

Publications and Presentations — P. Thomas Vernier

Refereed Journal Articles

Arnaud-Cormos, D., P. Leveque, Y.-H. Wu, J. M. Sanders, M. A. Gundersen, and P. T. Vernier, Microchamber set-up characterization for nanosecond pulsed electric field exposure, *IEEE Trans. Biomed. Eng.* 58:1656-1662, 2011.

Batista Napotnik, T., Y.-H. Wu, M. A. Gundersen, D. Miklavcic, and P. T. Vernier, Nanosecond electric pulses cause mitochondrial membrane permeabilization in Jurkat cells, *Bioelectromagnetics*, in press, 2011.

Romeo, S., L. Zeni, M. Sarti, A. Sannino, M. R. Scarfi, P. T. Vernier, and O. Zeni, DNA electrophoretic migration patterns change after exposure of Jurkat cells to single intense nanosecond electric pulse, *PLoS ONE* 6:e28419, 2011.

Yang, W., Y.-H. Wu, D. Yin, H. P. Koeffler, D. E. Sawcer, P. T. Vernier, and M. A. Gundersen, Differential sensitivities of malignant and normal skin cells to nanosecond pulsed electric fields, *Technology in Cancer Research and Treatment* 10:281-286, 2011.

Zhang, C., P. T. Vernier, Y.-H. Wu, and W. Yang, Surface chemical immobilization of parylene C with thermosensitive block copolymer brushes based on *N*-isopropylacrylamide and *N*-*tert*-butylacrylamide: Synthesis, characterization, and cell adhesion/detachment, *J. Biomed. Mater. Res. Part B*, in press, 2011.

Craviso, G. L., S. Choe, P. Chatterjee, I. Chatterjee, and P. T. Vernier, Nanosecond electric pulses: a novel stimulus for triggering Ca²⁺ influx into chromaffin cells via voltage-gated Ca²⁺ channels, *Cell. Mol. Neurobiol.* 30:1259-1265, 2010.

Knecht, V., Z. A. Levine, and P. T. Vernier, Electrophoresis of uncharged oil in water, *J. Colloid Interface Sci.* 352:223-231, 2010.

Levine, Z. A. and P. T. Vernier, Life cycle of an electropore: field-dependent and field-independent steps in pore creation and annihilation, *J. Membrane Biol.* 236:27-36, 2010.

Chen, M.-T., L. G. De-Arco, F. N. Ishikawa, P. T. Vernier, C. Zhou, and M. A. Gundersen, Intracellular photoluminescence of carbon nanotube-fluorescein conjugates in human ovarian cancer cells, *Nanotechnology* 20:295101, 2009.

Chen, M.-T., C. Jiang, P. T. Vernier, Y.-H. Wu, and M. A. Gundersen, Two-dimensional nanosecond electric field mapping based on cell electroporability, *PMC Biophysics* 2:9, 2009.

Craviso, G. L., P. Chatterjee, G. Maalouf, A. Cerjanic, J. Yoon, I. Chatterjee, and P. T. Vernier, Nanosecond electric pulse-induced increase in intracellular calcium in adrenal chromaffin cells triggers calcium-dependent catecholamine release, *IEEE Trans. Dielect. Elec. Ins.* 16:1294-1301, 2009.

Jiang, C., M.-T. Chen, C. Schaudinn, A. Gorur, P. T. Vernier, J. W. Costerton, D. Jaramillo, P. Sedghizadeh, and M. A. Gundersen, Nanosecond pulsed plasma dental probe, *Plasma Processes and Polymers* 6:479-483, 2009.

Jiang, C., M.-T. Chen, C. Schaudinn, A. Gorur, P. T. Vernier, J. W. Costerton, D. Jaramillo, P. Sedghizadeh, and M. A. Gundersen, Pulsed atmospheric-pressure cold plasma for endodontic disinfection, *IEEE Trans. Plasma Sci.* 37:1190-1195, 2009.

