

MARTA GAIA ZANCHI

Medical Innovation Consultant

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BIOGRAPHY

Marta Gaia Zanchi is Principal Consultant and owner at Medinnovo, a medical innovation consulting company whose mission is to help organizations deliver new medical technologies into patient care. Prior to founding Medinnovo, she was a consultant for the Nuclear and Cardiac divisions of a clinical institution, a system design engineer for a semiconductor company in Silicon Valley, and a researcher developing new medical technologies in partnership with organizations in Italy, Canada, and the United States. More recently, she worked as a product management professional with the business development group of a privately held wireless technology company in Sunnyvale, California, where she was responsible for bridging across different functional aspects of the company to develop new products and product positioning. Dr. Zanchi is a top graduate in biomedical engineering and electrical engineering from Politecnico Di Milano (Italy) and Stanford University (California, U.S.). Her work at both universities focused on the development of innovative medical devices and systems for the diagnosis and staging of diseases, which led to several scientific publications, two research grants, and a patent on a novel RF control feedback techniques in Magnetic Resonance Imaging. She was awarded the Politecnico Di Milano's highest student honor and two fellowships from Stanford University, from the Electrical Engineering Department and the Stanford Biodesign program, respectively. She holds a certificate in entrepreneurship and an award from the Stanford Graduate School of Business in Stanford University.



During her PhD studies, she was a Medical Device Fellow, Reviewer and Electrical Engineer with the U.S. Food and Drug Administration (FDA). Here she reviewed 510(k) applications with the Office of Device Evaluation, and researched on the electromagnetic effects of magnetic resonance imaging with the Office of Science and Engineering Laboratory. Since 2010, she applies her expertise on regulation working with the Stanford University and Northwestern University research team on the InHealth study "A Comprehensive Analysis of the FDA 510(k) Process," led by investigators John Linehan, PhD, and Jan Pietzsch, PhD.

EMPLOYMENT

- 2011-pres. **Principal Consultant and Owner.** Medinnovo, San Jose, CA
- 2010-pres. **Consultant and Researcher,** 510(k).net Research Study sponsored by InHealth
- 2010-2011 **Product Marketing Engineer.** LitePoint Corporation, Sunnyvale, CA
- 2007-2010 **Research Assistant.** MRSRL, Stanford University, Stanford, CA
- 05-07/2009 **Medical Device Fellow, Reviewer, Electrical Engineer.** FDA, Silver Springs, MD
- 06-09/2007 **System Design Intern.** Volterra Semiconductors Corporation, Fremont, CA
- 2005-2006 **Research Assistant.** Radiation Detectors Laboratory, Politecnico di Milano, Italy
- 06-09/2004 **Visiting Scholar, Consultant.** Nuclear Medicine, OORR Hospitals, Bergamo, Italy
- 07-09/2003 **Visiting Scholar, Researcher.** McGill University, Montreal, Canada
- 06-09/2002 **Visiting Scholar, Consultant.** Cardiac Surgery, OORR Hospitals, Bergamo, Italy

EDUCATION

- 2006-2010 **PhD, Electrical Engineering,** Stanford University, CA
Thesis topic: Cartesian feedback control for MRI transmitter array systems
- 2003-2005 **MS, Electrical Engineering,** Cum Laude, Politecnico di Milano, Italy
Thesis topic: Imaging system based on Si-Drift detectors for applications in nuclear medicine
- 2000-2003 **BS, Biomedical Engineering,** Cum Laude, Politecnico di Milano, Italy
Thesis topic: Near infrared spectroscopy for in vivo measurement of myoglobin oxygenation

TRAINING

- **Trained in the foundations of new venture administration** at the Stanford Graduate School of Business during the Summer Institute for Entrepreneurship (2008)
- **Trained in technical and professional writing** at the Stanford School of Engineering (2007-2010)

HONORS & AWARDS

- 2010: Engineering Poster Awards, International Society for Magnetic Resonance in Medicine
- 2009: Medical Device Fellowship, U.S. Food & Drug Administration & Stanford Biodesign
- 2008: Garnier Fellowship, Stanford Graduate School of Business
- 2008, 2009, 2010: Travel Awards, International Society for Magnetic Resonance in Medicine
- 2006: Forbes Fellowship, Electrical Engineering Department, Stanford University
- 2005, 2006: Travel Awards, IEEE Nuclear Science Symposium
- 2005: Best Graduates Gold Medal, Politecnico di Milano
- 2005: Accenture Award, Politecnico di Milano

RESEARCH GRANT EXPERIENCE

- **Wrote a grant proposal awarded \$80,000** for studies associated with a small animal PET system insert for a MR system for simultaneous small animal PET/MR imaging
- **Participated to the writing of a European grant proposal awarded 300,000€** (first of six rounds of funding totaling 1,715,000€) and developed partnerships with European industries and local clinical institutions to design a high-resolution Anger camera for diagnosis and staging of cancers

PATENTS

- M.G. Zanchi, G.C. Scott, "Frequency Offset Cartesian Feedback System," Application No. 12/464,010, filed with the United States Patent and Trademark Office on May 11, 2009.

