

James Paul Landers

BIOGRAPHICAL

Citizenship: Dual-Canada/United States

EDUCATION

1984 – 1988 Ph.D. Biochemistry [with distinction]; Department of Chemistry and Biochemistry, Univ. of Guelph, Canada
1978 – 1983 B.Sc. Biochemistry (Biomedicine Minor); University of Guelph, Ontario, Canada

EMPLOYMENT HISTORY

1999 – current Department of Chemistry, University of Virginia
1997 – 1999 Department of Chemistry, University of Pittsburgh
1995 – 1999 Department of Laboratory Medicine, Mayo Clinic

RESEARCH AND PROFESSIONAL

Dec. 2015 **Commonwealth Chaired Professor**, University of Virginia
Dec. 2001 **Full Professor**, Department of Chemistry, University of Virginia (Primary Appointment)
Associate Professor, Department of Pathology, UVA Health Sciences Center (courtesy appointment)
Professor, Department of Mechanical and Aerospace Engineering, UVA (courtesy appointment)
1999–2001 **Associate Professor (untenured)**, Department of Chemistry, University of Virginia, - Associate Professor, Department of Pathology, University of Virginia Health Sciences Center, Charlottesville, VA.
1997–1999 **Assistant Professor**, Department of Chemistry, University of Pittsburgh, Pittsburgh, PA.
1996–1997 **Associate Consultant**, Department of Biochemistry and Molecular Biology, Mayo Clinic, Rochester, MN.
1994–1996 **Director**, Clinical Capillary Electrophoresis Facility, Division of Clinical Biochemistry and Immunology, Department of Laboratory Medicine and Pathology, Mayo Clinic, Rochester, MN.
1990–1994 **Medical Research Council (Canada) Research Fellow**, Mayo Clinic, Rochester, MN.
1988–1989 **Research Fellow**, Banting Institute, University of Toronto Medical School, Toronto, Canada.

AWARDS • DISTINCTIONS • RECOGNITION

2023 Recipient of AES Lifetime Achievement Award (ontributionsf Electrophoresis/Electrokinetics) (Reno,, NV)
2022 Recipient of SCiEX Microscale Separations Innovation Medal Award (Liege, Belgium)
2017 Named to the 'Magnificent Tens'– Analytical Scientist Power List
2015 Named Commonwealth Professor at UVA
2014 Named a Jefferson Scholars Faculty Fellow at UVA
2014 Awarded the UVA Jefferson Scholars Foundation Award for Excellence in Teaching
2013 Named Top-15 Forensic DNA Research Labs in the USA
2010 Awarded the Distinction of Fellow of the Royal Society of Chemistry
2008 Awarded 'Innovative Technology of the Year' by Association for Lab Automation
2004 University of Virginia 'Top-five' List of Inventors
2002 Awarded status of Fellow of the Royal Society of Chemistry
1998 Recipient of Lilly Analytical Chemistry Award
1991 Awarded Canadian Medical Research Council (MRC) Post-doctoral Fellowship
1989 Awarded Mellon Foundation Post-doctoral Fellowship
1989 Awarded the H.J. Suderman Award for Excellence in Graduate Teaching
1984 University of Guelph 'Dean of Graduate Studies' Scholarship

WATERMARK ACHIEVEMENTS

- 2019 2006 PNAS article becomes a *citation classic*
 2017 Speaker at *Nobel Symposium 162 on Microfluidics* in Stockholm
 2017 Appointed as *Honorary Professor* at Kaohsiung Medical University in Taiwan
 2016 Chair, Inaugural GRC on *Forensic Analysis of Human DNA*
 2015 Founded new *Gordon Research Conference* on Forensic Analysis of Human DNA
 2014 *Bernard Langer Lecturer*, Institute of Medical Science, University of Toronto
 2014 Appointed *Visiting Professor and Lecturer*, University of Toronto
 2013 Chair, 29th *International Conference on Microscale Bioseparations in the Life Sciences*
 2013 Chair, *Gordon Research Conference* on Chemistry and Physics of Microfluidics
 2012 *Bergveld Lecturer*, University of Twente, Netherlands
 2011 *Saferstein Lecturer*, Northeastern University
 2011 Chair, 15th *International Conference on Miniaturized Systems for Chemistry and Life Sciences*
 2011 Reached *hirsch(10) Century* status (>100 articles cited minimum of 10 times)
 2011 Vice Chair, *Gordon Research Conference* on Chemistry and Physics of Microfluidics
 2011 Reached *hirsch(10) Century* status (>100 articles cited minimum of 10 times)
 2009 Vice Chair, *Gordon Research Conference* on *Chemistry and Physics of Microfluidics*
 2006 Vice Chair, *Gordon Research Conference* on *Chemistry and Physics of Microfluidics*
 2007 *Clifford C. Hatch Lecturer*, University of Wyoming
 1989 Awarded *Ph.D. with distinction*
 2001 Member of *Charter Editorial Board* that launched RSC journal *Lab on a Chip*

PUBLISHED ARTICLES IN PEER-REVIEWED JOURNALS

General Statistics	Google Scholar
Total Papers (as of Apr-2024)	277
Total Citations (as of Apr-2024)	19194
Average Citations per article	66
Hirsch Index (h-index)	72
i100-index (articles >100 citations)	49
i10-index (articles >100 citations)	253
Citation Classics (>400 citations)	5

1986

- 1 Bunce, N. J., Ingold, K. U., **Landers, J.P.**, Luszytk, J. and Scaiano, J. C. 1985. Kinetic study of photochlorination of 2,3-dimethylbutane and other alkanes in solution in the presence of benzene. *JACS* 107:5464-72. [**grandson of Sir Christopher Ingold – pioneer of reaction mechanisms and the electronic structure of organic compounds*] DOI: 10.1021/ja00305a023

1987

- 2 Bunce, N.J., Joy, R.B., **Landers, J.P.** and Nakai, J.S. 1987. Complexation effects in the photochlorination of 2,3-Dimethylbutane in the presence of fluorinated benzenes. *J. Org. Chem.* 52:1155-1156. DOI: 10.1021/jo00382a037 **13 citations**
- 3 Leece, B., Denomme, M. A., Towner, R. A., Li, S. M. A., **Landers, J.P.** and Safe, S. H. 1987. Non-additive interactive effects of polychlorinated biphenyl (PCB) congeners in the rat: role of the 2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD) receptor protein. *Can. J. Physiol. Biochem.* 65:1978-1982.

1988

- 4 Bunce, N.J., **Landers, J.P.**, Langshaw, P. and Nakai. 1988. An assessment of the importance of direct solar degradation of some simple chlorinated benzenes and biphenyls in the vapor phase. *Environ. Sci. Technol.* 23:213-219. DOI: 10.1021/es00179a013 PubMed ID: 2553709 **23 citations**
- 5 Bunce, N. J., **Landers, J.P.** and Safe, S. H. 1988. Kinetic models for association of 2,3,7,8-Tetrachlorodibenzo-p-dioxin and the Ah receptor. *Arch. Biochem. Biophys.* 267:384-97. doi:10.1016/0003-9861(88)90044-6 **39 citations**

- 6 Bunce, N. J., **Landers, J.P.** and Safe, S. H. 1988. Kinetics of the interaction between 2,3,7,8-tetrachlorodibenzo-p-dioxin and the Ah receptor protein. *Chemosphere* 18(1-6):731-736 DOI: 10.1016/0045-6535(89)90189-6
- 7 Bunce, N. J., Choong, D. K. M., **Landers, J.P.** and Zacharewski, T. R. 1989. Competitive binding of chlorinated azobenzenes to the Ah receptor protein. *Environ. Chem. Toxicol.* 8:25-30. DOI: 10.1897/1552-8618(1989)8[25:CBOCAT]2.0.CO;2
- 8 **Landers, J.P.**, Piskorksa-Pliszczynska, J., Zacharewski, T., Bunce, N. J. and Safe, S. H. 1989. Photoaffinity labelling of the nuclear Ah receptor from mouse Hepa 1c1c7 cells using [³H]-2,3,7,8-tetrachlorodibenzo-p-dioxin. *J. Biol. Chem.* 264:18463-18471.
- 9 **Landers, J.P.**, Bunce, N. J., Nakai, J. S., Winhall, M. J. and Safe, S. H. 1989. Interspecies Differences In Invitro Thermal Inactivation Of Unliganded Hepatic Ah-Receptor *Chemosphere* 19:1241-1244. DOI: 10.1016/0045-6535(89)90440-2