Sanders, J. M., A. Kuthi, Y.-H. Wu, P. T. Vernier, and M. A. Gundersen, A linear, single-stage, nanosecond pulse generator for delivering intense electric fields to biological loads, *IEEE Trans. Dielect. Elec. Ins.* 16:1048-1054, 2009.

Vernier, P. T., Z. A. Levine, Y.-H. Wu, V. Joubert, M. J. Ziegler, L. M. Mir, and D. Peter Tieleman, Electroporating fields target oxidatively damaged areas in the cell membrane, *PLoS ONE* 4:e7966, 2009.

Vernier, P. T., M. J. Ziegler, and R. Dimova, Calcium binding and head group dipole angle in phosphatidylserine-phosphatidylcholine bilayers, *Langmuir* 25:1020-1027, 2009.

Wang, S., J. Chen, M. T. Chen, P. T. Vernier, M. A. Gundersen, and M. Valderrabano, Cardiac myocyte excitation by ultrashort high-field pulses, *Biophys. J.* 96:1640-1648, 2009.

Gómez Galindo, F., P. T. Vernier, P. Dejmek, A. Vicente, and M. A. Gundersen, Pulsed electric field reduces the permeability of potato cell wall, *Bioelectromagnetics* 29:296-301, 2008.

Vernier, P. T., Y. Sun, M.-T. Chen, M. A. Gundersen, and G. L. Craviso, Nanosecond electric pulse-induced calcium entry into chromaffin cells, *Bioelectrochemistry* 73:1-4, 2008.

Ziegler, M. J. and P. T. Vernier, Interface water dynamics and porating electric fields for phospholipid bilayers, *J. Phys. Chem. B* 112:13588-13596, 2008.

Abebe, H., V. Tyree, H. Morris, and P. T. Vernier, SPICE BSIM3 model parameter extraction and optimization: practical considerations, *Int. J. Elect. Eng. Educ.* 44:249-262, 2007.

Garon, E. B., D. Sawcer, P. T. Vernier, T. Tang, Y. Sun, L. Marcu, M. A. Gundersen, and H. P. Koeffler, In vitro and in vivo evaluation and a case report of intense nanosecond pulsed electric field as a local therapy for human malignancies, *Int. J. Cancer* 121:675-682, 2007.

Krishnaswamy, P., A. Kuthi, P. T. Vernier, and M. A. Gundersen, Compact subnanosecond pulse generator using avalanche transistors for cell electroperturbation, *IEEE Trans. Dielect. Elec. Ins.* 14:873-877, 2007.

Liu, Y. S., Y. Sun, P. T. Vernier, C. H. Liang, S. Y. C. Chong, and M. A. Gundersen, pH-sensitive photoluminescence of CdSe/ZnSe/ZnS quantum dots in human ovarian cancer cells, *J. Phys. Chem. C* 111:2872-2878, 2007.

Marshall, J. C., D. L. Herman, P. T. Vernier, D. L. DeVoe, and M. Gaitan, Young's modulus measurements in standard IC CMOS processes using MEMS test structures, *IEEE Electron Device Letters* 28:960-963, 2007.

Marshall, J. C., and P. T. Vernier, Electro-physical technique for post-fabrication measurements of CMOS process layer thicknesses, *J. Res. Natl. Inst. Stand. Technol.* 112:223-256, 2007.

Vernier, P. T., and M. J. Ziegler, Nanosecond field alignment of head group and water dipoles in electroporating phospholipid bilayers, *J. Phys. Chem. B* 111: 12993-12996, 2007.

Wang, J., W. H. Yong, Y. Sun, P. T. Vernier, H. P. Koeffler, M. A. Gundersen, and L. Marcu, Receptor-targeted quantum dots: fluorescent probes for brain tumor diagnosis, *J. Biomed. Optics* 12:044021, 2007.

Sun, Y., Y. S. Liu, P. T. Vernier, C. H. Liang, S. Y. Chong, L. Marcu, and M. A. Gundersen, Photostability and pH sensitivity of CdSe/ZnSe/ZnS quantum dots in living cells, *Nanotechnology* 17:4469-4476, 2006.

