

Robert W. Stadler

Medtronic, Inc
8200 Coral Sea Street NE
Mounds View, MN 55112
(763) 526-0261

4010 Evergreen Place
Shoreview, MN 55126
(651) 486-9490
robert.stadler@medtronic.com

- Areas of Expertise** Algorithms for cardiac rhythm classification, electrophysiology, digital signal processing, physiological monitoring, medical device design and testing
- Education**
- Harvard University / Massachusetts Institute of Technology** Cambridge, MA
Doctor of Philosophy in Medical Engineering, May 1996. GPA 4.9/5.0.
Thesis: "Noninvasive Ultrasound Techniques for Assessment of Early Atherosclerosis."
- Massachusetts Institute of Technology** Cambridge, MA
Master of Science in Electrical Engineering, September 1992. GPA 4.9/5.0.
Thesis: "Optimally Directive Microphones for Hearing Aids."
- Case Western Reserve University** Cleveland, OH
Bachelor of Science in Biomedical Engineering, May 1990. GPA 3.9/4.0.
- Experience**
- Medtronic, Inc. Cardiac Rhythm Disease Management** Minneapolis, MN
Technical Fellow: September 2008
Senior Principal Scientist: August 2004 – Present
- Currently leading a team designing a new arrhythmia discrimination algorithm for ICDs. Developed risk reduction plan. Currently planning first human clinical experience.
 - 6 months at Bakken Research Center, Maastricht NL: European clinical experience, studied neural stimulation in animal models, designed subcutaneous monitoring algorithms.
 - Managed a team to design and test an arrhythmia discrimination algorithm for a subcutaneous ICD. Contributed to clinical study design and execution.
- Principal Scientist:** May 1999-July 2004
Designed adaptive algorithms for implanted devices to discriminate heart rhythms and to monitor hemodynamics. Evaluated performance on large databases and specified requirements for final implementation. Designed and executed protocols for clinical data collection.
- Senior Scientist:** March 1997-April 1999
Developed new methods of hemodynamic monitoring from implanted devices and evaluated performance in animal models.
- Product Contributions**
- Algorithm for discrimination of sinus tachycardia in current Medtronic ICDs
 - Algorithm for OptiVol fluid status monitoring
 - Algorithms for detection of VT and asystole in next Reveal upgrade
 - Contributed to "Lead Integrity Alert" algorithm in current Medtronic ICDs
 - Algorithm for detection of cardiac ischemia from ICDs, currently in 175 patient clinical trial
- US Patents** 29 issued, ~30 pending.

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Selected Publications

Swerdlow CD, Gunderson BD, Ousdigian KT, Abeyratne A, Stadler RW, Gillberg GM, Patel AS, . Ellenbogen KA. Downloadable algorithm to reduce inappropriate shocks caused by fractures of implantable cardioverter-defibrillator leads. *Circulation* 2008; 118:2122-2129.

Brignole M, Bellardine Black CL, Thomsen PE, Sutton R, Moya A, Stadler RW, Cao J, Messier M, Huikuri HV. Improved arrhythmia detection in implantable loop recorders. *J Cardiovasc Electrophysiol.* 2008; 19: 928-934.

Yu CM, Wang L, Chau E, Chan RH, Kong SL, Tang MO, Christensen J, Stadler RW, Lau CP. Intrathoracic impedance monitoring in patients with heart failure. Correlation with fluid status and feasibility of early warning preceding hospitalization. *Circulation* 2005; 112: 841-848.

Adamson PB, Smith AL, Abraham WT, Kleckner KJ, Stadler RW, Shih A, Rhodes MM. "Continuous autonomic assessment in patients with symptomatic heart failure: Prognostic value of heart rate variability measured by an implantable cardiac resynchronization device. *Circulation.* 2004; 110: 2389-2394.

Stadler RW, Gunderson BD, Gillberg JM. "An adaptive interval-based algorithm for withholding ICD therapy during sinus tachycardia." *PACE.* 2003; 26:1189-1201.

Stadler RW. "Permanently Implantable ST-Segment Monitoring." *Journal of Electrocardiography.* 2002; 35 (Supplement): 225-228.

Theres H, Stadler RW, Stylos L, Glos M, Leuthold T, Baumann G, Nelson SD, Krucoff MW. "Comparison of electrocardiogram and intrathoracic electrogram signals for detection of ischemic ST-segment changes during normal sinus and ventricular paced rhythms." *Journal of Cardiovascular Electrophysiology.* 2002; 13; 990-995.

Stadler RW, Lu SN, Nelson SD, Stylos L. "A real-time ST-segment monitoring algorithm for implantable devices." *Journal of Electrocardiography.* 2001; 34 (Supplement): 119-126.

Stadler RW, Ibrahim SF, Lees RS. "Measurement of the time course of peripheral vasoactivity: Results in cigarette smokers." *Atherosclerosis.* 1998; 138: 197-205.

Stadler RW, Taylor AJ, Lees RS. "Comparison of B-mode, M-mode, and echo-tracking methods for measurement of the arterial distension waveform." *Ultrasound in Medicine and Biology.* 1997; 23: 879-887.

Stadler RW, Ibrahim SF, Lees RS. "Peripheral vasoreactivity in familial hypercholesterolemic subjects treated with Heparin-Induced Extracorporeal LDL Precipitation (HELP)." *Atherosclerosis.* 1997; 128: 241-249.

Stadler RW, Karl WC, Lees RS. "New methods for arterial diameter measurement from B-mode images." *Ultrasound in Medicine and Biology.* 1996; 22: 25-34.

Stadler RW, Rabinowitz WM. "On the potential of fixed arrays for hearing aids," *Journal of the Acoustical Society of America.* 1993; 94: 1332-1342.