

Peer-reviewed Publications:

R.M. Wiard, O.T. Inan, B. Argyres, M. Etemadi, G.T.A. Kovacs, and **L. Giovangrandi**, *Automatic Detection of Motion Artifacts in the Ballistocardiogram Measured on a Modified Bathroom Scale*, Medical and Biological Engineering and Computing, *accepted*.

M.Q. Chen, R.H. Whittington, P.W. Day, B.K. Kobilka, **L. Giovangrandi**, and G.T.A. Kovacs, *A Device for Separated and Reversible Co-culture of Cardiomyocytes*, Biotechnology Progress, 26(4), 1164-1171, 2010.

O.T. Inan, G.T.A. Kovacs, and **L. Giovangrandi**, *Evaluating the Lower-body Electromyogram Signal Acquired from the Feet as a Noise Reference for Standing Ballistocardiogram Measurements*, IEEE Transactions on Information Technology in BioMedicine, 14(5), 1188-1196, 2010.

M.Q. Chen, X. Xie, K.D. Wilson, **L. Giovangrandi**, J.C. Wu, and G.T.A. Kovacs, *Electrical Point-Source Stimulation of Embryonic Stem Cells for Cardiac Repair*, Cellular and Molecular Bioengineering, 2(4), 625-635, 2009.

O.T. Inan, M. Etemadi, A. Paloma, **L. Giovangrandi**, and G.T.A. Kovacs, *Non-Invasive Cardiac Output Trending During Exercise Recovery on a Bathroom Scale-Based Ballistocardiograph*, Physiological Measurements, 30, 261-274, 2009.

O.T. Inan, M. Etemadi, R.M. Wiard, **L. Giovangrandi**, and G.T.A. Kovacs, *Robust Ballistocardiogram Acquisition for Home Monitoring*, Physiological Measurements, 30, 169-185, 2009.

J.J. Li, A.L. Ouellette, **L. Giovangrandi**, D.E. Cooper, A.J. Ricco, and G.T.A. Kovacs, *Optical Scanner for Immunoassays with Up-Converting Phosphorescent Labels*, IEEE Transactions in Biomedical Engineering, 55(5), 1560-1571, 2008.

O.T. Inan, **L. Giovangrandi**, and G.T.A. Kovacs, *Robust neural-network based classification of premature ventricular contractions using wavelet transform and timing interval features*, IEEE Transactions on Biomedical Engineering, 53(12), 2507-2515, 2006.

L. Giovangrandi, K.H. Gilchrist, R.H. Whittington, and G.T.A. Kovacs, *Low-cost microelectrode array with integrated heater for extracellular recording of cardiomyocyte cultures using commercial flexible printed circuit technology*, Sensors and Actuators B, 113(1), 545-554, 2006.

R.H. Whittington, **L. Giovangrandi**, and G.T.A. Kovacs, *A closed-loop electrical stimulation system for cardiac cell cultures*, IEEE Transaction in Biomedical Engineering, 53(7), 1261-1270, 2005.

K.H. Gilchrist, **L. Giovangrandi**, R.H. Whittington, and G.T.A. Kovacs, *Sensitivity of cell-based biosensors to environmental variables*, Biosensors and Bioelectronics, 20(7), 1397-1406, 2005.

N.J. Mourlas, K.H. Gilchrist, **L. Giovangrandi**, N.I. Maluf, and G.T.A. Kovacs, *An in-line osmometer for application to a cell-based biosensor system*, Sensors and Actuators B, 83(1-3), 41-47, 2002.

K.H. Gilchrist, V.N. Barker, L.E. Fletcher, B.D. DeBusschere, P. Ghanouni, **L. Giovangrandi**, and G.T.A. Kovacs, *General purpose, field-portable cell-based biosensor platform*. Biosensors and Bioelectronics, 16(7-8), 557-564, 2001.

S.A. Makohliso, **L. Giovangrandi**, D. Léonard, H.-J. Mathieu, M. Ilegems, and P. Aebischer, *Application of Teflon-AF[®] thin films for biopatterning of neural cell adhesion*, *Biosensors and Bioelectronics*, 13(11), 1227-1235, 1998.

S.A. Makohliso, D. Léonard, **L. Giovangrandi**, H.-J. Mathieu, M. Ilegems, and P. Aebischer, *Surface characterization of a biochip prototype for cell-based biosensor applications*, *Langmuir*, 15(8), 2940-2946, 1998.

Peer-reviewed Conferences:

K. Pandia, S. Ravindran, G.T.A. Kovacs, **L. Giovangrandi**, R. Cole, *Chest-Accelerometry for Hemodynamic Trending during Valsalva-Recovery*, ISABEL 2010.

