Curriculum Vitae

WANDA M. BODNAR, PH.D.

Department of Environmental Sciences and Engineering
University of North Carolina at Chapel Hill
162B Rosenau Hall, CB# 7431
Chapel Hill, NC 27599
(919) 843-0182
wanda_bodnar@unc.edu

EDUCATION

Ph.D. in Chemistry, University of Virginia, Charlottesville, VA, Aug. 20, 1993
Advisor: Dr. Donald F. Hunt, Professor of Chemistry and Pathology
Dissertation: "Peptide Sequence Analysis by Microcapillary HPLC Electrospray Ionization Tandem Mass Spectrometry"
Honors: Pratt Fellowship

B.A. in Chemistry, Middlebury College, Middlebury, VT, May 28, 1989
Advisor: Dr. Sunhee Choi, John D. McCullough Professor of Chemistry
Honors Thesis: "The Effect of Cholesterol on Calcium Bound Phospholipids: A Spectroscopic and Calorimetric Study"
Honors: High Honors in Chemistry and Biochemistry, Magna cum Laude, Phi Beta Kappa

PROFESSIONAL EXPERIENCE

Research Assistant Professor Oct. 2009 -present
Director, UNC Biomarker Mass Spectrometry Core Facility
University of North Carolina at Chapel Hill
Department of Environmental Sciences and Engineering
UNC Center for Environmental Health and Susceptibility
Gillings School of Global Public Health

Senior Research Scientist 1 2007-2009
Inspire Pharmaceuticals, Inc., Durham, NC
Drug Disposition Analysis, Preclinical Drug Evaluation

Investigator 2002-2006
GlaxoSmithKline, Inc., RTP, NC
Disease and Biomarker Proteomics Department, Gene Cloning and Proteomics

Research Investigator I 2000-2002
GlaxoSmithKline, Inc., RTP, NC
Metabolic & Viral Diseases DMPK; Bioanalysis & Drug Metabolism

Senior Scientist 1998-2000
Glaxo Wellcome, Inc., RTP, NC
Bioanalysis and Drug Metabolism

Senior Scientist 1995-1998
Glaxo Wellcome, Inc., RTP, NC
Diversity Sciences Combinatorial Chemistry

Senior Scientist 1993-1995
Glaxo, Inc., RTP, NC
Bioanalytical and Structural Chemistry

Research Assistant 1990-1993
University of Virginia, Charlottesville, VA
Department of Chemistry, Professor Donald. F. Hunt Lab

Teaching Assistant 1989-1990
University of Virginia, Charlottesville, VA
Department of Chemistry Introductory Chemistry Laboratory

Teaching Assistant 1988-1989
Middlebury College, Middlebury, VT
Department of Chemistry Advanced Instrumental Chemistry Laboratory

PROFESSIONAL DEVELOPMENT AND TRAINING

Mental Health First Aid USA Certification, National Council for Behavioral Health, 8-hour classroom course completed Feb. 2018

Good Clinical Practice training, NIH NIAID GCP Learning Center, 4 online modules completed Mar. 2017

Title IX Awareness and Violence Prevention for Faculty, UNC-CH online course completed Dec. 2014

Collaborative Institutional Training Initiative (CITI) certification for Human Subjects Research, 10 online modules completed Feb. 2014

Workplace Safety and OSHA Compliance, National Seminars Group workshop, Raleigh, NC, 6-hour course completed Dec. 2008

Elements of cGMP in Biomanufacturing Processes, Wake Technical Community College, Raleigh, NC. 15-hour course completed Dec. 2006

Applied Biosystems QSTAR Elite Operators Training, Framingham, MA. 2-day course completed Nov. 2007

PE Sciex API Mass Spectroscopy Training Course, Norwalk, CT. 2-day course completed Oct. 1995

Professional Development Courses, GlaxoSmithKline 1993-2006 (alphabetical):

