

Christine L. Bunai

home address:

3637 Bridgewater Drive
Williamsburg, VA 23188
757-810-4993 (c)
tinabunai@hotmail.com

work address:

College of William and Mary
Department of Applied Science
Hornsby House, room 202
Williamsburg, VA 23185

Objective

To secure a scientific administrative position that will leverage my strong organizational and relationship-building skills, while utilizing over 20 years of scientific research experience including 12 years of prominent positions held in industry, non-profit and academic worlds.

Education and Training

Catholic University of America (CUA) , B.S. , Biology	1986-1990
University of Washington (UW), Ph.D. , Analytical Chemistry	1990-1995
University of Washington, Post-doctoral , Proteomics	1996-1998
<i>Business Transformation Education Series</i> , College of William and Mary's Mason School of Business and Williamsburg Chamber and Tourism Alliance	2009

Experience

Research Associate Professor, College of William and Mary (W&M) *Jan 2006- present*
Department of Applied Science

Conducting clinical proteomic research of cancers in collaboration with investigators at Eastern Virginia Medical School (EVMS) and INCOGEN (a bioinformatics company). Developed TOF-SIMS molecular imaging of human tissues and single cells at W&M's Applied Research Center.

Research Manager, Blackrock Energy Corporation *Oct 2009 – April 2010*

Managed research efforts of multi-institution collaborative research project – the Chesapeake Algae Project. Partners include: Statoil, College of William and Mary, Virginia Institute of Marine Science, University of Arkansas, Smithsonian Institution and University of Maryland, Blackrock Energy and HydroMentia, Inc. Lead weekly technical meetings; wrote progress reports; fundraising; promotion. Promotional video:

<http://www.wm.edu/news/multimedia/2010/ChAP/index.php>

Associate Director, Proteomics, The Institute for Genomic Research (TIGR)

Pathogen Functional Genome Resource Center (PFGRC)

Aug 2003 – Dec 2005

Directed the mass spectrometry-related research efforts within the Proteomics Lab of the PFGRC. Research focused on the profiling and characterization of pathogen bacterial proteomes including *Staphylococcus aureus* and *Yersinia pestis*.

Senior Director, Mass Spectrometry, Large Scale Biology Corporation (LSBC), Proteomics Division

May 2001 – July 2003

Managed the Mass Spectrometry Department and oversaw an automated production environment for high throughput protein identification and characterization. Responsible for project planning, balancing R & D with production. Supervised a staff of 11 people.

Senior Staff Scientist, LSBC

Aug 1999 - May 2001

Developed and implemented methods for automated high-throughput capillary LC-MS/MS characterization of proteins separated via proprietary 2-D gel electrophoresis. Maintained equipment and trained personnel. Developed MS/MS data analysis strategies and interacted with bioinformatics department for implementation of automated analysis of peptide fragmentation spectra.

Staff Scientist, Argonex Pharmaceuticals

May 1998- Aug 1999

Identified antigenic peptides from selected cancer tumor cells using immunology and analytical chemistry methods. Implemented/improved analytical chemistry and biological mass spectrometry capabilities for purposes of antigen discovery.

Postdoctoral Fellow, UW Department of Molecular Biotechnology

May 1996- May 1998

Adviser: John R. Yates III

Development of mass spectrometry instrumentation, particularly non-sheath electrospray (ES) interfaces for LC/MS and CE/MS. Development of nanospray-LC techniques for analysis of complex biological mixtures. Developed method for high amino acid sequence coverage of proteins to identify SNPs.

Graduate student, UW Department of Chemistry

Sept 1990-Dec 1995

Adviser: Frantisek Turecek

Thesis: "Studies of Transition Metal Complexes by Electrospray-Mass Spectrometry"

Publications

34 articles in peer-reviewed scientific journals (*previous last name was Gatlin*):

34. D. I. Malyarenko, M. Tracy, W. E. Cooke, **C. L. Bunai**, D. M. Manos, "Automated assignment of ionization states in broad-mass matrix-assisted laser desorption/ionization spectra of protein mixtures " *Rapid Comm. Mass Spectrom* **2010**, *24*, 1-9.

31. **C. L. Gatlin-Bunai**, L. Cazares, W. E. Cooke, O. J. Semmes, D. I. Malyarenko, "Optimization of MALDI-TOF MS detection for enhanced sensitivity of affinity-captured proteins spanning a 100 kDa mass range", *J. Proteome Research* **2007**, *6*, 4517-4524.

28. **C. L. Gatlin**, R. Pieper, S.-T. Huang, E. Mongodin, E. Gebregeorgis, P. P. Parmar, D. J. Clark, H. Alami, L. Papazisi, R. D. Fleischmann, S. R. Gill, S. N. Peterson, "Proteomic Profiling of Cell Envelope-Associated Proteins from *Staphylococcus aureus*", *Proteomics*, **2006**, *6*, 1530-1549.

27. K. T. Hogan, M. A. Coppola, **C. L. Gatlin**, L. W. Thompson, J. Shabanowitz, D. F. Hunt, V. H. Engelhard, M. M. Ross, C. L. Slingluff Jr., "Identification of Novel and Widely Expressed Cancer/Testis Gene Isoforms That Elicit Spontaneous Cytotoxic T-Lymphocyte Reactivity to Melanoma", *Cancer Research*, **2004**, 1157-1163.