Sun, Y., P. T. Vernier, M. Behrend, J. Wang, M. M. Thu, M. A. Gundersen, and L. Marcu, Fluorescence microscopy imaging of electroperturbation in mammalian cells, *J. Biomed. Optics* 11:24010, 2006.

Vernier, P. T., Y. Sun, and M. A. Gundersen, Nanoelectropulse-driven membrane perturbation and small molecule permeabilization, *BMC Cell Biology* 7:37, 2006.

Vernier, P. T., M. J. Ziegler, Y. Sun, W. V. Chang, M. A. Gundersen, and D. P. Tieleman, Nanopore formation and phosphatidylserine externalization in a phospholipid bilayer at high transmembrane potential, *J. Am. Chem. Soc.* 128:6288-6289, 2006.

Vernier, P. T., Y. Sun, M. J. Ziegler, D. P. Tieleman, and M. A. Gundersen, Nanopore-facilitated, voltage-driven phosphatidylserine translocation in lipid bilayers — in vitro and in silico, *Physical Biology* 3:233-247, 2006.

Sun, Y., P. T. Vernier, M. Behrend, L. Marcu, and M. A. Gundersen, Electrode microchamber for noninvasive perturbation of mammalian cells with nanosecond pulsed electric fields, *IEEE Trans. Nanobiosci.*, 4:277-283, 2005.

Kuthi, A., P. Gabrielsson, M. Behrend, P. T. Vernier, and M. A. Gundersen, Nanosecond pulse generator using fast recovery diodes for cell electromanipulation, *IEEE Trans. Plasma Sci.* 33:1192-1197, 2005.

Vernier, P. T., Y. Sun, L. Marcu, C. M. Craft, and M. A. Gundersen, Nanoelectropulse-induced phosphatidylserine translocation, *Biophys. J.* 86:4040–4048, 2004.

Vernier, P. T., Y. Sun, L. Marcu, C. M. Craft, and M. A. Gundersen, Nanosecond pulsed electric fields perturb membrane phospholipids in T lymphoblasts, *FEBS Lett.* 572:103–108, 2004.

Vernier, P. T., M. Thu, L. Marcu, C. M. Craft, and M. A. Gundersen, Nanosecond electroperturbation — mammalian cell sensitivity and bacterial spore resistance, *IEEE Trans. Plasma Sci.* 32:1620–1625, 2004.

Behrend, M., A. Kuthi, X. Gu, P. T. Vernier, L. Marcu, C. M. Craft, and M. A. Gundersen, Pulse generators for pulsed electric field exposure of biological cells and tissues, *IEEE Trans. Dielect. Elect. Ins.* 10:820–825, 2003.

Vernier, P. T., A. Li, L. Marcu, C. M. Craft, and M. A. Gundersen, Ultrashort pulsed electric fields induce membrane phospholipid translocation and caspase activation: differential sensitivities of Jurkat T lymphoblasts and rat glioma C6 cells, *IEEE Trans. Dielect. Elect. Ins.* 10:795–809, 2003.

Vernier, P. T., Y. Sun, L. Marcu, S. Salemi, C. M. Craft, and M. A. Gundersen, Calcium bursts induced by nanosecond electric pulses, *Biochem. Biophys. Res. Commun.* 310:286–295, 2003.

Invited Presentations

Vernier, P. T., Mitochondrial membrane permeabilization with nanosecond electric pulses, 33rd Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC '11), Boston, August, 2011.

Vernier, P. T., Nanosecond (gigahertz) and microsecond (megahertz) pulsed electric field interactions with cell membranes, 30th International Union of Radio Science General Assembly and Scientific Symposium (URSI GASS), Istanbul, August, 2011.

Vernier, P. T., Nanosecond electroperturbations of cancer cell membranes — biophysics and therapeutics, 10th International Conference of the European BioElectromagnetics Association, Rome, February, 2011.

Vernier, P. T., Using simulation techniques (molecular modeling) to reduce parameter space, Air Force Office of Scientific Research Workshop on Photo-Electro-Magnetic Biostimulation for Enhancement of Performance and Protection, San Antonio, November, 2011.