Biochemistry and Chemistry for High Throughput Screening; Building a Respectful Workplace; Conflict Resolution; Data Integrity Fundamentals for Non-Regulated Areas of R&D; Drug Discovery and Development Simulation; Foundations of Leadership; Introduction to GLP; Introduction to Microsoft Project; Leading and Negotiating in the R&D Matrix; Managing for Performance and Managing Multiple Priorities; Molecule to Marketplace and Overview of Drug Development; Performing with Integrity; Standards for Collecting, Obtaining, or Using Human Biological Samples in Research

HONORS AND AWARDS

2001 GlaxoWellcome BioMet Rewards & Recognition Level II Award for Safety
2003 GSK Bronze Level Research Award for contribution to the Adrenoleukodystrophy study
2006 GSK Bronze Level Research Award for contribution to the Albugon project
2009 Inspire Pharmaceuticals Sir Richard Evans Team Award for Azasite® clinical research

PROFESSIONAL AFFILIATIONS

Member of the American Society for Mass Spectrometry, 1992-present
Member of the American Chemical Society, 1994-2015
Member of the Triangle Area Mass Spectrometry Discussion Group, 2000-present

PUBLICATIONS (41)

"Tracing the Biotransformation of Polycyclic Aromatic Hydrocarbons in Contaminated Soil Using Stable Isotope-Assisted Metabolomics." Z. Tian, J. Vila, M. Yu, **W. Bodnar**, and M.D. Aitken. *Environ Sci Technol Lett*. 2018; 5(2):103−109. DOI: 10.1021/acs.estlett.7b00554.

"Tissue- and strain-specific effects of a genotoxic carcinogen 1,3-butadiene on chromatin and transcription." J.W. Israel, G.A. Chappell, J.M. Simon, S. Pott, A. Safi, L. Lewis, P. Cotney, H.S. Boulos, **W. Bodnar**, J.D. Lieb, G.E. Crawford, T.S. Furey, I. Rusyn. *Mamm Genome*. 2018 Feb; 29(1-2):153-167. PMID: 29429127.

"Trisaminohexyl isocyanurate, a urinary biomarker of HDI isocyanurate exposure." Z. Robbins, **W. Bodnar**, Z. Zhang, A. Gold, L.A. Nylander-French. *J Chromatogr B*. 2018 Feb 15; 1076:117-129. PMID: 29406025.

"Diversity and Abundance of High-Molecular-Weight Azaarenes in PAH-Contaminated Environmental Samples." Z. Tian, J. Vila, H. Wang, **W. Bodnar**, M.D. Aitken. *Environ Sci Technol*. 2017 Dec 19;51(24):14047-14054. PMID: 29160699.

"Toxic metals in amniotic fluid and altered gene expression in cell-free fetal RNA." L. Smeester, E.M. Martin, P. Cable, **W. Bodnar**, K. Boggess, N.L. Vora, R.C. Fry. *Prenat Diagn*. 2017 Dec;37(13):1364-1366. PMCID: PMC5766286.

"Variation in DNA-Damage Responses to an Inhalational Carcinogen (1,3-Butadiene) in Relation to Strain-Specific Differences in Chromatin Accessibility and Gene Transcription Profiles in C57BL/6J and CAST/EiJ Mice." G.A. Chappell, J.W. Israel, J.M. Simon, S. Pott, A. Safi, K. Eklund, K.G. Sexton, **W. Bodnar**, J.D. Lieb, G.E. Crawford, I. Rusyn, T.S. Furey, *Environ Health Perspect*, 2017 Oct; 125(10). PMID: 29038090.

"Editor's Highlight: Collaborative Cross mouse population enables refinements to characterization of the variability in toxicokinetics of trichloroethylene and provides genetic evidence for the role of PPAR pathway in its oxidative metabolism." A. Venkatratnam, S. Furuya, O. Kosyk, A. Gold, **W. Bodnar**, K. Konganti, D.W. Threadgill, K.M. Gillespie, D.L. Aylor, F.A. Wright, W.A. Chiu, I. Rusyn, *Toxicol Sci*. 2017 Jul 1;158(1):48-62. PMID: 28369613.