M. Evander, B. Dura, A.J. Ricco, G.T.A. Kovacs and **L. Giovangrandi**, *Signal Improvement by Dielectric Focusing in Microfluidic Impedance Cytometers*, microTAS, Groningen, 2010.

K. Pandia, K. Vijayraghavan, G.T.A. Kovacs, and **L. Giovangrandi**, *Physical Modeling of Low-Frequency Sound Propagation Through Human Thoracic Tissue*, in Proc. Annual Conf. IEEE Eng. Med. Biol. Soc., Buenos Aires, 2010.

K. Pandia, S. Ravindran, R. Cole, G.T.A. Kovacs, and **L. Giovangrandi**, *Motion artifact cancelation to obtain heart sounds from a single chest-worn accelerometer*, Conf. Proc. IEEE International Conference on Acoustics Speech and Signal Processing (ICASSP), pp. 590-593, 2010.

M.Q. Chen, J. Yu, R. Whittington, J.C. Wu, G.T.A. Kovacs and **L. Giovangrandi**, *Modeling conduction in host-graft interactions between stem cell grafts and cardiomyocytes*, Conf. Proc. IEEE Eng. Med. Biol. Soc., vol. 1, pp. 6014-6017, 2009.

M. Etemadi, O.T. Inan, R.M. Wiard, G.T.A. Kovacs and **L. Giovangrandi**, *Non-invasive assessment of cardiac contractility on a weighing scale*, Conf. Proc. IEEE Eng. Med. Biol. Soc., vol. 1, pp. 6773-6776, 2009.

O.T. Inan, M. Etemadi, R.M. Wiard, G.T.A. Kovacs and **L. Giovangrandi**, *Novel methods for estimating the ballistocardiogram signal using a simultaneously acquired electrocardiogram*, Conf. Proc. IEEE Eng. Med. Biol. Soc., vol. 1, pp. 5334-5347, 2009.

S. Roy, M.Q. Chen, G.T.A. Kovacs and **L. Giovangrandi**, *Conduction analysis in mixed cardiomyocytes-fibroblasts cultures using microelectrode arrays*, Conf. Proc. IEEE Eng. Med. Biol. Soc., vol. 1, pp. 4250-4253, 2009.

R.M. Wiard, H.J. Kim, C. Figueroa, G.T.A. Kovacs, C.A. Taylor and **L. Giovangrandi**, *Estimation of central aortic forces in the ballistocardiogram under rest and exercise conditions*, Conf. Proc. IEEE Eng. Med. Biol. Soc., vol. 1, pp. 2831-2834, 2009.

O.T. Inan, M. Etemadi, R.M. Wiard, G.T.A. Kovacs, and **L. Giovangrandi**, *Non-invasive measurement of valsalva-induced hemodynamic changes on a bathroom scale ballistocardiograph*, in Proc. 30th Annual International Conference of the IEEE Engineering in Medicine and Biology Society, Vancouver, August 2008, pp. 674-677.

M.Q. Chen, X. Xie, G.T.A. Kovacs, J.C. Wu, and **L. Giovangrandi**, *Point-source electrical stimulation of embryonic stem cells for cardiac repair*, in Proc. 30th Annual International Conference of the IEEE Engineering in Medicine and Biology Society, Vancouver, August 2008, pp. 1729-1732.

O. T. Inan, M. Etemadi, R.M. Wiard, **L. Giovangrandi**, and G.T.A. Kovacs, *Evaluating the foot electromyogram signal as a noise reference for a bathroom scale ballistocardiogram recorder*, 21th IEEE International Symposium on Computer-Based Medical Systems, Jyväskylä, Finland, June 2008, pp 70-74.

A.J. Ricco, J.W. Hines, M. Piccini, M. Parra, L. Timucin, V. Barker, C. Storment, C. Friedericks, E. Agasid, B. Beasley, **L. Giovangrandi**, M. Henschke, C. Kitts, L. Levine, E. Luzzi, D. Ly, I. Mas, M. McIntyre, D. Oswell, R. Rasay, R. Ricks, K. Ronzano, D. Squires, G. Swaiss, J. Tucker and B. Yost, *Autonomous genetic analysis system to study space effects on microorganisms: Results from orbit*, in Proc. 14th International Conference on Solid-State Sensors and Actuators (Transducers'07), Lyon, France, June 10-14, 33-37, 2007.

R. H. Whittington, M. Q. Chen, **L. Giovangrandi**, and G. T. Kovacs, *Temporal resolution of stimulation threshold: A tool for electrophysiologic analysis*, in Proc. 28th Annual International Conference of the IEEE Engineering in Medicine and Biology Society, EMBS'06, New York, NY, USA, 3891-3894, 2006.