Vernier, P. T., Z. A. Levine, Y.-H. Wu, Nanoelectropores in cell membranes and simulated phospholipid bilayers, XXIth International Symposium on Bioelectrochemistry and Bioenergetics of the Bioelectrochemical Society, Kraków, May, 2011.

Craviso, G. L., S. Choe, P. Chatterjee, I. Chatterjee, and P. T. Vernier, Nanosecond electrostimulation of adrenal chromaffin cells, International Bioelectrics Symposium, Old Dominion University, Norfolk, VA, June, 2010.

Vernier, P. T., Interaction of electrical current with cells: high [pulsed] fields, International School of Bioelectromagnetics, Ettore Majorana Foundation and Centre for Scientific Culture, Erice, Italy, November, 2010.

Vernier, P. T., Nanoelectropermeabilization “everywhere”, International Bioelectrics Symposium, Old Dominion University, Norfolk, VA, June, 2010.

Vernier, P. T., Nanoelectroporation of external and internal membranes — The dielectric landscape of the lipid bilayer interface, Biophysics for Medicine school (sponsored by IUPAB and Bioelectrochemistry Society), Vulcan, Romania, October, 2010.

Vernier, P. T., Nanoscale structure of lipid bilayers in nanosecond electric fields, Wilhelm and Else Heraeus Workshop on Biophysics of Membrane Transformations, Bad Honnef, Germany, October, 2010.

Levine, Z. A., Y.-H. Wu, V. Joubert, M. J. Ziegler, L. Mir, D. P. Tieleman, and P. T. Vernier, Increased susceptibility of oxidized phospholipid bilayers to electropermeabilization, XXth International Symposium on Bioelectrochemistry and Bioenergetics, Sibiu, Romania, May, 2009.

Vernier, P. T., Nanoscale restructuring of lipid bilayers in supraphysiological electric fields, International Bioelectrics Symposium, University of Missouri, Columbia, June, 2009.

Vernier, P. T., Delivery of ultra-short, high-intensity pulsed electrical energy to membranes, cells, and tissues: biophysics and therapeutics, Electroporation-Based Technologies and Treatments, International Scientific Workshop and Postgraduate Course, University of Ljubljana and Institute of Oncology, Ljubljana, Slovenia, November, 2009.

Vernier, P. T., Biomolecular electrosurgery: dipoles and dielectrics, nanoseconds and nanometers, calcium and cancer, peroxidation and poration, Department of Biomedical Engineering Seminar, University of California, Davis, September, 2008.

Vernier, P. T., Biomolecular manipulations with nanosecond pulsed electric fields — in cells and in silico, International Workshop on Bioelectrics 2007, Kumamoto University, Kumamoto, Japan, February, 2007.

Vernier, P. T., Nanoscale electroporation: dipoles and dielectrics, nanoseconds and nanometers, Electroporation-Based Technologies and Treatments, International Scientific Workshop and Postgraduate Course, University of Ljubljana and Institute of Oncology, Ljubljana, Slovenia, November, 2007.

Vernier, P. T., Biomolecular manipulations with nanosecond pulsed electric fields, Department of Electrical and Computer Engineering Seminar, Old Dominion University, Norfolk, April, 2006.

Vernier, P. T., Biomolecular manipulations with nanosecond pulsed electric fields — in cells and in silico, Applied Math and Center for Computational Biology Seminar, University of California, Merced, November, 2006.

Vernier, P. T., Biomolecular manipulations with nanosecond pulsed electric fields — in cells and in silico, Los Angeles Tissue Engineering Initiative, Fourth Annual Meeting, University of California, Los Angeles, December, 2006.

Vernier, P. T., Y. Sun, M. J. Ziegler, and M. A. Gundersen, Flipping the phospholipid switch for phagocytosis — targeting cells for immune clearance with a nanosecond, remotely delivered, electrical signal, Bioelectromagnetics Society Winter Workshop, Tempe, AZ, 2006.