"Measurement of endogenous versus exogenous formaldehyde-induced DNA-protein crosslinks in animal tissues by stable isotope labeling and ultrasensitive mass spectrometry." Y. Lai, R. Yu, H.J. Hartwell, B.C. Moeller, **W.M. Bodnar,** J.A. Swenberg, *Cancer Res*, 2016 May 1; 76(9), 2652-61. PMID: 26984759. PMCID: PMC4879886.

"Pharmaceutical occurrence in groundwater and surface waters in forests land-applied with municipal wastewater." A.D. McEachran, D. Shea, **W. Bodnar,** E.G. Nichols, *Environ Toxicol Chem*, 2016 Apr; 35(4), 898-905. PMID: 26297815. PMCID: PMC4976290.

"Xenobiotic Metabolism in Mice Lacking the UDP-Glucuronosyltransferase 2 Family." M.J. Fay, M.T. Nguyen, J.N. Snouwaert, R. Dye, D.J. Grant, **W.M. Bodnar,** B.H. Koller, *Drug Metab Dispos,* 2015 Dec; 43(12),1838-46. PMID: 26354949. PMCID: PMC4658492.

"The Contribution of Peroxisome Proliferator-Activated Receptor Alpha to the Relationship Between Toxicokinetics and Toxicodynamics of Trichloroethylene." H.S. Yoo, J.A. Cichocki, S. Kim, A. Venkatratnam, Y. Iwata, O. Kosyk, **W. Bodnar,** S. Sweet, A. Knap, T. Wade, J. Campbell, H.J. Clewell, S.B. Melnyk, W.A. Chiu, I. Rusyn, *Toxicol Sci, 2015;* 147(2), 339-49. PMID: 26136231. PMCID: PMC4598794.

"Placental Cadmium Levels Are Associated with Increased Preeclampsia Risk." J.E. Laine, P. Ray, **W. Bodnar,** P.H. Cable, K. Boggess, S. Offenbacher, R.C. Fry, *PloS one*, 2015 Sep 30; 10(9), e0139341. PMID: 26422011. PMCID: PMC4589375.

"Formation, Accumulation, and Hydrolysis of Endogenous and Exogenous Formaldehyde-Induced DNA Damage." R. Yu, Y. Lai, H.J. Hartwell, B.C. Moeller, M. Doyle-Eisele, D. Kracko, **W.M. Bodnar, T.B.** Starr, J.A. Swenberg, *Toxicol Sci*, 2015 Apr 21; 146(1), 170-182. PMID: 25904104. PMCID: PMC4476463.

"Comparative analysis of the relationship between trichloroethylene metabolism and tissue-specific toxicity among inbred mouse strains: kidney effects." H.S. Yoo, B.U. Bradford, O. Kosyk, T. Uehara, S. Shymonyak, L.B. Collins, **W.M. Bodnar**, L.M. Ball, A. Gold, I. Rusyn, *J Toxicol Environ Health A*, 2015; 78(1):32-49. PMID: 25424545. PMCID: PMC4281933.

"Comparative analysis of the relationship between trichloroethylene metabolism and tissue-specific toxicity among inbred mouse strains: liver effects." H.S. Yoo, B.U. Bradford, O. Kosyk, S. Shymonyak, T. Uehara, L.B. Collins, **W.M. Bodnar**, L.M. Ball, A. Gold, I. Rusyn, *J Toxicol Environ Health A*, 2015; 78(1): 15-31. PMID: 25424544. PMCID: PMC4281929.

"Epigenetic Events Determine Tissue-Specific Toxicity of Inhalational Exposure to the Genotoxic Chemical 1,3-Butadiene in Male C57BL/6J Mice." G. Chappell, T. Kobets, B. O'Brien, N. Tretyakova, D. Sangaraju, O. Kosyk, K.G. Sexton, **W. Bodnar**, I.P. Pogribny, I. Rusyn, *Toxicol Sci*, 2014 Dec; 142(2): 375-84. PMID: 25237060. PMCID: PMC4250847.