1990

- 10 **Landers, J.P.**, Birse, L. M., Nakai, J. S., Winhall, M. J. and Bunce, N. J. 1990. Chemically-induced hepatic cytosol from the Sprague-Dawley Rat: Evidence for specific binding of 2,3,7,8-TCDD to components kinetically distinct from the Ah receptor. *Toxicol. Lett.* 51:295-302. DOI: 10.1016/0378-4274(90)90072-T
- 11 **Landers, J.P.** and Bunce, N. J. 1990. Hepatic Ah receptor from the Wistar rat: Role of solvation in receptor structure and inactivation. *J. Biochem. Toxicol.* 5:33-39. DOI: 10.1002/jbt.2570050106 **xxxx citations**
- 12 Bunce, N.J., **Landers, J.P.**, Nakai, J. S., Winhall, M. J. and Safe, S.H. 1990. Invitro Thermal Inactivation Of Hepatic Ah Receptors From Several Mammalian-Species *Toxicol. In Vitro* 4:87-92. DOI: 10.1016/0887-2333(90)90028-R
- 13 Bunce, N. J., **Landers, J.P.** and Safe, S. H., Schneider, U. A. and Zacharewski, T. 1990. Chlorinated Trans Stilbenes - Competitive-Binding To The Ah Receptor, Induction Of Cytochrome-P-450 Monooxygenase Activity And Partial 2,3,7,8-Tcdd Antagonism. *Toxicol. Environ. Chem.* 28:217-29. Doi: 10.1080/02772249009357605
- 14 **Landers, J.P.**, Safe, S. H., Bunce, N. J. 1990. [³H]-Tetrachlorodibenzo-p-dioxin: An efficient photoaffinity label for the Ah receptor. *Chemosphere* 20(7-9):1241-1248. DOI: 10.1016/0045-6535(90)90252-O
- 15 **Landers, J.P.** and Bunce, N. J. 1990. The Ah receptor and the Mechanism of Toxicity. *Biochemical J.* 276:273-287.

1991

- 16 **Landers, J.P.**, Winhall, M. J., McCready, T., Sanders, D.A., Rasper, D., Nakai, J.S. and Bunce, N. J. 1991. Characterization of an inducible Aryl-Hydrocarbon receptor-like protein in rat liver. *J. Biol. Chem.* 266:9471-9480. PubMed ID: 1851747
- 17 **Landers, J.P.** and Bunce, N. J. 1991. The Ah receptor and the mechanism of dioxin toxicity. [Review] *Biochem. J.* 276:273-287. PubMed ID: 1646595 **316 citations**
- 18 **Landers, J.P.** and Spelsberg, T.C. 1991. The Unactivated Progesterone Receptor: the Presence and Role of Non-Receptor Protein Subunits (Commentary). *Chemtracts: Biochemistry and Molecular Biology.* March/April issue.
- 19 Horton, M., **Landers, J.P.**, Subramaniam, M., Goldberger, A., Toyoda, H., Littlefield, B., Hora, J., Gosse, B. and Spelsberg, T. C. 1991. Enrichment Of A 2nd Class Of Native Acceptor Sites For The Avian Oviduct Progesterone-Receptor As Intact Chromatin Fragments. *Biochemistry* 30:9523-9530. DOI: 10.1021/bi00103a020
- 20 Rejman, J., **Landers, J.**, Goldberger, A., Schuchard, M., McCormick, D.J., Gosse, B. and Spelsberg, T.C. 1991. Purification of a nuclear protein (receptor binding factor-1) associated with the chromatin acceptor sites for the avian oviduct progesterone receptor. *J. Prot. Chem.* 10:651-667.
- 21 **Landers, J.P.** and Spelsberg, T.C. 1991. Updates and new models for steroid hormone action. [Review] *Ann. N.Y. Acad. Sci.* 637:26-55. DOI: 10.1111/j.1749-6632.1991.tb27299.x
- 22 **Landers, J.P.** 1991. High performance capillary electrophoresis of biological macromolecules. [Review] *BioEssays* 13(5):252-258. DOI: 10.1002/bies.950130509

1992

- 23 **Landers JP**, Spelsberg TC. New concepts in steroid hormone action: transcription factors, proto-oncogenes, and the cascade model for steroid regulation of gene expression. *Crit Rev Eukaryot Gene Expr.* 1992;2(1):19-63. PubMed ID:1543897 **176 citations**
- 24 **Landers, J.P.**, Schuchard, M., Sismelich, T. and Spelsberg, T. C. 1992. High performance capillary electrophoretic analysis of chloramphenicol acetyl transferase (CAT) activity. *J. Chrom.* 603(1-2):247-257. DOI: 10.1016/0021-9673(92)85368-4
- 25 **Landers, J.P.**, Oda, R.P., Madden, B., and Spelsberg, T. C. 1992. High-Performance Capillary Electrophoresis Of Glycoproteins - The Use Of Modifiers Of Electroosmotic Flow For Analysis Of Microheterogeneity. *Anal. Biochem.* 205:115-124. DOI: 10.1016/0003-2697(92)90587-W **xxxx citations**
- 26 **Landers, J.P.**, Oda, R.P., Madden, B., Sismelich, T. and Spelsberg, T. C. 1992. Reproducibility Of Sample Separation Using Liquid Or Forced Air Convection Thermostated High-Performance Capillary Electrophoresis Systems. *J. High Res. Chromatog.* 15(8):517-525. IDS Number: JN012
- 27 **Landers, J.P.**, Oda, R.P. and Schuchard, M.D. 1992. Separation of boron-complexed diol compounds using high performance capillary electrophoresis. *Anal. Chem.* 64(22):2846-2851. DOI: 10.1021/ac00046a032

1993

- 28 Oursler, M.-J., **Landers, J.P.** and Spelsberg, T.C. 1993. Estrogen effects on osteoblasts and osteoclasts. [Review] *Ann. Med.* 25:361-371. DOI: 10.3109/07853899309147298
- 29 Landers, J.P., Oda, R.P., Leibenow, J., And Spelsberg, T. C. 1993. Utility Of High-Resolution Capillary Electrophoresis For Monitoring Peptide Homo-Dimer And Hetero-Dimer Formation. *J. Chromatog.* 652:109-117. DOI: 10.1016/0021-9673(93)80651-N **16 Citations**
- 30 Zhuang Y-H, **Landers, J.P.**, Schuchard, M.D., Spelsberg T. C., and Tuohimaa P. 1993. Immunohistochemical localization of the avian progesterone receptor and its candidate receptor-binding factor, RBF-1. *J. Cell. Biochem.* 54:1-11. DOI: 10.1002/jcb.240530416
- 31 Schuchard, M., **Landers, J. P.**, Punkay, N. and Spelsberg, T. C. 1993. Steroid-Hormone regulation of the nuclear protooncogenes. *Endocrin. Rev.* 14(6): 659-669. DOI: 10.1210/er.14.6.659
- 32 Spelsberg, T.C., Subramaniam, M., Harris, S.A., Oursler, M.J., Schuchard, M.D., **Landers, J.P.** and Punkay, N. 1993. Nuclear proto-oncogenes as regulatory genes and markers of steroid action in all target cells. [Review] In "Proto-oncogenes and growth factors in steroid hormone-induced growth and differentiation." (G. Stancel, ed.) CRC Press, Boca Raton, FL. pp. 69-86.
- 33 Spelsberg, T.C., Oursler, M.J., **Landers, J.P.**, Subramaniam, M., Harris, S.A. and Riggs, B.L. 1993. Human Bone cells: Newly discovered target cells for sex steroids. [Review] In "Steroid Receptors", (V. Moudgil, ed.) Birkhauser Publishing, Boston, MA.
- 34 **Landers, J.P.**, Oda, R.P., Spelsberg, T.C., Nolan, J. and Ulfelder, K. 1993. Capillary electrophoresis: A powerful micro-analytical technique for biologically active molecules. *Biotechniques* 14(1):98-111. PubMed ID: 8424883
- 35 **Landers J.P.** 1993. Capillary Electrophoresis - Pioneering New Approaches For Biomolecular Analysis. [Review] *TIBS* 18(11):409-414. DOI: 10.1016/0968-0004(93)90135-A
- 36 Tomlinson, A.J., **Landers, J.P.**, Lewis, A.S.I. and Naylor, S. 1993. Buffer conditions affecting the separation of Maillard reaction products by capillary electrophoresis. *J. Chromatog.* 652:171-177. DOI: 10.1016/0021-9673(93)80657-T
- 37 Tomlinson, A.J., Benson, L.M., **Landers, J.P.**, Scanlon, G.F., Fang, J., Gorrod, J.W. and Naylor, S. 1993. Investigation of the metabolism of the neuroleptic drug haloperidol by capillary electrophoresis. *J. Chromatog A.* 652:417-426. doi:10.1016/0021-9673(93)83261-P