26. N. L. Anderson, M. Polanski, R. Pieper, **T. Gatlin**, R. S. Tirumalai, T. P. Conrads, T. D. Veenstra, J. N. Adkins, J. G. Pounds, R. Fagan, A. Lobley, "The Human Plasma Proteome: A Non-Redundant List Developed by Combination of Four Separate Sources", *Mol. Cell. Proteomics*, Jan 12, **2004**, 1-74.

23. R. Pieper, **C. L. Gatlin**, A. J. Makusky, P. S. Russo, C. R. Schatz, S. S. Miller, Q. Su, A. McGrath, M. Estock, P. Parmar, M. Zhao, , S.-T. Huang, J. Zhou, F. Wang, R. Esquer-Blasco, N. L. Anderson, J. Taylor, S. Steiner, "The human serum proteome: display of nearly 3700 chromatographically separated protein spots on two-dimensional electrophoresis gels and identification of 325 distinct proteins", *Proteomics*, **2003**, *3*, 1345-1364.

21. R. Pieper, Q. Su, **C. L. Gatlin**, S.-T. Huang, N. L. Anderson, S. Steiner, "Multi-Component Immunoaffinity Subtraction Chromatography, An Innovative Step Towards A Comprehensive Survey Of The Human Plasma Proteome", *Proteomics*, **2003**, *3*, 422-432.

17. **C. L. Gatlin**, J. K. Eng, J. R. Yates III, S. T. Cross, J. C. Detter, "Automated identification of amino acid substitutions by HPLC/microspray tandem mass spectrometry with SEQUEST-SNP data analysis", *Anal. Chem.* **2000**, *72*, 757-763.
14. **C. L. Gatlin**, G. R. Kleeman, L. G. Hays, A. J. Link, J. R. Yates III, "Protein identification at the low femtomole level from silver-stained gels using a new fritless electrospray interface for liquid chromatography-microspray and nanospray mass spectrometry," *Anal. Chem.* **1998**, *263*, 93-101.
12. F. Turecek and **C. L. Gatlin**, "Electrospray ionization of inorganic and organometallic complexes" in *Electrospray Ionization Mass Spectrometry*; R. B. Cole, ed.; Wiley-Interscience: NY, **1997**; pp.527-570.
4. **C. L. Gatlin**, F. Turecek, T. Vaisar, "Cu(II) amino acids in the gas phase," *J. Am. Chem. Soc.* **1995**, *117*, 3637-3638.
2. **C. L. Gatlin**, F. Turecek, "Acidity determination in droplets formed by electrospraying methanol-water solutions," *Anal. Chem.* **1994**, *66*, 712-718.
1. M. Cha, **C. L. Gatlin**, S. C. Critchlow, J. A. Kovacs, "Probing the influence of local coordination environment in ligand binding in nickel hydrogenase model complexes," *Inorg. Chem.*, **1993**, *32*, 5868-5876.

Selected Presentations (from 20+)

- C. L. Bunai**, K. M. White, C. E. Wilkins, R. R. Drake, M. B. Tracy, D. I. Malyarenko "Enhancement in MALDI Profiling of the Low Molecular Weight Human Serum Proteome using Ultrafiltration", American Society of Mass Spectrometry Conference, Salt Lake City, UT (2010), poster.
- C. L. Bunai**, "Mass Spectrometry-Based Proteomics", College of William and Mary, Biology Department Seminar Series, Williamsburg, VA, (2007), invited speaker.
- T. Gatlin**, "Profiling the cell surface proteins of *Staphylococcus aureus*", ThermoFinnigan Proteomics Seminar Series, Bethesda, MD; Toronto and Montreal, CAN (2005), invited speaker.
- T. Gatlin**, "Pharmacoproteomics to Profile Mechanism of Drug Action and Toxicity", IBC's 8th Annual Proteomics Conference, San Diego (2003), invited speaker.
- T. Gatlin**, "A Highly Automated Proteomics Facility: Merging 2D gel, Robotic Sample Prep, MS and Bioinformatics Technologies for Protein Identification and Characterization," National Cancer Institute, Frederick, MD (2002), invited speaker. (<http://msig.ncifcrf.gov/msig-archives.html> click on 2/12/02).
- T. Gatlin**, S. Steiner, "Pharmacoproteomics: to Profile Mechanisms of Efficacy and Toxicity," 15th Asilomar Conference on Mass Spectrometry, Pacific Grove, CA (1999), invited keynote speaker.
- C. L. Gatlin**, F. Turecek, D. B. Taylor, R. E. Synovec, "Determination of copper oxidation states in jet fuel by LC-ES/MS and extraction FIA-ES/MS," Center for Process Analytical Chemistry 20th Annual Sponsor Meeting, Bellevue, WA (1994), speaker.

Grants

Awarded two grants from the National Institute of Health (NIH) for cancer biomarker discovery (co-PI, 2006) and to study alcohol effects on the brain (PI, 2003).

Scientific Review Panel Member

Invited reviewer for 10+ NIH Special Emphasis Panels from 2003-2009. Institutes include: NCI, NCRR, NIDDK, NIAID, NIAAA. Grant types: RO1, R21, P01, S10, U24, P50.

References

Furnished upon request.