"The endogenous exposome." Jun Nakamura, Esra Mutlu, Vyom Sharma, Leonard Collins, **Wanda Bodnar,** Rui Yu, Yongquan Lai, Benjamin Moeller, Kun Lu, James Swenberg, *DNA Repair (Amst)*. 2014 Jul; 19: 3-13. Epub 2014 Apr 24. PMID: 24767943. PMCID: PMC4097170.

"Gut microbiome phenotypes driven by host genetics affect arsenic metabolism." K. Lu, R. Mahbub, P.H. Cable, H. Ru, N.M. Parry, **W.M. Bodnar**, J.S. Wishnok, M. Styblo, J.A. Swenberg, J.G. Fox, S.R. Tannenbaum, *Chem Res Toxicol,* 2014 Feb 17; 27(2):172-4. Epub 2014 Feb 3. PMID: 24490651. PMCID: PMC3997221.

"Gut microbiome perturbations induced by bacterial infection affect arsenic biotransformation." K. Lu, P.H. Cable, R.P. Abo, P, H. Ru, M.E. Graffam, K.A. Schlieper, N.M. Parry, S. Levine, **W.M. Bodnar**, J.S. Wishnok, M. Styblo, J.A. Swenberg, J.G. Fox, S.R. Tannenbaum, *Chem Res Toxicol*, 2013 Dec 16; 26(12):1893-903. Epub 2013 Nov 18. PMID: 24134150. PMCID: PMC3974266.

"Comparative oxidation state specific analysis of arsenic species by high-performance liquid chromatography-inductively coupled plasma-mass spectrometry and hydride generation-cryotrapping-atomic absorption spectrometry," Jenna M. Currier, R. Jesse Saunders, Lan Ding, **Wanda Bodnar**, Peter Cable, Tomáš Matoušek, John T. Creede, Miroslav Stýblo, *J Anal At Spectrom*, 2013; 28(6): 843-852. Epub 2013 Mar 27. PMID: 23687401. PMCID: PMC3655785.

"Biomarkers of Exposure and Effect in Human Lymphoblastoid TK6 Cells Following [13C2]-Acetaldehyde Exposure," Benjamin C. Moeller, Leslie Recio, Amanda Green, Wei Sun, Fred A. Wright, **Wanda M. Bodnar**, James A. Swenberg, *Toxicol Sci,* 2013; 133(1): 1-12. Epub 2013 Feb 19. PMID: 23425604. PMCID: PMC3627555.

"Methylated Trivalent Arsenicals are Potent Inhibitors of Glucose Stimulated Insulin Secretion by Murine Pancreatic Islets," C. Douillet, J. Currier, J. Saunders, **W.M. Bodnar**, T. Matoušek, M. Stýblo, *Toxicology and Appl Pharmacol*, 2013 Feb 15; 267(1): 11-15. Epub 2012 Dec 20. PMID: 23261974. PMCID: PMC3670188.

"Epigenetic mechanisms of mouse interstrain variability in genotoxicity of the environmental toxicant 1,3-butadiene," Igor Koturbash, Anne Scherhag, Jessica Sorrentino, Kenneth Sexton, **Wanda Bodnar**, James A. Swenberg, Frederick A. Beland, Fernando Pardo-Manuel deVillena, Ivan Rusyn, Igor P. Pogribny, *Toxicol Sci,* 2011 Aug; 122(2): 448–456. Epub 2011 May 20. PMID: 21602187. PMCID: PMC3155089.

"Epigenetic Alterations in Liver of C57BL/6J Mice after Short-Term Inhalational Exposure to 1,3-Butadiene," Igor Koturbash, Anne Scherhag, Jessica Sorrentino, Kenneth Sexton, **Wanda Bodnar**, Volodymyr Tryndyak, John R. Latendresse, James A. Swenberg, Frederick A. Beland, Igor P. Pogribny, Ivan Rusyn, *Environ Health Perspect,* 2011 May; 119(5): 635-640. Epub 2010Dec13. PMID: 21147608. PMCID: PMC3094413.