1994

- 38 Oda, R.P., Spelsberg, T.C. and **Landers, J.P.** 1994. Commercial capillary electrophoresis instrumentation. *LC/GC* 12(1):50-51. Accession Number: WOS:A1994MP63800007
- 39 **Landers, J. P.**, Subramaniam, M., Gosse, B., Weinshilboum, R. and Spelsberg, T. C. 1994. The ubiquitous nature of the receptor binding factor-1 (RBF-1) for the progesterone receptor in avian tissues. *J. Cell. Biochem.* 56:1-11. DOI: 10.1002/jcb.240550211 **6 citations**
- 40 Oda, R.P., Madden, B., Spelsberg, T. C. and **Landers, J. P.** 1994. Alpha,Omega-Bis-Quaternary Ammonium Alkanes As Effective Buffer Additives For Enhanced Capillary Electrophoretic Separation Of Glycoproteins *J. Chromatogr.* 680:85-92. DOI: 10.1016/0021-9673(94)80055-3 **47 Citations**
- 41 Oda, R.P., Madden, B., Morris, J.C., Spelsberg, T. C. and **Landers J.P.** 1994. Multiple-buffer-additive strategies for enhanced capillary electrophoretic separation of peptides. *J. Chrom.* 680:341-351. DOI: 10.1016/0021-9673(94)80084-7

1995

- 42 Strausbauch, M.A., Xu, S.Z., Ferguson, J.E., Nunez, M., Machacek, D., Lawson, G.M., Wettstein, P.J. and **Landers J.P.** 1995. Concentration and analysis of hypoglycemic drugs using solid phase extraction-capillary electrophoresis. *J. Chromatogr.* 717:279-291. DOI: 10.1016/0021-9673(95)00743-6
- 43 **Landers J.P.** 1995. Clinical capillary electrophoresis. [Review] *Clin. Chem.* 41:495-509. PubMed ID: 7720237
- 44 Strausbauch, M.A., Madden, B.J., Wettstein, P.J. and **Landers J.P.** 1995. Sensitivity enhancement and second dimensional information from the SPE-CE analysis of entire HPLC fractions. *Electrophoresis* 16:541-548. DOI: 10.1002/elps.1150160189
- 45 Felmler, T.A., Mitchell, P.S., Ulfelder, K.J., Persing, D.A. and **Landers J.P.** 1995. Capillary electrophoresis for the post-amplification detection of a hepatitis C virus-specific DNA product in human serum. *J. Cap. Elect.* 2:125-130.
- 46 Nunez, M.E., Ferguson, J.E., Machacek, D., G.M. Lawson, T.C. Spelsberg and **Landers J.P.** 1995. Detection of hypoglycemic drugs in human urine using micellar electrokinetic chromatography *Anal. Chem.* 67(20):3668-3675. DOI: 10.1021/ac00116a009
- 47 Ji, A.J., Nunez, M.E., Machacek, D., Ferguson, J.E., Iossi, M.F., Kao, P.C. and **Landers J.P.** 1995. Separation of urinary estrogens by micellar electrokinetic chromatography. *J. Chromatogr.* 669:15-26. DOI: 10.1016/0378-4347(95)00143-7
- 48 Felmler, T.A., Oda, R.P., Persing, D.A. and **Landers J.P.** 1995. Capillary electrophoresis of DNA: Potential utility for clinical diagnoses. *J. Chromatogr.* 717:127-137. DOI: 10.1016/0021-9673(95)00491-2
- 49 Oda, R.P. and **Landers J.P.** 1995. Application of capillary electrophoresis to the analysis of proteins. [Review] *Bioseparations* 5:315-328.

1996

- 50 Strausbauch, M., Landers J.P. and Wettstein, P.J. 1996. Mechanism of peptide separations by solid phase extraction-capillary electrophoresis (SPE-CE) at low pH. *Anal. Chem.* 68(2):306-314. DOI: 10.1021/ac9503217 **97 citations**
- 51 Oda, R.P. and **Landers J.P.** 1996. High resolution glycoprotein analysis using capillary electrophoresis. [Review] *Molec. Biotechnol.* 5:165-170. DOI: 10.1007/BF02789064
- 52 Oda, R.P. and Landers, J.P. 1996. Effect of cationic buffer additives on the capillary electrophoretic separation of serum transferrin from different species. *Electrophoresis* 17(2):431-7. DOI: 10.1002/elps.1150170224
- 53 Clark, R., Namyst-Goldberg, C., Sanders, L., Oda, R.P., Katzmann, J.A., Kyle, R.A. and Landers, J.P. 1996. Rapid capillary electrophoretic analysis of human serum proteins: Qualitative comparison with high-throughput agarose gel electrophoresis. *J. Chromatogr.* 744(1):205-214. DOI: 10.1016/0021-9673(96)00190-2
- 54 Oda, R.P., Wick, M., Rueckert, L.M., Lust, J., and **Landers, J.P.** 1996. Evaluation of capillary electrophoresis in polymer solutions with laser-induced fluorescence detection for the automated detection of T-cell gene rearrangements in lymphoproliferative disorders. *Electrophoresis* 17(9):1491-1498. DOI: 10.1002/elps.1150170914
- 55 Oda, R.P. and **Landers, J.P.** 1996. High resolution glycoprotein analysis using capillary electrophoresis. *Mol. Biotechnol.* 5(2):165-170. DOI: 10.1007/BF02789064

1997

- 56 Roche, M., Oda, R.P., Machacek, D., Lawson, G.M. and **Landers, J.P.** 1997. Enhanced throughput with capillary electrophoresis via continuous-sequential sample injection. *Anal. Chem.* 69(1):99-104. DOI: 10.1021/ac960514+ **6 citations**
- 57 Pancholi, P., Oda, R.P., Mitchell, P.S., Persing, D.A. and Landers J.P. 1997. Diagnostic detection of herpes simplex and hepatitis C viral amplicons by capillary electrophoresis: Comparison with Southern blot detection. *Molec. Diagnostics.* 2(1):27-38. DOI: 10.1016/S1084-8592(97)80008-2
- 58 Katzmann, J.A., Clark, R., Namyst-Goldberg, C., Sanders, E., Kyle, R.A. and Landers, J.P. 1997. Identification of monoclonal proteins in serum: A quantitative comparison of acetate, agarose gel, and capillary electrophoresis. *Electrophoresis* 18:1775-80. DOI: 10.1002/elps.1150181011
- 59 Dong, M., Oda, Robert P., Strausbauch, M.A., Wettstein, P.J., **Landers, J.P.** and Miller, L.J. 1997. Hydrophobic peptide mapping of clinically relevant heptahelical membrane proteins by capillary electrophoresis. *Electrophoresis* 18:1767-74. DOI: 10.1002/elps.1150181010
- 60 Korf, G., O'Kane, D. and **Landers J.P.** 1997. Capillary electrophoresis with laser induced fluorescence detection for the analysis of free and immune complexed green fluorescent protein. *Anal. Biochem.* 251:210-218. DOI: 10.1006/abio.1997.2242
- 61 Trushina, E., Oda, R.P., Clarke, N.J., **Landers, J.P.** and McMurray, C. 1997. Determination of nitrite and nitrate reduction by capillary ion electrophoresis. *Electrophoresis* 18:1890-1898. DOI: 10.1002/elps.1150181027
- 62** Oda, R.P., Clark, R.J., Katzmann, J.A., and **Landers, J.P.** 1997. Capillary electrophoresis as a clinical tool for the analysis of protein in serum and other body fluids. *Electrophoresis* 18:1715-23. DOI: 10.1002/elps.1150181004
- 63 Bergert, J., Liedtke, R., Oda, R.P., Landers, J.P., Wilson, D. 1997. Development of a nonisotopic capillary electrophoresis-based method for measuring glomerular filtration rate. *Electrophoresis* 18:1827-1835. DOI: 10.1002/elps.1150181018
- 64 Roche, M., Oda, R.P., and **Landers, J.P.** 1997. Capillary electrophoresis for the detection of hypoglycemic drug metabolites in human urine. *Electrophoresis* 18:1865-1874. DOI: 10.1002/elps.1150181024
- 65 Oda, R.P., Prasad, R., Stout, R.L., Coffin, D., Patton, W.P., Kraft, D.L., O'Brien, J.F. and Landers, J.P. 1997. Capillary electrophoresis-based separation of transferrin sialoforms in patients with carbohydrate-deficient glycoprotein syndrome. *Electrophoresis* 18:1819-1826. PMID: 9372275 [PubMed - indexed for MEDLINE] DOI: 10.1002/elps.1150181017 **51 citations**

