Fourteenth Annual Frederick Conference on Capillary Electrophoresis/Proteomics

November 3-4, 2003
Conference Center, Building 549
NCI-Frederick

Program

Monday November 3, 2003

9:00 – 9:05	Welcoming Remarks
Session I:	*Chairperson: Dr. Haleem Issaq, Laboratory of Proteomics and Analytical Technologies, SAIC-Frederick, Inc., NCI-Frederick*
9:05 – 9:35 am	Prediction of Peptide Maps in MEKC *Dr. Morteza Khaledi, Department of Chemistry, North Carolina State University*
9:35 – 10:00 am	Rapid and Effective Immobilization of Trypsin On or Without a Solid Support for Protein Digestion and CE, HPLC or MALDI-TOF Peptide Mapping *Dr. Karen Waldron, Department of Chemistry, University of Montreal*
10:00 – 10:30 am	Analytical Biotechnology Towards Comprehensive and Ultrasensitive Proteomics *Dr. Cheng Lee, Department of Chemistry and Biochemistry, University of Maryland*
10:30 – 11:00 am	*Coffee Break*
Session II:	*Chairperson: Dr. Timothy Veenstra, Laboratory of Proteomics and Analytical Technologies, SAIC-Frederick, Inc., NCI-Frederick*
11:00 – 11:30 am	Signal Transduction Profiling and Phosphoproteomics Using Reverse Phase Protein Microarrays: Clinical Applications *Dr. Emanuel Petricoin, NCI-FDA*
11:30 – 11:55 noon	Chip-Based Electrospray Mass Spectrometry Applied to Large and Small Molecules *Dr. Jack Henion, Advion Biosciences, Inc.*
11:55– 12:15	New Surface Enhanced Neat Desorption SELDI Protein Biochip Arrays for Evaluating the Low Molecular Weight Proteome of Nasopharyngeal Swab Samples of SARS Patients *Mr. Naotaka Kitagawa, Ciphergen Biosystems, Inc.*
12:15– 12:40 pm	Developments in the Characterization of the Human Serum Proteome *Dr.* Timothy Veenstra, *Laboratory of Proteomics and Analytical Technologies, SAIC-Frederick, Inc., NCI-Frederick*
12:40– 1:45 pm	*Lunch*

1:45 – 3:15 pm **Poster Session I**

Session III: Young Scientists Presentations
Chairperson: Jocelyn McKeon, Department of Chemistry, West Virginia University

3:15 – 3:30 pm MEKC-EC Identification and Analysis of Chronic Tolerance Associated Biogenic Amines in *Drosophila melanogaster*
Paula Ream Powell, Department of Chemistry, Pennsylvania State University

3:30 – 3:45 pm Non-Contact Temperature Control of Solutions in a Microchip: Enzymatic Digestion of DNA with Integrated Electrophoretic Separation
Christopher J. Easley, Department of Chemistry, University of Virginia

3:45 – 4:00 pm Improving Peptide Mobility Model Estimates by Understanding the Neighboring Residue Effect on Ionization
Obayda Debs, Department of Chemistry, University of Montreal

4:00 – 4:15 pm Partitioning of Charged Drugs into Lipid Bilayers Using Liposome Electrokinetic Chromatography (LEKC)
Jennifer M. Carrozzino, Department of Chemistry, North Carolina State University

4:15 – 4:30 pm Protein Fingerprinting of Single Mammalian Cells Using Capillary Electrophoresis with Laser Induced Fluorescence
James Kraly, Department of Chemistry, University of Washington

4:30 – 4:45 pm Capillary Electrophoresis-Laser Induced Fluorescence Detection for the Evaluation of In Vitro Antisense Oligonucleotide Delivery
Jocelyn McKeon, Department of Chemistry, West Virginia University

5:00 – 6:30 pm *Instrumentation Exhibit and Reception*

Tuesday, November 4, 2003

Session IV: Chairperson: *Dr. Joe Foley, Department of Chemistry, Drexel University*

9:00 - 9:30 am Sample Preparation-Integrated Electrophoretic Microchips for Genetic Analysis
Dr. James Landers, Department of Chemistry and Department of Pathology, University of Virginia

9:30 – 9:50 am Rapid Polarity Switching for Efficient In-Column Reactant Mixing with EMMA
Dr. Timothy Strein, Department of Chemistry, Bucknell University

9:50 – 10:10 am Bilayered Phospholipid Micelles and Capillary Electrophoresis: A New Additive for Electrokinetic Chromatography
Dr. Lisa Holland, Department of Chemistry, West Virginia University