"Adiponectin Lowers Glucose Production by Increasing SOGA," Rachael B. Cowerd, Melissa M. Asmar, J. McKee Alderman, Elizabeth A. Alderman, Alaina L. Garland, Walker H. Busby, **Wanda M. Bodnar**, Ivan Rusyn, Benjamin D. Medoff, Roland Tisch, Elizabeth Mayer-Davis, James A. Swenberg, Steven H. Zeisel, Terry P. Combs, *Am J Pathol,* 2010; 177: 1936-1945. Epub 2010 Sep 2. Erratum in*: Am J Pathol* 2011 Mar; 178(3):1406. Cowerd, Rachael B [corrected to Cowherd, Rachael B]. PMID: 20813965. PMCID: PMC2947288.

"Indazoles: Regioselective Protection and Subsequent Amine Coupling Reactions," D. Slade, N. Pelz, **W. Bodnar**, J. Lampe, P. Watson, *J Org Chem*, 2009; 74: 6331-6334. PMID: 19618957.

"Proteomic identification and early validation of complement 1 inhibitor and pigment epithelium-derived factor: Two novel biomarkers of Alzheimer's disease in human plasma," P. Cutler, E. Akuffo, **W. Bodnar**, D. Briggs, J. Davis, C. Debouck, S. Fox, R. Gibson, D. Gormely, J. Holbrook, J. Hunter, E. Kinsey, R. Prinjha, J. Richardson, A. Roses, M. Smith, N. Tsokanas, D. Wille, W. Wu, J. Yates, I. Gloger, *Proteomics-Clinical Applications,* 2008; 2(4): 467-477. PMID: 21136851.

"Exploiting the Complementary Nature of MALDI/MS/MS and LC/ESI/MS/MS for Increased Proteome Coverage," **W.M. Bodnar**, R.K. Blackburn, J.M. Krise, M.A. Moseley, *J Am Soc Mass Spec*, 2003;14(9): 971-979. PMID: 12954165.

"HLA class I binding motifs derived from random peptide libraries differ at the COOH terminus from those of eluted peptides," M.P. Davenport, K.J. Smith, D. Barouch, S.W. Reid, **W.M. Bodnar**, A.C. Willis, D.F. Hunt, A.V. Hill, *J Exp. Med*, 1997 Jan 20; 185(2): 367-71. PMID: 9016886. PMCID: PMC2196123.

"Isotope or Mass Encoding of Combinatorial Libraries," H.M. Geysen, C.D. Wagner, **W.M. Bodnar**, C.J. Markworth, G.J. Parke, F.J. Schoenen, D.S. Wagner, D. Kinder, *Chem & Biol*, 1996; 3: 679-688. PMID: 8807902

"Agouti Structure and Function: Characterization of a Potent α-Melanocyte Stimulating Hormone Receptor Antagonist," D.H. Willard, **W. Bodnar**, C. Harris, L. Kiefer, J. Nichols, S. Blanchard, C. Hoffman, M. Moyer, W. Burkhart, J. Weiel, M. Luther, W. Wilkison, W. Roque, *Biochemistry*, 1995; 34(38): 12341-12346. PMID: 7547977.

"The Loss of Female Sex Pheromone after Mating in the Corn Earworm Moth, Helicoverpa zea: Identification of a Male Pheromonstatic Peptide," T.G. Kingan, **W.M. Bodnar**, A.K. Raina, J. Shabanowitz, D.F. Hunt, *Proc Natl Acad Sci, USA,* 1995; 92: 5082-5086. PMID: 7761452.

"Direct Collection Onto Zitex and PVDF for Edman Sequencing: Elimination of Polybrene," W.A. Burkhart,
M.B. Moyer, **W.M. Bodnar**, A.M. Everson, V.G. Valladares, J.M. Bailey, *Techniques in Protein Chemistry VI*, J.W. Crabb, editor, Academic Press, San Diego, CA, 1995; pp. 169-176. ISBN: 0-12-19471-0.