1998

- 66 Clark, R., Katzmann, J.A., Kyle, R., Fleisher, M. and **Landers, J.P.** 1998. Differential diagnosis of gammopathies by automated capillary electrophoresis: Analysis of serum samples problematic by agarose gel electrophoresis. *Electrophoresis* 19(14):2479-84. PMID: 9820971 [PubMed - indexed for MEDLINE]
- 67 Roche, M.E., Oda, R.P., and Landers, J.P. 1997. Capillary electrophoresis in Biotechnology. (review). *Biotechnol. Prog.* 13(5): 659-668. DOI: 10.1021/bp970079k
- 68 Katzmann, J.A., Clark, R., Sanders, E. **Landers, J.P.** and Kyle, R.A. 1998. Prospective study of serum protein capillary zone electrophoresis and immunotyping of monoclonal proteins by immunosubtraction. *Am. J. Clin. Pathol.* 110:503-509. PubMed ID: 9763037 **55 citations**
- 69 Roche, M.E., Anderson, M.A., Oda, R.P., Riggs, L.B. Strausbauch, M.A., Okazaki, R. Wettstein, P.J. and Landers, J.P. 1998. Capillary electrophoresis of insulin-like growth factors: enhanced UV detection using dynamically-coated capillaries and on-line solid phase extraction (SPE-CE). *Anal. Biochem.* 258:87-95. DOI: 10.1006/abio.1997.2553
- 70 Borson, N.D., Strausbauch, M.A., Wettstein, P.J., Oda, R. P., Johnston, S.L., and **Landers, J.P.** 1998. Direct quantitation of RNA transcripts by competitive single-tube RT-PCR and capillary electrophoresis. *BioTechniques* 25(1):130-137. PubMed ID: 9668987 **40 citations**

- 71 Palmer, J., Atkinson, S., Yoshida, W.Y., Stalcup, A.M. and **Landers, J.P.** 1998. Charged chelate-capillary electrophoresis of endogenous corticosteroids *Electrophoresis* 19(16-17):3045-3051. DOI: 10.1002/elps.1150191642
- 72 Oda, R.P., Strausbauch, M.A., Borson, N., Hühmer, A.F.R., Jurens, S., Craighead, J., Wettstein, P., Eckloff, B., Kline, B. and **Landers, J.P.** 1998. Infrared-mediated thermocycling for ultrafast polymerase chain reaction (PCR) amplification of DNA. *Anal. Chem.* 70(20):4361-4368. DOI: 10.1021/ac980452i PubMed ID: 9763037 **140 citations**
- 73 Clark, R., Fleisher, M., Katzmann, J.A. and **Landers, J.P.** 1998. Differential diagnosis of gammopathies by automated capillary electrophoresis: Analysis of serum samples problematic by agarose gel electrophoresis. *Electrophoresis* 19(14):2479-84. DOI: 10.1002/elps.1150191421
- 74 Tian, H., Hühmer A.F.R., **Landers, J.P.** 1998. New Vistas in Clinical Diagnostics: From Capillary Electrophoresis to Rapid Diagnostics on Glass Chips. *Curr. Top. Anal. Chem.* 1:171-189.

1999

- 75 Sanders, E., Katzmann, J.A., Clark, R., Oda, R.P., Shihabi, Z.K. and **Landers, J.P.** 1999. Development of capillary electrophoresis as an alternative to high resolution agarose electrophoresis for the diagnosis of multiple sclerosis. *Clin. Chem. Lab. Med.* 37(1):37-46. PMID: 10094377 [PubMed - indexed for MEDLINE] DOI: 10.1515/CCLM.1999.006 **15 citations**
- 76 Palmer, J.F., Munro, N., and **Landers, J.P.** 1999. A universal concept for stacking neutral analytes in micellar electrokinetic chromatography. *Anal. Chem.* 71(9):1679-1687. DOI: 10.1021/ac981302a **200 citations**
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- 23 Karcher, R.E. and Landers, J.P. Electrophoresis. In "Tietz Textbook of Clinical Chemistry and Molecular Diagnostics" 4th Edition (ed. Burtis, Ashwood and Bruns) **Chapter 5**. Pg 121, Elsevier, Amsterdam, The Netherlands
- 24 Karcher, R.E. and Landers, J.P. Electrophoresis. In "Tietz Textbook of Clinical Chemistry and Molecular Diagnostics" 5th Edition (ed. Burtis, Ashwood and Bruns) **Chapter 12**. Pg 287, Elsevier, Amsterdam, The Netherlands

- 25 Bazydlo, L.A. and Landers, J.P. Microfabrication and Microfluidics and Their Application to Clinical Diagnostics. In "Tietz Textbook of Clinical Chemistry and Molecular Diagnostics" 5th Edition (ed. Burtis, Ashwood and Bruns) **Chapter 18**. Pg 443-68. Elsevier, Amsterdam, The Netherlands
- 26 Bazydlo, L.A. and Landers, J.P. Microfabrication, Microfluidics and their Application to Clinical Diagnostics. In "Tietz Textbook of Clinical Chemistry and Molecular Diagnostics" 6th Edition (ed. Burtis, Ashwood and Bruns) **Chapter 24**. Elsevier, Amsterdam, The Netherlands
- 27 L.A. Bazydlo and J.P. Landers, 'Microfabrication and Microfluidics and Their Application in Clinical Diagnostics'. (Ch 27) Tietz Textbook of Clinical Chemistry and Molecular Diagnostics, 6th Edition (2020)
- 28 L.A. Bazydlo and J.P. Landers, 'Electrophoresis'. (Ch 15) Tietz Textbook of Clinical Chemistry and Molecular Diagnostics, 6th Edition (2020)

technical notes

- 1 **Landers, J. P.**, Oda, R.P., Madden, B., and Spelsberg, T. C. 1992. Utility of borate buffer for the P/ACE capillary electrophoresis analysis of glycoprotein microheterogeneity. Beckman Instruments Technical Bulletin DS-867.
- 2 Oda, R.P., Leibenow, J., Spelsberg, T. C. and **Landers, J. P.** 1993. Monitoring disulfide bond formation by P/ACE capillary electrophoresis. Beckman Instruments Technical Bulletin A-1757.
- 3 Tian, H. Jaquins-Gerstl, A., Munro, N., Trucco, M., Brody L.C. and **Landers J.P.** 2000. CE-SSCP Screening for BRCA1 and BRCA2 - Allelic Mutations Associated with Breast Cancer. Beckman Instruments P/ACE setter Vol. 3 Iss. 4, 1999.
- 4 **Landers, J.P.** Molecular Diagnostics: It's Closer Than You Might Think. Beckman Coulter Life - First Quarter 2000.

books

Editor - *Handbook of Capillary Electrophoresis Ed. J. Landers (1st Edition)* CRC Press (Boca Raton, FL) 1993.

Editor - *Handbook of Capillary Electrophoresis (2nd Edition)* CRC Press (Boca Raton, FL) 1996.

Editor - *Handbook of Capillary & Microchip Electrophoresis & Associated Microtechniques*, CRC Press (Boca Raton, FL) 2007.

LECTURES OUTSIDE HOME INSTITUTION (1992-2021)

Invited Speaker - Beckman *Discovery Series*, Minneapolis, Minnesota; November 1992.

Invited Speaker - *6th Annual Meeting of the Protein Society* in San Diego, California; July 1992.

Invited Speaker - Dept. of Chemistry and Biochemistry, Concordia University, Montreal, Quebec, CANADA; April 1992.

Invited Speaker - Dept. of Chemistry, University of British Columbia, Vancouver, B.C., CANADA; January 1993.

Invited Speaker - Dept. of Pharmacology, University of Toronto Medical School, Toronto, Ontario, CANADA; August 1993.

Invited Speaker - Beckman Instruments (Canada) *Discovery Series*, Toronto, Ontario and Montreal, Quebec; Nov. 1993.

Invited Speaker - *Meeting of the Canadian Federation of Biological Societies*, Montreal, Quebec, CANADA; June 1994.

Invited Speaker - *Perspectives in Protein Engineering* at Oxford University, Oxford, ENGLAND; September 1994.

Invited Speaker - Dept. of Physiology, University of Toronto Medical School, Toronto, Ont., CANADA; September 1994.

Invited Speaker - Soane Technologies, Hayward, CA; July 1995.

Invited Speaker - Merion-Merrill-Rochelle, Kansas City, MI; October 1995.

Invited Speaker - Sigma Chemical Company, St. Louis, MI; February 1996.

Invited Speaker - American Society of Biomolecular Resource Facilities, San Francisco, CA; April 1996.

Invited Speaker - Beckman Instruments, San Francisco, CA; April 1996.

Invited Speaker - Dept. of Laboratory Medicine, University of Calgary, Calgary, Alberta, Canada; August 1996.