Vernier, P. T., Y. Sun, M. J. Ziegler, and M. A. Gundersen, Nanosecond, nondestructive, localized scrambling of membrane phospholipids in living cells, American Society for Cell Biology 45th Annual Meeting, Special Interest Sub-Group Meeting on Nanosecond Electric Pulses: A New Technology for Introducing Transient Nanopores in Organelles, San Francisco, 2005.

Vernier, P. T., Nanometer, gigahertz integrated circuits — semiconductor foundry access for design prototypes and small-volume production, University of Southern California School of Engineering Undergraduate Honors Colloquium, Los Angeles, 2004.

Vernier, P. T., Y. Sun, L. Marcu, C. M. Craft, and M. A. Gundersen, Field-dependent nanosecond electroperturbation of Jurkat T lymphoblasts, Scientific Conference, Society for Physical Regulation in Biology and Medicine, San Antonio, 2004.

Marcu, L., P. T. Vernier, S. Salemi, M. Behrend, C. M. Craft, and M. A. Gundersen, Optical imaging of electroperturbative effects in Jurkat T lymphoblasts induced by ultrashort pulsed electric fields, World Congress on Medical Physics and Biomedical Engineering, Sydney, Australia, 2003.

Sun, Y., P. T. Vernier, M. Behrend, L. Marcu, and M. A. Gundersen, Non-invasive approaches to nano-biology through advanced pulsed power, Workshop on High-Field Effects and Fast Pulse Responses in Bio-Systems, IEEE Conference on Electrical Insulation and Dielectric Phenomena, Albuquerque, 2003.

Vernier, P. T., CMOS-compatible MEMS on multi-project wafers: fabrication and characterization, National Institute of Standards and Technology, Semiconductor Electronics Division, Electronics and Electrical Engineering Laboratory, Gaithersburg, MD, 2003.

Vernier, P. T., A. Li, L. Marcu, X. Zhu, C. M. Craft, and M. A. Gundersen, Nanosecond electroperturbation of malignant cells, World Congress on Medical Physics and Biomedical Engineering, Sydney, Australia, 2003.

Vernier, P. T., Y. Sun, L. Marcu, S. Salemi, C. M. Craft, and M. A. Gundersen, Non-invasive intracellular electroperturbation of human lymphocytes, Workshop on High-Field Effects and Fast Pulse Responses in Bio-Systems, IEEE Conference on Electrical Insulation and Dielectric Phenomena, Albuquerque, 2003.

Vernier, P. T., and M. A. Gundersen, Ultrashort electric perturbations trigger membrane phospholipid translocation and apoptosis, Air Force Research Laboratory, Wright-Patterson Air Force Base, Dayton, OH, 2002.

Contributed and Other Presentations

Craviso, G. L., S. Choe, I. Chatterjee, and P. T. Vernier, Temperature modulation of nanoelectropulse excitation of adrenal chromaffin cells, Bioelectromagnetics Society 33rd Annual Meeting, Halifax, 2011.

Lee, J. H., Z. A. Levine, M. Tokman, P. T. Vernier, and M. E. Colvin, Using simple water:vacuum energetics to model phospholipid bilayer electroporabilization, Biophysical Society Annual Meeting, Baltimore, 2011.

Levine, Z. A. and P. T. Vernier, Temperature modulation of the life cycles of phospholipid bilayer electropores, Biophysical Society Annual Meeting, Baltimore, 2011.

Romeo, S., Y.-H. Wu, Z. A. Levine, and P. T. Vernier Water influx after nanoelectroporabilization, International Bioelectrics Symposium, Toulouse, 2011.

Romeo, S., O. Zeni, M. R. Scarfi, M. Sarti, A. Sannino, P. T. Vernier, and L. Zeni, Electro-perturbation of DNA in Jurkat cells under nanosecond pulsed electric fields, Biophysical Society Annual Meeting, Baltimore, 2011.

Vernier, P. T., Nanosecond (gigahertz) and microsecond (megahertz) pulsed electric field interactions with cell membranes, International Union of Radio Science General Assembly and Scientific Symposium (URSI GASS), Istanbul, 2011.