"Definition of Specific Peptide Motifs for Four Major HLA-A Alleles," R.T. Kubo, A. Sette, H.M. Grey, E. Appella, K. Sakaguchi, N-Z. Zhu, D. Arnott, N. Sherman, J. Shabanowitz, H. Michel, **W.M. Bodnar**, T.A. Davis, D.F. Hunt, *J Immunol*, 1994; 152: 3913-3924. PMID: 8144960.

"Mass spectrometric analysis of peptides associated with the human class I MHC molecules HLA-A2.1 and HLA-B7 and identification of structural features that determine binding," V.H. Englehard, E. Appella, D.C. Benjamin, **W.M. Bodnar**, A.L. Cox, Y. Chen, R.A. Henderson, E.L. Huczko, H. Michel, K. Sakaguchi, J. Shabanowitz, N. Sevilir, C.L. Slingluff, D.F. Hunt, *Chem Immunol*, 1993; 57: 39-62 Review. PMID: 8260089.

"Sequence Analysis of Peptides Presented to the Immune System by Class I and Class II MHC Molecules," D.F. Hunt, J. Shabanowitz, H. Michel, A.L. Cox, T. Dickinson, T. Davis, **W. Bodnar**, R.A. Henderson, N. Sevilir, V.H. Englehard, K. Sakaguchi, E. Appella, H.M. Grey, A. Sette. *Methods in Protein Sequence Analysis,* Imahori K, and Sakiyama F, editors, Springer Science + Business Media, LLC, New York, NY, 1993. Chapter: Mass Spectrometry, pp.127-133. ISBN-10: 1489916059.

"Characteristics of Endogenous Peptides Eluted from the Class I MHC Molecule HLA-B7 Determined by Mass Spectrometry and Computer Modeling," E.L. Huczko, **W.M. Bodnar**, D. Benjamin, K. Sakaguchi, N.Z. Zhu, J. Shabanowitz, R.A. Henderson, E. Appella, D.F. Hunt, V.H. Engelhard, *J Immunol*, 1993; 151: 2572-2587. PMID: 8360479.

"Sequence analysis of peptides presented to the immune system by class I and class II MHC molecules," D.F. Hunt, J. Shabanowitz, H. Michel, A.L. Cox, T. Dickinson, T. Davis, **W. Bodnar**, R.A. Henderson, N. Sevilir, V.H. Englehard, K. Sakaguchi, E. Appella, H.M. Grey, A. Sette, *J Prot Chem*, 1992; 11(4): 377-378.

"Isolation and Identification of a New Diuretic Peptide from the Tobacco Hornworm, *Manduca Sexta*," M.B. Blackburn, T.G. Kingan, **W.M. Bodnar**, J. Shabanowitz, D.F. Hunt, T. Kempe, R.M. Wagner, A.K. Raina, M. E. Schnee, M.C. Ma, *BBRC*, 1991; 181(3): 927-932. PMID: 1764106.

"Infrared Spectroscopic Studies on the Phosphatidylserine Bilayer Interacting with Calcium Ion: Effect of Cholesterol," S. Choi, W. Ware, S.R. Lauterbach, **W.M. Phillips**, *Biochemistry*, 1991, 30, 8563-8568. PMID: 1888723.

"Kinetics of Pentaaminenitritocobalt (III) to Pentaaminenitrocobalt (III) Linkage Isomerization, Revisited," **W.M. Phillips**, S. Choi, and J. A. Larrabee, *J. Chem. Ed*., 1990, 67: 267-269. doi: 10.1021/ed067p267.