Invited Speaker - Dept. of Laboratory Medicine, Royal Victoria Hospital, Montreal, Quebec, Canada; November 1996.

Invited Speaker - The Hospital for Sick Children, Toronto, Ontario, Canada; November 1996.

Invited Speaker - Dept. of Pharmacology and Toxicology, University Western Ontario, London, Ont., Canada; Nov. 1996.

Invited Speaker - New Jersey Institute of Technology, Newark, NJ; February 1998.

Invited Speaker - New Jersey Analytical Society, Newark, NJ; February 1998.

Invited Speaker - Hewlett Packard Labs, Palo Alto, CA; March 1998.

Invited Speaker - University of Pittsburgh, Department of Molecular Genetics and Biochemistry. April 1998.

Invited Speaker - Beckman/Coulter Diagnostics, Brea, CA. July 1998.

Invited Speaker - ACLARA Biosciences, Hayward, CA. July 1998.

Invited Speaker - Dept. of Chemistry at University of Guelph, Guelph, Ontario, Canada, September 1998

Invited Speaker - Beckman Instruments Discovery series, October 1998

Colloquium Lecture - Dept. of Chemistry at Texas A&M, College Station, TX, October 1998.

Invited Speaker and Session Chair - Federation of Analytical Chemistry and Spectroscopy Societ., Austin, TX, Oct. 1998.

Invited Speaker - Dept. of Pharmacology, University of Pittsburgh Medical Center, Pittsburgh, PA -November 1998.

Keynote Lecture - Minisymposium on "21st Century MS: Diagnosis of Disease", Carnegie Mellon University, Nov 1998.

Invited Speaker - Society of Analytical Chemists of Pittsburgh, Duquene University, Pittsburgh, PA, January 1999.

Invited Speaker - Ohio Wesleyan University, Delaware, OH, April, 1999.

Invited Speaker - Novel Technologies in Biomedical Analysis, Sandefjord, Norway, June 1999.

Colloquium Lecture - Dept. of Pharmacology and the Cancer Center, Mayo Clinic, July 1999

Plenary Lecturer - Meeting of the Electrophoresis Society "CE in Medicine", NIH, Bethesda, MD, August 1999.

Award Recipient Lecture - Eli Lilly, Indianapolis, IN, Sept. 1999.

Invited Speaker - American Association of Pharmaceutical Scientists, New Orleans, November 1999.

Invited Speaker - Worcester Polytechnical Institute, Worcester, MA, November 1999.

Invited Speaker - Laboratory Automation 2000, Palm Springs, CA, January 2000.

Invited Speaker - Washington Chromatography Society Meeting, Washington, DC., Jan. 2000.

Invited Speaker - HPCE-2000, Palm Springs, CA Jan 2001.

Invited Speaker - Chemistry, Wake Forest University, Winston-Salem, NC, March 2000.

Invited Speaker - IXth International Symposium on Luminescence Spectrometry, Montpellier, France, May 2000.

Invited Speaker - Engineering, University of Virginia, Sept. 2000.

Invited Speaker - EuroLab Automation-2000 Conference, London, England Oct. 2000.

Invited Speaker - BioMEMS Conference, Ohio State University, Sept. 2000.

Invited Speaker - Chemistry, James Madison University, Harrisonburg, VA, Nov. 2000.

Invited Speaker - Bioanalytical Symposium at the ACS meeting, New Orleans, Dec. 2000.

Invited Speaker - Latin America CE-2000 Conference, Sao Paulo, Brazil, Dec. 2000.

Invited Speaker - HPCE-2001, Boston, MA Jan 2001.

Invited Speaker - Genomic Sample Prep Conference, Boston, April 2001.

Invited Speaker - Chemistry, Penn State University, State College, PA, April 2001.

Invited Speaker - Sigma-Aldrich Chemical Company, St. Louis, MO, April 2001.

Invited Speaker - Chemistry, Louisiana State Univ., Baton Rouge, LA, April 2001.

Invited Speaker - Pharmaceutical and Biomedical Analysis Meeting, Monterey, CA, April 2001.

Invited Speaker - 2001 Canadian Society of Chemistry Conference, Montreal, May 2001.

Invited Speaker - SmallTalk-2001, San Diego, CA, August 2001.

Invited Speaker - Chemistry, Virginia Tech, Blacksburg, VA, Sept. 2001.

Invited Speaker - Latin America CE-2001 Conference, Santiago, Chile Dec. 2001.

Keynote Lecture - HPCE-2002, Stockholm, Sweden April 2001.

Plenary Lecture - Xth International Symposium on Luminescence Spectrometry, Granada, Spain, June 2002

Invited Speaker - IBC Conference on Microfluidics, San Francisco, CA Sept. 2002.

Invited Speaker - National Institutes of Health, Bethesda, MD, Sept. 2002.

Invited Speaker - ITP Conference on Capillary Electrophoresis, Helsinki, Finland Sept. 2002.

Invited Speaker - Asian-Pacific Conference on Capillary Electrophoresis, Shanghai, China, Oct. 2002.

Invited Speaker - University of Toronto, Toronto, Ontario, CANADA, Oct. 2002.

Invited Speaker - Virginia Biotechnology Summit, Tysons Corner, VA, Oct. 2002.

Invited Speaker - Dept. of Chemistry, Northeastern University, Nov. 2002.

Invited Speaker - Latin America CE-2003 Conference, Buenos Aires, Argentina Dec. 2002.

Invited Speaker - Johnson Space Center, NASA April-04, Houston, TX

Plenary Lecture - Lab-On-A-Chip Symposium Pittsburgh, PA April 9, 2005

Invited Speaker - Dept. of Bioengineering, Virginia Commonwealth University Nov-04

Invited Speaker - Association for Biomolecular Resource Facilities Feb-04, Savannah, GA

Invited Speaker - Symposium on MicroScale Bioseparations Feb-05, New Orleans, LA

Invited Speaker - 4th Latin American Conference on Capillary Electrophoresis Nov-04 Toledo, Spain

Keynote Lecture - High Performance Capillary Electrophoresis Conference Feb-04 Salzburg, Austria

Invited Speaker - Virginia Institute of Forensic Science and Medicine conference on Human ID April-04- Charlottesville, VA

Invited Speaker - Meeting of the American Association of Bone and Joint Surgeons Nov-04- Tampa Bay, FL

Invited Speaker - HT Microanalytical Oct-04, Albuquerque, NM

Invited Speaker - HT Microanalytical Oct-04, Phoenix, AZ

Invited Speaker - 5th Annual Land-o-Lakes Bioanalytical Conference Oct-04, Merrimac, WI

Keynote Lecture - 8th Latin American Conference on Capillary Electrophoresis Dec-05 Sao Paulo, Brazil

Invited Speaker - Association for Laboratory Automation Jan-06 Palm Springs, CA

Invited Speaker - Biomedical Engineering Society Sept-05 Baltimore, MD

Invited Speaker - The Pittsburgh Conference Feb-06 Orlando, FL

Invited Speaker - Adams Award Symposium-The Pittsburgh Conference Feb-06 Orlando, FL