10:10 – 10:35	Improved Solid-Phase Microextraction Device for Use in On-Line Immunoaffinity Capillary Electrophoresis *Dr. Norberto Guzman, Johnson and Johnson Pharmaceutical Research and Development*
10:35 – 11:10 am	*Coffee Break*
Session V:	Chairperson: *Dr. Karen Waldron, Department of Chemistry, University of Montreal*
11:10 – 11:40 am	Analysis of DNA Restriction Enzymes and RNA Self Cleavage with Dynamic Electrophoresis *Dr. Andrew Ewing, Department of Chemistry, Pennsylvania State University*
11:40 – 12:05 am	Biogel Phases for Capillary Electrophoresis *Dr. Linda McGown, Department of Chemistry, Duke University*
12:05 - 12:25 pm	Capillary Sieving Electrophoresis of High Molecular Weight SDS-Proteins *Dr. Robert Weinberger, CE Technologies*
12:25 – 12:45 pm	Recent Developments in Preparative-Scale pH-Biased Isoelectric Focusing Separations *Dr. Gyula Vigh, Department of Chemistry, Texas A&M University*
12:45 – 1:45 pm	*Lunch*
1:45 – 3:15 pm	**Poster Session II**
Session VI:	Chairperson: *Dr. George Janini, Laboratory of Proteomics and Analytical Technologies, SAIC-Frederick, Inc., NCI-Frederick*
3:15 - 3:45 pm	Proteomic Analysis of Lipid Rafts Using Liquid Chromatography/Tandem Mass Spectrometry *Dr. Josip Blonder, Laboratory of Proteomics and Analytical Technologies, SAIC-Frederick, Inc., NCI-Frederick*
3:45 – 4:05 pm	Specific Removal of Multiple High-Abundant Proteins from Human Serum with Polyclonal Antibody-Based Affinity Column *Dr. Kelly Zhang, Agilent Technologies*
4:05 – 4:30 pm	Equilibrium Ion Adsorption Model for Predicting Electroosmotic Flow in Fused Silica *Dr. Joe Foley, Department of Chemistry, Drexel University*
4:30 – 4:50 pm	Micellar Affinity Gradient Focusing *Dr. David Ross, Chemical Science and Technology Lab, NIST*
4:50 pm	*Closing Remarks*

Poster Session I: Monday, November 3, 1:45 – 3:15 pm (Rear of Cafeteria Adjacent to Conference Center)

1. Pressure Injection for Chromatographic and Electrophoretic Separations Mediated by Soft Valving: J.M. Karlinsey, Department of Chemistry, University of Virginia

2. Analysis of Tamm-Horsfall Protein by Capillary Electrophoresis: Z.K. Shihabi, Department of Pathology and Nephrology, Wake Forest University School of Medicine

3. Fenofibrate Analysis by Micellar Electrokinetic Capillary Chromatography: Zak K. Shihabi, Department of Pathology, Wake Forest University School of Medicine

4. Preliminary Studies in Cyclodextrin-Modified Microemulsion Electrokinetic Chromatography: Melissa D. Mertzman, Department of Chemistry, Drexel University

5. Macro-to-Micro Interfacing of a Swab Receptacle with a Microchip for Total Forensic DNA Analysis: Benjamin R. Schroeder, Department of Chemistry, University of Virginia

6. Electrophoretic Effects on Microchip Flow-based Methods for Purification of Nucleic Acids: Joan Bienvenue, Department of Chemistry, University of Virginia

7. Separations of Proteins Using a G-Quartet Forming DNA Oligonucleotide Stationary Phase in Open-Tubular Capillary Electrochromatography: Lawrence J. Dick, Department of Chemistry, Duke University

8. A Novel Approach for Interfacing Capillary Electrophoresis with Electrospray Ionization Mass Spectrometry: George M. Janini, Laboratory of Proteomics and Analytical Technologies, SAIC-Frederick, Inc., National Cancer Institute at Frederick

9. Separation of Small Peptides using G-Quartet DNA Stationary Phases in Open Tubular Capillary Electrochromatography: Trang U. Vo, Department of Chemistry, Duke University

10. Probing Affinity Interactions Between Proteins and G-quartet Stationary Phases: Adam Connor, Department of Chemistry, Duke University

11. Global Analysis and Targeted Phosphorylation Status of the Cortical Neuron Proteome: Li-Rong Yu, Laboratory of Proteomics and Analytical Technologies, SAIC-Frederick, Inc., National Cancer Institute at Frederick

12. Fractionation and Separation Tools for Proteomic Research: Haleem J. Issaq, Laboratory of Proteomics and Analytical Technologies, SAIC-Frederick, Inc., National Cancer Institute at Frederick

13. Single Neuron Analysis Using Capillary Electrophoresis with Laser Induced Fluorescence (CE-LIF): Md Abul Fazal, Department of Chemistry, University of Washington

14. The Application of Surface Enhanced Laser Desorption/Ionization in Detection and Characterization of Pathogens Classified as Potential Biological Weapons: Marielena McGuire, Ciphergen Biosystems, Inc.