K. Montgomery, C. Mundt, G. Thonier, A. Tellier, U. Udoh, V. Barker, R. Ricks, **L. Giovangrandi**, P. Davies, Y. Cagle, J. Swain, J. Hines, and G. Kovacs, *Lifeguard - A personal physiological monitor for extreme environments*, in Proc. 26th Annual International Conference of the IEEE Engineering in Medicine and Biology Society, San Francisco, CA, USA, 2192-2195, 2004.

R.H. Whittington, K.H. Gilchrist, **L. Giovangrandi**, and G.T.A. Kovacs, *A multi-parameter, feedback-based electrical stimulation system for cardiomyocyte cultures*, in Proc. 12th International Conference on Solid-State Sensors and Actuators (Transducers'03), Boston, MA, USA, June 8-12, 2, 983-986, 2003.

B. Franc, N. Peixoto, **L. Giovangrandi**, G. McLaughlin and G.T.A. Kovacs, *Measurement of changes in tissue metabolism using a Clark-type oxygen sensor*, in Proc. Solid-State Sensor, Actuator, and Microsystems Workshop, Hilton Head, SC, 177-180, 2002.

K.H. Gilchrist, **L. Giovangrandi**, and G.T.A. Kovacs, *Analysis of microelectrode-recorded signals from a cardiac cell line as a tool for pharmaceutical screening*, in Proc. 11th International Conference on Solid-State Sensors and Actuators (Transducers'01-Eurosensors XV), Munich, Germany, 2001.

M. Mayer, C. Schmidt, **L. Giovangrandi**, and H. Vogel, *A chip-based biosensor for functional analysis of single ion channels*, 3rd European Biophysics Congress, Munich, Germany, September 09-13, 2000.

L. Giovangrandi, C. Schmidt, M. Mayer, and H. Vogel, *An emerging technology towards functional screening of membrane channels and single cell recording*, 2nd MEA meeting: Substrate-integrated Microelectrode Arrays: hard-, soft- and wetware, Reutlingen, Germany, 2000.

L. Giovangrandi, S.A. Makohliso, P. Aebischer, and M. Ilegems, *Biopatterning of neural cell adhesion on microelectrode array*, International Meeting on Substrate-Integrated Microelectrode Arrays: Technology and Application, Reutlingen, Germany, 1998.

S.A. Makohliso, **L. Giovangrandi**, P. Aebischer, and M. Ilegems, *Development of a Teflon AF[®]-based process for biopatterning of neural cells*, in Proc. NanoTech'97, Montreux, Switzerland, 1997.

D. Léonard, S.A. Makohliso, **L. Giovangrandi**, H.J. Mathieu, M. Ilegems, and P. Aebischer, *The role of TOF-SIMS towards the development of a cell-based biosensor*, in Proc. 11th Int. Conf. on Secondary Ion Mass Spectrometry (SIMS XI), Orlando, FL, USA, p.158, 1997

S.A. Makohliso, P. Aebischer, **L. Giovangrandi**, H.J. Bühlmann, and M. Dutoit, *A biomimetic materials approach towards the development of a neural cell-based biosensor.*, in Proc. 18th Annual International Conference of the IEEE Engineering in Medicine and Biology Society, Amsterdam, Netherlands, 1996.

S.A. Makohliso, **L. Giovangrandi**, H.J. Bühlmann, M. Dutoit, and P. Aebischer, *Towards a neural-based biochip sensor*, in Proc. Society for Neuroscience 25th Annual Meeting, San Diego, CA, USA, 1995.

Book Chapters:

M. Mayer, S. Terrettaz, **L. Giovangrandi**, T. Stora, and H. Vogel, *Functional analysis of ion channels: Planar patch clamp and impedance spectroscopy of tethered lipid membranes*, in Biosensors, vol. 268, Practical Approach Series, J. Cooper, Ed., 2nd ed. Oxford, UK: Oxford University Press, 2004.

Invited Talks:

Positioning Today for Tomorrow's Demand, MEDTECH 2008, Bioscience Leadership Summit, September 23rd, 2008, Skaneateles Falls, NY.

Cell-Based Biosensor Systems for Toxin Detection and Drug Discovery, IEEE Engineering in Medicine and Biology Society, Bay Area chapter, February 18, 2004.

Sensors Using Living Cells - Out of the R&D Lab, Into the Field, and On To the Pharmaceutical World..., Biosensors symposium, Medtronic, February 27, 2003.

Non Peer-reviewed Conferences:

J. Hines, D. Atchinson, **L. Giovangrandi**, and G. Defouw, *Biomedical Sensors for EVA*, presented at NASA Human Research Program Investigators' Workshop, League city, TX, USA, 2008.

L. Giovangrandi, S.A. Makohliso, P. Aebischer, and M. Ilegems, *Improvement of cell-electrode coupling via a new biopatterning scheme*, 29th Annual Neural Prosthesis Workshop, Bethesda, MD, USA, 1998.