Invited Speaker - Dept of Chemistry University of Kansas May-05 Lawrence, KS

Invited Speaker - Dept. of Pathology, Mayo Clinic, Nov-05 Rochester, MN

Invited Speaker – Dept. of Chemistry, University of Minnesota, Nov-05 Minneapolis, MN
Invited Speaker – Dept. of Chemistry, Northwestern University Nov-05 Evanston, IL
Invited Speaker – ISMM-06 Hakone, Japan June-06
Invited Speaker – CEPHarm Jersey City, NJ Oct 2006
Invited Speaker – Nagoya, Japan Nov-06
Invited Speaker – MIT, Boston, MA March-07
Invited Speaker – PittCon-07 Chicago, IL March-07
Invited Speaker – American Association of Forensic Sciences San Antonio, TX Feb-07
Invited Speaker – SAIC, Washington, DC April-07
Invited Speaker – National Institute of Justice Workshop, Arlington VA, July 23, 2007.
Invited Speaker – NASA Microarray Workshop, Huntsville AL, Sept. 26, 2007.
Invited Speaker – Pfizer, St. Louis MO, October 1, 2007.
Invited Speaker – Micro-total Analysis Systems Conference, Paris, France Oct. 10, 2007.
Invited Speaker – Nanoprint and Nanoimprint Technology Conference, Paris, France, Oct. 11, 2007.
Hatch Lecturer – Clifford C. Hatch Lecture, University of Wyoming, Oct. 18, 2007.
Invited Speaker – Assuragen (Ambion) Austin TX, Nov. 19, 2007.
Invited Speaker – Texas A&M University Department of Chemical Engineering, College Station TX, Nov. 20, 2007.
Invited Speaker – Latin American Conference on Capillary Electrophoresis, Santiago, Chile, Dec. 4, 2007.
Invited Speaker – Association for Lab Automation, Palm Springs CA, Jan. 29, 2008.
Invited Speaker – BECON Lecture, Lockheed Martin Research and Development Facility, Rockville MD, Feb. 11, 2008.
Invited Speaker – Microscale Bioseparation Conference. Berlin, Germany, March 12, 2008.
Invited Speaker – Technological Advances in Human Identification Conference, Hampton VA, April 9, 2008.
Invited Speaker – A Generic Microfluidic Platform for Ultrafast Genotyping: Sample-In/Answer-Out Capabilities That Revolutionize Clinical Diagnostics, American Tissue Type Culture (ATTC). Manassas, VA. May, 2008.
Conf Speaker – National Institute of Justice Grantees Workshop. Crystal City, VA. June, 2008.
Invited Speaker – DARPA-MTO Exploratory Technical Workshop. Minneapolis, MN. June, 2008.
Invited Speaker – International Academy of Forensic Sciences Workshop on Microfluidics. New Orleans, LA. July, 2008.
Invited Speaker – NanoBio-Seoul Conference. Seoul, Korea. Oct. 14, 2008.
Invited Speaker – George Washington Univ. Nov. 14, 2008.
Invited Speaker – Lab Automation-09. Palm Springs, CA. January, 2009.
Invited Speaker – American Academy of Forensic Sciences Workshop on Microfluidics. Denver, CO. February, 2009.
Invited Speaker – National Space Biomedical Research Institute, NASA. Houston, TX. April, 2009.
Invited Speaker – Becton Dickinson – Raleigh Triangle Park NC, July 10, 2009.
Keynote Lecture – World Congress on Lab on a Chip, San Francisco CA, August 5-7, 2009
Invited Speaker – Society for Analytical Chemists of Pittsburgh (SACP), Pittsburgh PA, October 5, 2010.
Invited Speaker – Chemistry Department, East Carolina University, Greenville NC, October 23, 2009.
Invited Speaker – NCI's 9th Principal Investigators Meeting for the IMAT Program, October 26-28, 2009.
Invited Speaker – FIO Corp., Toronto Canada, December 16, 2009.
Invited Speaker – Pittcon, Orlando FL, March 2, 3, 2010.
Invited Speaker – Promega Corp, Madison WI, May 26 2010 (company wide).
Invited Speaker – Promega Corp, Madison WI, May 26, 2010 (closed)
Invited Speaker – Dept of Molecular Biology, Natl Ctr Biodefense & Infectious Disease, George Mason Univ, May 21, 2010
Invited Speaker – 17th International Meeting on Capillary Electrophoresis Techniques, Baltimore MD, Aug 29-Sept. 1, 2010
Invited Speaker – 2nd Annual Current and Future Advances in Human Identification Conf, Norfolk VA, Sept. 19-20, 2010
Invited Speaker – Biometrics Consortium Conference 2010, Tampa FL, Sept. 21-23.
Invited Speaker – MicroTAS, Amsterdam/Groningen, Oct. 2 - 8, 2010
Invited Speaker – Lab Automation 2011, Palm Springs CA, Jan. 29- Feb. 2, 2011.
Invited Speaker – Pittcon, Atlanta GA, Mar. 13-16, 2011.
Saferstein Lecturer – 12th Francine and Michael Saferstein Memorial Lecture, Northeastern University, Boston MA, Mar-2011.
Invited Speaker – CASSS - International Separation Science Society, May 1-5, 2011, San Diego CA.
Invited Speaker – Green Mountain DNA Conference, July-2011, Burlington VT.
Invited Speaker – *Congresso Analitica Latin America* 2011, Sept-2011, Sao Paulo, Brazil
Invited Speaker – 8th Annual CFS: Promega 2011 - DNA Technical Education Workshop, Nov-2011, Toronto, Canada
Invited Speaker – 17th Latin-American Symposium on CE and Microchip Technology, December 3-5, 2011, Miami FL.
Invited Speaker – American Academy of Forensic Sciences, February 22-24, 2012, Atlanta GA.
Invited Speaker – 27th Intl Symp on MicroScale Bioseparations and Analyses, February 12-15, 2012, Geneva, Switzerland.
Invited Speaker – University of California, Santa Barbara, April 24, 2012
Invited Speaker – BD Diagnostics Research Symposium, June 15, 2012. Durham, NC
Invited Speaker – BCC, September 18, 2012, Tampa Bay FLA
Invited Speaker – 23rd International Symposium on Human Identification, Oct. 15, 2012, Nashville TN

Invited Speaker – MicroTAS, October 25-November 1, 2012, Okinawa, Japan
Invited Speaker – Southeastern Regional Meeting of the American Chemical Society, 14-17 November, 2012, Raleigh NC
Invited Speaker – Northeastern University April-2012 Boston, MA
Invited Lecture – Canadian Royal Mounted Police – Forensics Division Jan-2012 Ottawa, Canada
Invited Lecture – DTU – Jan-2012 Copenhagen, Denmark
Invited Lecture – Green Mountain DNA Conf – July-2012 Copenhagen, Denmark
Invited Lecture – Chemistry, VCU – Nov-2012 Richmond, VA
Invited Lecture – Biomedical Engineering, McGill University – Nov-2012 Montreal, Quebec, Canada
Bergveld Lecturer – Annual lecture in honor of Piet Bergveld – Jan-2013, University of Twente, The Netherlands
Invited Lecture – Mechanical Engineering, UC-SB – April-2013 Santa Barbara, CA
Invited Lecture – Becton Dickinson – May-2013 Raleigh, NC
Plenary Lecture – MRS Research and Innovation, German University Mar-2014, Cairo, Egypt
Invited Lecture – Chemistry, UNC-Charlotte – Nov-2014 Charlotte, NC
Plenary Lecture – CIHR Training Program in Regenerative Medicine, Toronto General Hospital Feb-2014 Toronto, Ontario
Bernard Langer Lecturer – Institute of Medical Science. University of Toronto, May-2014 Toronto, Ontario
Plenary Lecture – Dept of Forensic Sciences, VCU – May-2014 Richmond, VA
Invited Lecture – Green Mountain DNA Conference – Jul-2014 Burlington, VT
Invited Lecture – Workshop on Forensic Rapid DNA Analysis – Oct-2014 Seoul, Korea
Invited Lecture – World Forensic Festival – Oct-2014 Seoul, Korea
Plenary Lecture – MicroTAS Conference on Microfluidics, Oct-2014, San Antonio, TX
Invited Lecture – Chemistry, UNC-Charlotte – Nov-2014 Charlotte, NC
Invited Lecture – Defense Forensic Science Center – Dec-2014 Atlanta, GA
Invited Lecture – DOD Kickoff Meeting – Jan-2015 Charlottesville, VA
Invited Lecture – Pittsburgh Conf – Mar-2015 New Orleans, LA
Invited Lecture – Green Mountain DNA Conference – Jul-2015 Burlington, VT
Presentation – *Analytica Chimica Acta* Editors Meeting – July 2015 – Mallorca, Spain
Plenary Lecture – 22nd Intl Symp on Electro/Liquid Phase-Separations/ 8th Nordic Sepn Science Aug-2015, Helsinki Finland
Invited Lecture – Eastman Chemical Company – Sept. 2015, Kingsport, TN
Invited Lecture – American Academy of Forensic Sciences – February 2016 – New Orleans
Invited Lecture – American Academy of Forensic Sciences: NIJ Forensic Science R&D Sympos – Mar 2016, Las Vegas NV
Invited Lecture – Genetics in Forensics Congress – March 2016, London
Invited Lecture – Bode West Annual DNA Conference- March 2016, San Diego CA
Invited Lecture – Pittsburgh Conference – March 2016, Atlanta GA
Invited Lecture – 2016 QIAGEN International Investigator Forum, Miami FL
Invited Lecture – Bode Mod-Atlantic: DNA & Investigators Conference, November 2016, Philadelphia PA
Invited Lecture – University of Tennessee, Knoxville, November 2016
Invited Lecture – NRL – December 2016 – Washington DC
Invited lecture – Canadian Chemistry Conference – May 2017 – Toronto
Invited Lecture – University of Kansas – May 2017 – Kansas City
Invited Lecture – Lab-on-a-Chip & Microfluidics Conference – May 2017 -- Munich
Invited Lecture – Nobel Symposium on Microfluidics – June 2017 -- Stockholm
Presentation – ISHI – Promega – October 2017 – Seattle
Plenary Lecture – MicroTas – October 2017 -- Savannah
Invited Lecture – Virginia Commonwealth University – October 18 2017 -- Richmond
Invited Lecture & Workshop – Keene State College – November 2017 – Keene NH
Presentation – American Academy of Forensic Sciences – February 2018 – Seattle
Invited Lecture – PITTCO – February 2018 – Orlando
MIndSET Lecturer – San Diego State University – March 2018
Invited Lecture – DoD in Reston, VA 11/15/19. “Harnessing Microfluidics for a Small Portable, Cost-effective and Ultrafast Forensic DNA Analysis” the Point-of-Care”
Invited Lecture – U Southampton (UK) 10/16/19 “A Small Portable, Cost-effective System for Ultrafast Genotyping”
PittCon Lecturer – U Pitt 11/14/19 “Microfluidics for a Portable System for Ultrafast Forensic DNA Analysis”
Invited Lecture. – Christopher Newport University, 2/7/19 “DNA FORENSICS: Where Microfluidics, Engineering and Molecular Biology Intersect”
Invited Lecture – No Carolina Ag. & Tech. University. 2/14/19. “DNA FORENSICS: The Intersection of uTAS & Engineering”
Invited lecture – College of William & Mary 2/1/19.
Plenary Lecture – CE Pharm Conf, Bethesda, MD 10/2/19 “A Small Portable, Cost-effective System for Ultrafast Genotyping”