Vernier, P. T., Z. A. Levine, J. H. Lee, M. E. Colvin, and M. Tokman, Electric field-driven water dipoles in lipid bilayers and in vacuum, 10th International Conference of the European BioElectromagnetics Association, Rome, 2011.

Wu, Y.-H., M. A. Gundersen, and P. T. Vernier, Nanosecond, megavolt-per-meter pulsed electric field effects on biological membranes, Biophysical Society Annual Meeting, Baltimore, 2011.

Wu, Y.-H., S. Romeo, Z. A. Levine, and P. T. Vernier, Cell swelling after nanosecond pulsed electric field exposure, Bioelectromagnetics Society 33rd Annual Meeting, Halifax, 2011.

Craviso, G. L., P. Chatterjee, S. Choe, W. Guan, I. Chatterjee, and P. T. Vernier, Mechanisms underlying the nanosecond electric pulse-induced influx of calcium into adrenal chromaffin cells, Bioelectromagnetics Society 32nd Annual Meeting, Seoul, 2010.

Lee, J. H., Z. A. Levine, P. T. Vernier, M. Tokman, and M. E. Colvin, Electric field effects on water and water-vacuum interfaces in molecular dynamics simulations, Biophysical Society Annual Meeting, San Francisco, 2010.

Levine, Z. A. and P. T. Vernier, Electropore life cycles in heterogeneous phospholipid bilayers in the presence of calcium, Bioelectromagnetics Society 32nd Annual Meeting, Seoul, 2010.

Levine, Z. A., M. J. Ziegler, and P. T. Vernier, Life cycle of an electropore: a molecular dynamics investigation of the electroporation of heterogeneous lipid bilayers (PC:PS) in the presence of calcium ions, Biophysical Society Annual Meeting, San Francisco, 2010.

Wu, Y.-H., T. Batista-Napotnik, M. A. Gundersen, D. Miklavcic, and P. T. Vernier, Intracellular effects of nanosecond, high-field electrical pulses, Biophysical Society Annual Meeting, San Francisco, 2010.

Wu, Y.-H., M. A. Gundersen, and P. T. Vernier, Monitoring real-time intracellular responses to nanoelectropulses, Bioelectromagnetics Society 32nd Annual Meeting, Seoul, 2010.

Chatterjee, P., P. T. Vernier, I. Chatterjee, and G. L. Craviso, Single nanosecond electric pulse-induced influx of calcium into adrenal chromaffin cells requires extracellular sodium, Bioelectromagnetics Society 31st Annual Meeting, Davos, 2009.

Levine, Z. A., Y.-H. Wu, M. J. Ziegler, D. P. Tieleman, and P. T. Vernier, Electroporation sensitivity of oxidized phospholipid bilayers, Biophysical Society Annual Meeting, Boston, 2009.

Levine, Z. A., Y.-H. Wu, M. J. Ziegler, D. P. Tieleman, and P. T. Vernier, Increased susceptibility of oxidized phospholipid bilayers to electroporation, Bioelectromagnetics Society 31st Annual Meeting, Davos, 2009.

Sanders, J. M., A. Kuthi, P. T. Vernier, Y.-H. Wu, C. Jiang, and M. A. Gundersen, Scalable, compact, nanosecond pulse generator with a high repetition rate for biomedical applications requiring intense electric fields, IEEE 17th International Pulsed Power Conference, Washington, 2009.

Craviso, G. L., G. Maalouf, S. Choe, M.-T. Chen, D. McPherson, I. Chatterjee, M. A. Gundersen, and P. T. Vernier, Nanosecond electric pulse stimulates catecholamine release from chromaffin cells, Bioelectromagnetics Society 30th Annual Meeting, San Diego, 2008.

Jiang, C., P. T. Vernier, M.-T. Chen, Y.-H. Wu, L. L. Wang, and M. A. Gundersen, Low energy nanosecond pulsed plasma sterilization for endodontic applications, IEEE 28th International Power Modulator Conference, Las Vegas, 2008.