JOURNAL AND CONFERENCE PUBLICATIONS

- M.G. Zanchi, J.M. Pauly, G.C. Scott, "Frequency-Offset Cartesian Feedback for MRI Power Amplifier Linearization," *IEEE Transactions on Medical Imaging*, vol. 30, issue 2, pp. 512-22, 2010.
- M.G. Zanchi, J.M. Pauly, G.C. Scott, "Frequency-Offset Cartesian Feedback Based on Polyphase Difference Amplifiers," *IEEE Transactions on Microwave Theory and Techniques*, vol. 58, issue 5, pp. 1297-1308, 2010.
- M.G. Zanchi, J.M. Pauly, G.C. Scott, "An Optically-Coupled System for Monitoring of MRI-Induced RF Currents into Long Conductors," *IEEE Transactions on Medical Imaging*, vol. 29, issue 1, pp. 169-178, 2010.
- M.G. Zanchi, P. Stang, J.M. Pauly, G.C. Scott, "Tuning the Output Impedance of RF Power Amplifiers with Frequency-Offset Cartesian Feedback," Proceedings of ISMRM 18th Scientific Meeting, Sweden, 2010.
- M.G. Zanchi, P. Stang, J.M. Pauly, G.C. Scott, "On Stability and Performance of Frequency-Offset Cartesian Feedback for RF Power Amplifiers of MRI Transmitter Arrays," Proceedings of ISMRM 18th Scientific Meeting, Sweden, 2010.
- M.G. Zanchi, J.M. Pauly, G.C. Scott, "Frequency Offset Cartesian Feedback Control System for MRI Power Amplifier," Proceedings of ISMRM 17th Scientific Meeting, Hawaii, 2009.
- M.G. Zanchi, J.M. Pauly, G.C. Scott, "Feasibility of Active Cable Trap to Attenuate MRI-Induced RF Currents," Proceedings of ISMRM 17th Scientific Meeting, Hawaii, 2009.
- M.G. Zanchi, R. Venook, J.M. Pauly, G.C. Scott, "An Optically-Coupled System for Quantitative Monitoring of MRI-Induced RF Currents into Long Conductors," Proceedings of ISMRM 16th Scientific Meeting, Canada, 2008.
- C. Fiorini, A. Gola, M. Porro, M.G. Zanchi, "The electronics readout and the DAQ system of the DRAGO Anger Camera," *Nuclear Instruments & Methods in Physics Research Section A*, vol. 571, pp. 339-342, 2007.
- C. Fiorini, A. Gola, M.G. Zanchi, A. Longoni, H. Soltau, "Silicon Drift Photodetectors for scintillation readout in medical imaging," *Nuclear Instruments & Methods in Physics Research Section A*, vol. 571, pp. 126-129, 2007.
- A. Gola, C. Fiorini, M. Porro, M.G. Zanchi, "Readout Electronics and DAQ System of DRAGO Anger Camera," *Nuclear Science Symposium Conference Record 2006*, vol. 3, pp. 1334-1337.
- C. Fiorini, A. Gola, M.G. Zanchi, A. Longoni, M. Porro, P. Lechner, H. Soltau, L. Strüder, "DRAGO: A Gamma-Ray Imager for Medical Imaging," *Nuclear Science Symposium Conference Record 2006*, vol. 6, pp. 3581-3584.
- C. Fiorini, M.G. Zanchi, A. Gola, A. Longoni, "Comparison of Performance of Scintillation Detectors based on different Photodetectors," presented at 1st Symposium on Advanced Molecular Imaging Techniques in Detection, Diagnosis, Therapy and Follow-Up of Prostate Cancer, Roma, Italy, 2005.
- C. Fiorini, A. Gola, M.G. Zanchi, P. Lechner, H. Soltau, "Gamma-ray Spectroscopy with LaBr:Ce Scintillator Readout by a Silicon Drift Detector," *IEEE Transaction on Nuclear Science*, vol. 53 (4-2), pp. 2392-2397, 2006.
- C. Fiorini, A. Gola, A. Longoni, M.G. Zanchi, A. Restelli, F. Perotti, P. Lechner, H. Soltau, L. Strüder, "A large area monolithic array of silicon drift detectors for medical imaging," *Nuclear Instruments & Methods in Physics Research Section A*, vol. 568, pp. 96-100, 2006.