Plenary Lecture – Intl Symp Applied Biological Science 6/17/19 Split, Croatia “MICROFLUIDICS: Science, Technology and Applications in Forensics and Medicine”

Keynote Lecture – SSMSVT Conf. 7/2/19. Malmo, SWE. " RAPID MICROFLUIDICS: Forensics to Transplant Monitoring"

Plenary Lecture – Microscale Separations and Bioanalysis. 3/26/19 “DNA FORENSICS: Where Microfluidics, Engineering and Molecular Biology Intersect” – Corvallis, OR

Invited Lecture – Department of Chemistry, University of Toronto, January 2021 “What problem is your microfluidic toolkit solving?”

Invited Lecture. – Wayne State University, 4/5/22 “Exploiting biomicrofluidics to address the COVID pandemic: how fast is ‘rapid’?” Detroit, MI

Plenary Medal Award Lecture – Microscale Separations and Bioanalysis. 7/05/22 “Maturation of Microfluidics in an Era Where Real-world Problems Demand a Solution” – Liege, Belgium

Lifetime Achievement Award Lecture – AES Lifetime Achievement Award. 10/20/23 “High Resolution DNA Separations as the Backbone of a Portable Genotyping System – Reno, Nevada

EDITORIAL/ SCIENTIFIC DUTIES

editor

Editor-in-Chief - for the journal *Analytica Chimica Acta*

- impact factor 7.0; ranked by Thomson as #4 out of 32 Analytical Chemistry journals

editorial boards

- Editorial Advisory Board for *Journal of Brazilian Chemical Society*
- Editorial Board Member for *Journal of Biophysical and Biochemical Methods*
- Deputy Editor for *Electrophoresis* (past)
- Charter Editorial Board Member for *Lab on a Chip* (Royal Society of Chemistry journal) (past)
- Editorial Board Member for *BioTechniques*
- Editorial Board Member for *Journal of Capillary Electrophoresis* (past)
- Editorial Advisory Board Member for *Analytical Chemistry* (past)
- Editorial Board Member for *Electrophoresis*
- Editorial Board Member for *Micromachines*
- Guest Editor for issue *Electrophoresis* (Volume 18, 1997). on “Capillary Electrophoresis Clinical Sciences”.
- Guest Editor for issue *Electrophoresis* on “Capillary Electrophoresis in Biomedicine” (Volume 19, 2000).
- Guest Editor for issue *Electrophoresis* on “Miniaturization II” (Volume 22(2), 2001).
- Guest Editor for issue *Electrophoresis* on “Miniaturization III” (Volume 22(18), 2001).
- Guest Editor for issue *J. Chromatogr.* Honoring Stellan Hjerten

advisory boards

- University of Kansas Chemistry COBRE External Advisory Board

conference board positions

- Member of the *Chemical and Biological Microsystems Society* Board, the governing body for the *International Conference on Miniaturized Systems for Chemistry and Life Sciences* – 2006-2017
- Chairman of the Strategic Planning Board for the *International Microscale Separations and Bioanalysis* Conference - – 2008-2012

conference chairs

- **Founded** a new Gordon Conference; *GRC-Forensic DNA Analysis*
 - Chair, GRC – Inaugural Conference Forensic Analysis of Human DNA, June 2016 Waterville Valley, NH.
 - Second meeting June 2018, Sunday River, ME.

- Third meeting cancelled (COVID).
- Co-Chair, *GRC-Chemistry and Physics of Microfluidics*, June 26-July 1, 2013, Luca, Italy
- Chair, *29th International Conference on Microscale Bioseparations in the Life Sciences*, March 10-14, 2013, University of Virginia, Charlottesville, VA
- Co-Vice Chair, *GRC-Chemistry and Physics of Microfluidics*, June 26-July 1, 2011, Waterville Valley, NH
- Chair, *15th International Conference Miniaturized Systems for Chemistry and Life Sciences*, Oct. 2-6, 2011 Seattle, WA
- Co-Vice Chair, *GRC-Chemistry and Physics of Microfluidics*, June 28-July 3, 2009, Luca, Italy

symposia chairs

- Chair, Integrated Microfluidic Systems Symposia, Lab Automation, Jan 29, 2009, Palm Springs, CA

scientific program committees

- Program Committee for the Conference on Micro-Total Analysis Systems, Tokyo, Japan (3 year appointment).
- Scientific Committee for the Annual Frederick Conference on Capillary Electrophoresis, Frederick, MD (1997-present).
- Scientific Committee for the Latin American Conference on Capillary Electrophoresis, (1998–Brazil; 1999–Mexico; 2000–Uruguay; 2001–Chile).
- Scientific Committee for the IXth International Symposium on Luminescence Spectrometry in Biomedical and Environmental Analysis (Montpellier, France) –2001.
- Scientific Committee for the Xth International Symposium on Luminescence Spectrometry in Biomedical and Environmental Analysis (Granada, Spain) –2002
- Technical Program Committee, 10th International Conference on Miniaturized Systems for Chemistry and Life Sciences (MicroTAS)– 2006
- Technical Program Committee, 11th International Conference on Miniaturized Systems for Chemistry and Life Sciences (MicroTAS)– 2007
- Technical Program Committee, 12th International Conference on Miniaturized Systems for Chemistry and Life Sciences (MicroTAS)– 2008
- Technical Program Committee, 13th International Conference on Miniaturized Systems for Chemistry and Life Sciences (MicroTAS) – 2009
- Technical Program Committee, 14th International Conference on Miniaturized Systems for Chemistry and Life Sciences (MicroTAS) – 2010
- Technical Program Committee, 15th International Conference on Miniaturized Systems for Chemistry and Life Sciences (MicroTAS) – 2011
- Technical Program Committee, 16th International Conference on Miniaturized Systems for Chemistry and Life Sciences (MicroTAS) – 2012
- Strategic Planning Committee, 28th International Symposium on Microscale Bioseparations, Geneva, SW – 2012
- Scientific Advisory Committee, 28th International Symposium on Microscale Bioseparations, Shanghai, China (MSB-2012 Shanghai) – 2012
- Strategic Planning Committee, 29th International Symposium on Microscale Bioseparations, Charlottesville, VA (MSB-2013) – 2013