Marshall, J. C., P. T. Vernier, S. B. Hardy, J. C. Geist, R. A. Allen, C. D. McGray, and M. Gaitan, A standard reference material for five key metrics for MEMS devices, Solid-State Sensors, Actuators, and Microsystems Workshop, Hilton Head, 2008.

Ziegler, M. J. and P. T. Vernier, Nanosecond biomolecular surgery — mechanism of pore formation in lipid bilayers, Biophysical Society Annual Meeting, Long Beach, 2008.

Gómez Galindo, F., P. T. Vernier, P. Dejmek, A. Vicente, and M. A. Gundersen, Pulsed electric fields promote potato tuber cell wall cross-linking, Bioelectromagnetics Society 29th Annual Meeting, Kanazawa, 2007.

Vernier, P. T., M. J. Ziegler, Y. Sun, M. A. Gundersen, and D. P. Tieleman, Nanosecond biomolecular surgery with microelectronics, microfluidics, and nanotubes — in vitro and in silico, Nanomaterials for Defense Applications Symposium, San Diego, 2007.

Vernier, P. T., M. J. Ziegler, and D. P. Tieleman, Nanoelectroporation of phospholipid bilayers — energy-minimized, field-driven reorganization of interfacial water dipoles, Bioelectromagnetics Society 29th Annual Meeting, Kanazawa, 2007.

Ziegler, M. J., D. P. Tieleman, and P. T. Vernier, Nanosecond electroporation of phospholipid bilayers follows field-driven reorganization of interfacial water dipoles, Biophysical Society Annual Meeting, Baltimore, 2007.

Craviso, G. L., Y. Sun, M.-T. Chen, M. A. Gundersen, and P. T. Vernier, Single, nanosecond electric pulse elevates intracellular calcium in bovine adrenal chromaffin cells, Bioelectromagnetics Society 28th Annual Meeting, Cancun, 2006.

Liu, Y.-S., C. H. Liang, P. T. Vernier, Y. Sun, and M. A. Gundersen, Design and synthesis of a multifunctional probe for bio-imaging and therapeutics, Materials Research Society Spring Meeting, San Francisco, 2006.

Sun, Y., P. T. Vernier, X. Gu, M. T. Chen, L. Marcu, and M. A. Gundersen, Apoptotic nuclear perturbation induced by nanosecond pulsed electric fields, Biophysical Society Annual Meeting, Salt Lake City, 2006.

Vernier, P. T., Y. Sun, M. T. Chen, S. Y. C. Chong, and M. A. Gundersen, DNA-binding fluorochrome photoluminescence in nanoelectropulsed living cells, Bioelectromagnetics Society 28th Annual Meeting, Cancun, 2006.

Vernier, P. T., Y. Sun, M. J. Ziegler, and M. A. Gundersen, Nanoelectropulse-driven membrane perturbation and permeabilization, 2nd ASM-IEEE EMBS Conference on Bio-, Micro-, and Nanosystems, San Francisco, 2006.

Vernier, P. T., M. J. Ziegler, Y. Sun, and M. A. Gundersen, Nanosecond electroporation and electrophoretic phosphatidylserine translocation — in vitro and in silico, American Society for Cell Biology 46th Annual Meeting, San Diego, 2006.

Ziegler, M. J., P. T. Vernier, Y. Sun, and M. A. Gundersen, Molecular dynamics simulations of nanopore formation and charged phospholipid translocation in lipid bilayers driven by nanosecond, megavolt-per-meter pulsed electric fields, Biophysical Society Annual Meeting, Salt Lake City, 2006.

Ziegler, M. J., D. P. Tieleman, and P. T. Vernier, Molecular dynamics simulations of asymmetric phospholipid bilayers with supraphysiological transmembrane potentials, 232nd American Chemical Society National Meeting, San Francisco, 2006.

Ziegler, M. J. and P. T. Vernier, Molecular dynamics simulations of asymmetric phospholipid bilayers with supraphysiological transmembrane potentials, American Institute of Chemical Engineers Annual Meeting, San Francisco, 2006.

Vernier, P. T., Y. Sun, J. Wang, L. Marcu, and M. A. Gundersen, Nanoelectropulse-induced membrane perturbations in living cells visualized with fluorescence microscopy, BiOS 2005 (SPIE), San Jose, 2005.

