycardia

Hiroshima University School of Medicine, Hiroshima, Japan (Dr. Taijiro Sueda), June 1, 2001  
Lecture: Catheter Ablation of Paroxysmal Atrial Fibrillation

Westmead University Hospital, Westmead, Sydney, Australia (Prof. David Ross), January 17, 2001  
Lecture: Radiofrequency catheter ablation of paroxysmal atrial fibrillation

Hiroshima University School of Medicine, Hiroshima, Japan (Dr. Taijiro Sueda), June 6, 2000  
Discuss Recent Advances of Catheter Ablation of Complex Atrial Tachycardia

Westmead University Hospital, Westmead, Sydney, Australia (Prof. David Ross), February 15, 2000  
Lecture: Radiofrequency catheter ablation using a saline irrigated electrode

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National Yang-Ming University, Veteran General Hospital, Taipei, Taiwan (Prof. Shih-Ann Chen),  
December 13, 1999

Lecture: Basic Concept of Radiofrequency Catheter Ablation

Sapporo Medical School, Sapporo, Japan (Dr. Kikuya Uno), October 22, 1999

Discuss Recent Advances of Catheter Ablation of Atrial Fibrillation

Brigham and Women's Hospital, Boston, MA (Dr. William G. Stevenson), July 15-16, 1999

Lecture: Basic Concept of Radiofrequency Catheter Ablation

Hiroshima University School of Medicine, Hiroshima, Japan (Dr. Taijiro Sueda), May 28, 1999

Discuss Recent Advances of Catheter Ablation of Atrial Fibrillation

Hiroshima University School of Medicine, Hiroshima, Japan (Dr. Taijiro Sueda), June 25, 1998

Discuss Recent Advances of Catheter Ablation of Ventricular Tachycardia

Aichi Medical University, Aichi, Japan (Dr. Tohru Iwa), June 29, 1996

Discuss Recent Advances of Catheter Ablation of Atrial Flutter and Atrial Fibrillation

Nihon University, Tokyo, Japan (Dr. Ichiro Watanabe), June 28, 1996

Discuss Recent Advances of Catheter Ablation Using an Irrigated Tip Electrode

The Heart Institute of Japan, Tokyo Women's Medical College, Tokyo, Japan (Dr. Hiroshi  
Kasanuki), June 26, 1996

Discuss Recent Advances of Catheter Ablation Using an Irrigated Tip Electrode

Nihon University, Tokyo, Japan (Dr. Hiroshi Yagi), June 25, 1996

Discuss Recent Advances of Catheter Ablation Using an Irrigated Tip Electrode

Nihon University, Tokyo, Japan (Dr. Ichiro Watanabe), February 8, 1996

Discuss Recent Advances of Catheter Ablation of Atrial Tachyarrhythmias

Hiroshima University School of Medicine, Hiroshima, Japan (Dr. Taijiro Sueda), February 6, 1996

Discuss Recent Advances of Catheter Ablation of Atrial Flutter

Nihon University, Tokyo, Japan (Dr. Hiroshi Yagi), February 2, 1996

Discuss Recent Advances of Catheter Ablation of Atrial Flutter

Keio University School of Medicine, Tokyo, Japan (Dr. Satoshi Ogawa), May 11, 1995

Discuss Recent Advances of Clinical Electrophysiology and Catheter Ablation

Tottori University School of Medicine, Yonago, Japan (Dr. Osamu Igawa), January 21, 1991

Discuss Recent Advances of Clinical Electrophysiology and Catheter Ablation

**X. MEMBERSHIPS, HONORS, AWARDS and SPECIAL RECOGNITION**

## **Scholarly, Professional and Scientific Memberships**

American Heart Association

- Circulation
- Clinical Cardiology

Heart Rhythm Society

Japanese Circulation Society

Japanese College of Cardiology

Japanese Heart Rhythm Society

Japanese Electrophysiology Society

Japanese Society of Interventional Cardiology

Japanese Society of Internal Medicine

Japanese Society of Medical Ultrasonics

Board Trustee Member of Japanese Heart Rhythm Society

## **Awards, Honors, Special Recognition**

Medtronic Japan Fellowship Award for Young Japanese Investigator	05/10/1990
NASPE (North American Society of Pacing and Electrophysiology) Young Investigator Award	05/08/1993
American Heart Association, Samuel A. Levine Young Clinical Investigator Awards Finalist	11/16/1994
Sponsor for Hiroshi Aoyama, MD, PhD NASPE (North American Society of Pacing and Electrophysiology) Young Investigator Award	05/15/2003
Provost's Research Award for Senior Faculty The University of Oklahoma Health Sciences Center	04/23/2007

## **Consultantships**

Biosense Webster, Inc

ProRhythm, Inc

CardioFocus, Inc

EndoSense, Inc

St. Jude Medical, Inc

AtriCure, Inc

Stereotaxis, Inc.

CryoCor, Inc

Voyage Medical, Inc.