ENTREPRENEURIAL ACTIVITIES

start-up companies

1. MicroLab Diagnostics. 2008.
2. TeGrex Technologies. 2014.
3. MicroGEM International, 2015.

disclosures

1. A new method for pumping fluids through microfabricated devices. *Status* – full patent filed/abandoned.

2. A method for chemical-induction of sample stacking neutral compounds by micellar electrokinetic chromatography. *Status – patent filed.*
3. Microchannel encapsulated sol-gel for EOF pressure driven pumping on microchips. *Status –patent filed/abandoned*
4. Fluorescence detection of proteins on microchips without pre- or postcolumn labeling. *Status –patent filed (UVA).*
5. Electrophoresis-driven lithography for nanoscale features on planar or curved substrates. *Status – provisional patent filed.*
6. Spinning microchip design for SNP detection using quantum dots. *Status – provisional patent filed.*
7. Semi-reflective coatings in microdevices for measuring distance optically. *Status –provisional patent filed.*
8. Electrostatic actuation for management of flow in micro total analysis systems. *Status –provisional patent filed.*
9. Isolation of sperm cells from other biological material using microfabricated devices and related method thereof. *Status – provisional patent filed.*
10. Method and system for enzymatic digestion of cellulose for sperm elution. *Status –provisional patent filed.*
11. Enzymatic digestion of substrates for recovery of forensic DNA evidence. *Status –provisional patent filed.*
12. Electrophoretic elution of DNA from silica. *Status –provisional patent filed.*
13. Method and system for sol-gel/chitosan coated silica for one-tube cell lysis, DNA extraction and PCR. *Status - patent filed.*
14. Creating superhydrophobic surfaces using laser ablation. *Status – patent filed.*
15. Method and apparatus for combined ultrasound-mediated microparticle trapping and ultrasound-mediated heating for polymerase chain reaction. *Status – filed.*
16. Analysis technique for cell images associated with bodily fluids. *Status – filed.*
17. Method for achieving centrifugally driven vertical flow with immunocapture on a centrifugal microfluidic device. *Status – filed.*
18. Method and apparatus for enzymatic DNA liberation. *Status – filed.*
19. Method and apparatus for multiplexed STR-based PCR on Polyethylene Terephthalate Toner chip. *Status – filed.*
20. Cost Effective Polyester-Toner Microdevices with Cell Phone Detection for Field-Test Colorimetric Reactions. *Status – filed.*
21. DNA detection via Product-Inhibited Bead Aggregation (PIBA). *Status – filed.*
22. DNA Lysis and Extraction on a Polyethylene Terephthalate (Pe) Rotationally-Driven Microdevice. *Status – filed.*
23. A cell phone detection mechanism for analyzing fluid samples. *Status – filed.*
24. A device for analysis of body fluid identification panel using High Affinity Aggregation. *Status – filed.*
25. Sensitive Bead Detection of Biotin-Labeled Amplicons via High Affinity Aggregation. *Status – filed.*
26. Integrated DNA Lysis and Purification on a Rotationally-driven Microdevice. *Status – filed.*
27. Microfluidic Device for Bilirubin Quantitation. *Status – filed.*
28. Centrifugal Microfluidic Device with On-Board Reagents and Smartphone Colorimetric Detection for Explosives Identification. *Status – filed.*
29. Automated Colorimetric Image Analysis. *Status – filed.*
30. Microdevice for differential separation, purification and amplification of forensic samples. *Status – filed.*
31. The Faster LL-30 DNA Profiling System. *Status – filed.*
32. Storage of Highly Corrosive Reagents on a Hybrid Polymeric/Glass Microfiber Microfluidic Device. *Status – filed.*
33. Microfluidic Device for the Identification of Biological Sex by Analysis of Fingermarks. *Status – filed.*
34. Development and Automation of a Swab In-DNA Out Platform Using Dynamic Solid Phase Extraction (SPE). *Status – filed.*
35. Diagnostic Assay for On-Site Detection of *Bordetella pertussis*. *Status – filed.*
36. Centrifugal microfluidic disc for automated nanoliter volume assay optimization. *Status – filed.*
37. Mainspring Microfluidics. *Status – filed.*
38. Microfluidic System and Method for DNA Methylation Sample Preparation. *Status – filed.*

patents filed

- | | | |
|-----|------------|---|
| 1. | 63/106,660 | Storage of Highly Corrosive Reagents on a Hybrid Polymeric/ Glass Microfiber Microfluidic Device. |
| 2. | 10,656,146 | Detection of polymeric analytes. |
| 3. | 10,563,253 | Cartridge interface module. |
| 4. | 9,988,676 | Microfluidic cartridge. |
| 5. | 9,987,576 | Frequency-based filtering of mechanical actuation using fluidic device. |
| 6. | 9,732,557 | Removable ladder wheels. |
| 7. | 9,656,261 | DNA analyzer. |
| 8. | 9,649,631 | Multiple-sample microfluidic chip for DNA analysis. |
| 9. | 9,630,182 | Non-contact infrared thermocycling. |
| 10. | 9,322,054 | Microfluidic cartridge. |
| 11. | 9,067,207 | Optical approach for microfluidic DNA electrophoresis detection. |
| 12. | 9,050,596 | Passive components for micro-fluidic flow profile shaping and related method thereof. |
| 13. | 9,044,735 | DNA extraction using a photo-polymerized monolith in a capillary. |
| 14. | 8,961,764 | Micro fluidic optic design. |
| 15. | 8,916,375 | Integrated microfluidic analysis systems. |

16. 8,403,294 Electro-actuation for management of flow in micro-total analysis systems (μ TAS) and related method.
17. 8,343,755 Microdevices for chemical sensing and chemical actuation.
18. 8,220,493 Passive components for micro-fluidic flow profile shaping and related method thereof.
19. 8,056,881 Electrostatic actuation for management of flow in micro-total analysis systems & related method.
20. 7,815,802 Grafted photo-polymerized monolithic column.
21. 7,534,623 Apparatus and method for the purification of nucleic acids.
22. 7,381,471 Hybrid polymers for functional tuning of microfluidic device surfaces.
23. 7,223,325 Method for orthogonal analyte stacking/injection systems in electrophoresis.
24. 6,569,305 Method for injection and stacking of analytes in high-conductivity samples.
25. 6,531,344 High frequency gallium arsenide MMIC die coating method.
26. 6,413,766 Rapid thermocycling for sample analysis.
27. 6,246,046 Method and apparatus for electronically controlled scanning of micro-area devices.
28. 6,210,882 Rapid thermocycling for sample analysis.
29. 5,993,626 Capillary electrophoresis of transferrin glycoforms.
30. 5,989,198 Use of capillary electrophoresis to determine glomerular filtration rate using iothalamate.
31. 5,770,029 Integrated electrophoretic microdevices.
32. 63/106,660 Storage of Highly Corrosive Reagents on a Hybrid Polymeric/ Glass Microfiber Microfluidic Device.

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1. 20200023366 Microdevice for differential separation, purification and amplification of forensic samples.
2. 20200002745 Cartridge interface module.
3. 20190275518 Devices, systems, and methods for detecting substances.
4. 20190054468 Devices, systems and methods for sample detection.
5. 20180313765 Systems, devices and methods for analyzing and identifying substances.
6. 20180304253 Devices and methods for extraction, separation and thermocycling.
7. 20150314223 Frequency-based filtering of mechanical actuation using fluidic device.
8. 20150284775 Microfluidic cartridge.
9. 20150204139 Removable ladder wheels.
10. 20150151302 Non-contact infrared thermocycling.
11. 20150093838 Microfluidic valve systems.
12. 20140295441 Cartridge interface module.
13. 20130217026 Microfluidic cartridge.
14. 20130203045 Method for detecting nucleic acids based on aggregate formation.
15. 20130084565 Versatile, visible method for detecting polymeric analytes.
16. 20130004956 DNA analyzer.
17. 20120222747 Passive components for micro-fluidic flow profile shaping and related method thereof.
18. 20120149587 Method for detecting nucleated cells.
19. 20120056116 Electrostatic actuation for management of flow in micro-TAS and related method thereof.
20. 20110229898 DNA analyzer.
21. 20110229897 Optical approach for microfluidic DNA electrophoresis detection.
22. 20110223605 Multiple-sample microfluidic chip for DNA analysis.
23. 20110086181 DNA extraction using a photo-polymerized monolith in a capillary.
24. 20110070660 Detection of polymeric analytes.
25. 20110070578 DNA analyzer.
26. 20110065101 Multiple-sample microfluidic chip for DNA analysis.
27. 20110033922 Microchip-based acoustic trapping or capture of cells for forensic analysis and related method thereof.
28. 20100233792 Microdevices for chemical sensing and chemical actuation.
29. 20090217993 Passive components for micro-fluidic flow profile shaping and related method thereof.
30. 20090215124 Nucleic acid isolation methods and materials and devices thereof.
31. 20090170092 Integrated microfluidic analysis systems.
32. 20090014388 Grafted photo-polymerized monolithic column.
33. 20080277387 Use of microwaves for thermal and non-thermal applications in micro and nanoscale devices.
34. 20080193961 Localized control of thermal properties on microdevices and applications thereof.
35. 20080179555 Electrostatic actuation for management of flow in micro-TAS systems and related method thereof.
36. 20060084185 Apparatus and method for the purification of nucleic acids.
37. 20060057402 Hybrid polymers for functional tuning of microfluidic device surfaces.
38. 20050287661 Methods and systems for multiplexing IR-mediated heating on a microchip.
39. 20040131504 Remote temperature sensing of small volume and related apparatus thereof.

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40. 20040035703 Method for orthogonal analyte stacking/injection systems in electrophoresis.
 41. 20030201179 Method for injection and stacking of analytes in high-conductivity samples.
 42. 20010029036 Rapid thermocycling for sample analysis.