Vernier, P. T., Y. Sun, L. Marcu, and M. A. Gundersen, Nanoelectropulse-driven phosphatidylserine externalization and small molecule permeabilization, Biophysical Society Annual Meeting, Long Beach, 2005.

Gu, X., A. Kuthi, M. Behrend, P. T. Vernier, Q. Zhou, and M. A. Gundersen, Compact pulse generator for nanosecond electroperturbation of biological cells, IEEE 26th International Power Modulator Conference, San Francisco, 2004.

Vernier, P. T., L. Marcu, Y. Sun, S. Salemi, C. M. Craft, and M. A. Gundersen, Real-time imaging of mammalian cells in nanosecond, megawatt, millijoule pulsed electric fields, BiOS 2004 (SPIE), San Jose, 2004.

Vernier, P. T., Y. Sun, L. Marcu, C. M. Craft, and M. A. Gundersen, Nanoelectropulse perturbations of calcium and phospholipid distribution in human lymphocytes, Bioelectromagnetics Society 26th Annual Meeting, Washington, 2004.

Marcu, L., P. T. Vernier, C. H. Manning, S. Salemi, A. Li, C. M. Craft, M. A. Gundersen, and D. J. Bornhop, Fluorescence microscopy studies of a peripheral benzodiazepine receptor-targeted molecular probe for brain tumor imaging, Diagnostic Optical Spectroscopy, European Conference on Biomedical Optics, Munich, Germany, 2003.

Thu, M., P. T. Vernier, M. Behrend, S. Salemi, C. M. Craft, and M. A. Gundersen, Germination of *Bacillus atrophaeus* spores after exposure to ultra-short, high-field electric pulses, ElectroMed 2003, San Antonio, 2003.

Vernier, P. T. and M. A. Gundersen, Nanosecond, megawatt, millijoule pulses selectively perturb but do not porate mammalian cells, Air Force Office of Scientific Research, Chemistry and Life Sciences Directorate, Bio-Inspired Concepts Review, Annapolis, MD, 2003.

Book Chapters

Vernier, P. T., Nanoscale restructuring of lipid bilayers in nanosecond electric fields, in *Advanced Electroporation Techniques in Biology and Medicine*, Andrei G. Pakhomov, Damijan Miklavčič, Marko S. Markov, eds., CRC Press, 2010.

Other Publications

Garon, E. B., P. T. Vernier, J. Wang, T. Tang, M. M. Thu, X. Gu, Y. Sun, L. Marcu, M. Gundersen, and H. P. Koeffler, Nanoelectropulse therapy for cancer: in vitro and in vivo analysis, 97th American Association for Cancer Research Annual Meeting, Washington, DC, 2006.

Sun, Y., P. T. Vernier, Y.-S. Liu, T. Black, C.-H. Liang, S. Y. Chong, M.-T. Chen, T. Tang, L. Marcu, and M. A. Gundersen, Biophotonic studies of mammalian cells with nanosecond pulsed power using quantum dots, *Proc. 27th International Power Modulator Symposium and 2006 High Voltage Workshop*, 2006.

Vernier, P. T., Y. Sun, J. Wang, M. M. Thu, E. Garon, M. Valderrabano, L. Marcu, H. P. Koeffler, M. A. Gundersen, Nanoelectropulse intracellular perturbation and electroporation technology: phospholipid translocation, calcium bursts, chromatin rearrangement, cardiomyocyte activation, and tumor cell sensitivity, *Proc. IEEE Engineering in Medicine and Biology Society 27th International Conference (EMBC 2005)*, Shanghai, China, 2005.

Vernier, P. T., Y. Sun, L. Marcu, and M. A. Gundersen, Nanoelectropulse-driven phosphatidylserine externalization and small molecule permeabilization, *Proc. Fourth International Symposium on Nonthermal Medical/Biological Treatments Using Electromagnetic Fields and Ionized Gases (ElectroMed 2005)*, Portland, OR, 2005.

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