15. Methods For On Chip Protein Identification: Ramy Moharram, Unit on Molecular Structures, LNT, NIMH, NIH, DHHS

16. Two-Dimensional Chromatographic Proteome Profiling of Human Plasma, Michael H. Simonian, Beckman Coulter, Inc.

17. Chronic Sinusitis Nasal Lavage Proteome: Casado Begona, Georgetown University and the University of Pavia, Italy

18. Application of HPLC and CE to the Analysis of Low-Aliphatic Aldehydes in Human Saliva: P. Iadarola, Dipartimento di Biochimica ""A. Castellani"", Università di Pavia

19. Application of MEKC to the Determination of 5''nucleotidase Activity in Human Red Blood Cells: S. Viglio, Dipartimento di Biochimica ""A. Castellani"", Università di Pavia

20. A Simple Method for Solution-Based Global and Targeted Membrane Proteomics: J. Blonder, Laboratory of Proteomics and Analytical Technologies, Mass Spectrometry Center, SAIC-Frederick Inc., National Cancer Institute at Frederick

21. Characterization of the Low Molecular Weight Human Serum Proteome: Thomas P. Conrads, Laboratory of Proteomics and Analytical Technologies, SAIC-Frederick, Inc., NCI-Frederick

22. The Application of Serum Proteomic Profiling in Search for Celecoxib-Modulated Targets and Response Predictors in Colon Cancer Prevention Trial: Zhen Xiao, Mass Spectrometry Center, Laboratory of Proteomics and Analytical Technologies, SAIC-Frederick Inc., National Cancer Institute at Frederick

Poster Session II: Tuesday, November 4, 1:45 – 3:15 pm (Rear of Cafeteria Adjacent to Conference Center)

23. Identification of Protein-protein Interactions within Human Serum: Ming Zhou, Laboratory of Proteomics and Analytical Technologies, Mass Spectrometry Center, SAIC-Frederick, National Cancer Institute at Frederick

24. Study of Effect of Fluorescence Labeling on Protein Isoelectric Point (pI) Using Whole-Column, Capillary Isoelectric Focusing (cIEF) with UV Absorption and Fluorescence Detectors: Jiaqi Wu, Convergent Bioscience Ltd.

25. Automated Capillary Sample Introduction with Microchip Electrophoresis for the Kinetic Analysis of Leadzyme Cleavage Reactions: Tracey Paxon, The Pennsylvania State University

26. Rapid CZE Separation of Anions and Cations Using a Dynamic Coating: William W.P. Chang, Target Discovery, Inc.

27. Separation of Inorganic Anions by Capillary Electrophoresis with Indirect Absorbance Detection for Soil Analysis: Effect of Organic Matter: Rabih Saad, Department of Chemistry, University of Montreal

28. Analysis of Amino Acids in Biological Samples by CE: Kongthong Thongkhao-On, Department of Chemistry, University of Illinois at Chicago

29. Determination of Nitrate and Nitrite in Rat Brain Perfusates by Capillary Electrophoresis: Leyi Gao, Department of Chemistry, University of Illinois at Chicago

30. Development of Capillary Eletrophoretic Methods for Separation of Drug Standards: Marie Eve Léonard Charette, Department of Chemistry, University of Montreal

31. A Guanosine Gel Phase for the Separation of DL-Propranolol Enantiomers in Capillary Electrophoresis: Victoria A. Dowling, Department of Chemistry, Duke University

32. Dual Opposite Injection Electrokinetic Chromatography: Nonionic Microemulsion Pseudostationary Phase and Novel Approach to Electrokinetic Sampling Bias: Marilyn X. Zhou, Chemistry Department, Drexel University

33. Analysis of Biogenic Amines in Brain Samples: Casandra Hernandez, Department of Chemistry, University of Virginia

34. Microchip Separation of Sperm and Epithelial Cells: An Alternative to Forensic Differential Extraction: Katie M. Horsman, Department of Chemistry, University of Virginia

35. Evaluation of Various Polymeric Sieving Matrices Using CE for the Diagnosis of Duchenne Muscular Dystrophy: Paul Mangold, Department of Chemistry, University of Virginia

36. Liposome Lysis Assay on CE-LIF: Emnet Yitbarek, Department of Chemistry, North Carolina State university

37. Colorimetric Detection of Solute Partitioning in Polydiacetylene Vesicles: Suzie Yeh, Department of Chemistry, North Carolina State University

38. Development of a Micelle – Modifier Selectivity Triangle in Micellar Electrokinetic Chromatography: Cexiong Fu, Department of Chemistry, North Carolina State University

39. Investigation of Solute Partitioning into Phospholipid Aggregates Using Electrokinetic Chromatography: Jason A. Barker, Department of Chemistry, North Carolina State University

40. Does the Oil Core in Microemulsions Play a Role in Microemulsion Electrokinetic Chromatography (MEEKC)?: Juan P. Mack, Department of Chemistry, North Carolina State University

41. IgG Purity Assay Using a New High Resolution SDS-Gel: Jeff D Chapman, Beckman Coulter Inc.

42. Separation of Bovine Milk Proteins by Capillary Electrochromatography: M-E. Beaudoin, Université de Montréal

43. Contactless Conductivity Based Photothermal Absorbance Detection: Stephen E. Johnston, Department of Chemistry, University of North Carolina, Chapel Hill

44. Ultra-High Voltage Capillary Electrophoresis: Wm. Hampton Henley, Department of Chemistry, University of North Carolina, Chapel Hill