TEACHING AND INSTRUCTIONAL ACTIVITIES

Mentor, undergraduate project team, COMP523: Software Engineering Lab, UNC-CH Spring 2018.
Project title: *CollabSeek* (web-based research tool for identifying potential new collaborators)
Course Instructor: David Stotts

Co-organizer, UNC-CH Mass Spectrometry Seminar Series, Academic year 2017-2018.
Seminar presentation: Overview of UNC Biomarker Mass Spectrometry Core Facility, Sept. 2017.
Co-organizers: Brandie Ehrmann (Chemistry); Laura Herring (Proteomics)

Guest Lecturer ENVR 726: Instrumental Methods for the Chemical Analysis of Environmental Samples, UNC-CH Fall, 2013.
Title: "Inductively Coupled Plasma Mass Spectrometry: ICP-MS"
Course Instructor: Howard Weinberg

Guest Lecturer BMME 890/490: Special Topics in Biomedical Engineering, UNC-CH Fall, 2011.
Lecture 9 Title: "Overview of Mass Spectrometry – Application to Biomarker Analysis"
Lecture 10 Title: "Application of Qualitative and Quantitative LC/MS/MS in Support of Biomarker Discovery for Alzheimer's Disease"
Course Instructor: Jeffrey Macdonald

Speaker ENVR 400: Environmental Sciences & Engineering Dept. Seminar Series, UNC-CH Fall, 2011. Title: "Biomarker Mass Spectrometry- Pushing the Boundaries of Sensitivity and Selectivity"
Course Instructor: Howard Weinberg

SERVICE ON GRADUATE STUDENT COMMITTEES

Pengcheng Tu (Ph.D.) 2018 - present
Committee member. Department of Environmental Sciences and Engineering, UNC Chapel Hill
Focus: Effects of the black raspberry diet on the gut microbiome
Advisor and committee chair: Kun Lu

Tianqu Cui (Ph.D.) 2018 - present
Committee member. Department of Environmental Sciences and Engineering, UNC Chapel Hill
Focus: Multiphase and aqueous-phase chemistry of biomass burning emissions
Advisor and Committee Chair: Jason Surratt

Alma Beciragic (Ph.D.) 2016 - present
Committee member. Department of Environmental Sciences and Engineering, UNC Chapel Hill
Focus: Leachates and disinfection by-products of RO and NF membranes in water treatment
Advisor and committee chair: Howard S. Weinberg

Zachary Robbins (Ph.D.) 2012 - present
Committee member. Department of Environmental Sciences and Engineering, UNC Chapel Hill
Focus: Biomarkers of occupational exposure to isocyanurate
Advisor and committee chair: Leena Nylander-French

Sujey Carro (Ph.D.) 2010 - 2018
Committee member. Department of Environmental Sciences and Engineering, UNC Chapel Hill
Dissertation title: “Gaps in Butadiene Biomarkers of Exposure and Effect”
Advisor and committee chair: James A. Swenberg

Abhishek Venkatratnam (Ph.D.) 2013 – 2018
Committee member. Department of Environmental Sciences and Engineering, UNC Chapel Hill
Dissertation title: “Inter-individual Differences in Trichlorethylene Toxicokinetics and Toxicodynamics in Genetically-Diverse Mice”
Advisor and committee chair: Ivan Rusyn

Zhenyu Tian (Ph.D.) 2014 - 2017
Committee member. Department of Environmental Sciences and Engineering, UNC Chapel Hill
Dissertation title: “Non-Target Analysis of Bioremediated Soil”
Advisor and committee chair: Michael Aitken

Andrew McEachran (Ph.D.) 2014 - 2016
Committee member. Department: Forestry and Environmental Resources, NC-State University
Dissertation title: “Pharmaceutical and personal care product (PPCP) occurrence, distribution, and export at a forest-water reuse system”
Advisor and committee chair: Elizabeth G. Nichols

Grace Chapel (Ph.D.) 2014 – 2015
Committee member. Department of Environmental Sciences and Engineering, UNC Chapel Hill
Dissertation title: “Alterations to the Epigenome Represent Critical Mechanisms of Chemically Induced Carcinogenesis”
Advisor and committee chair: Ivan Rusyn

Alden Adrion (Ph.D.) 2012 - 2015
Committee member. Department of Environmental Sciences and Engineering, UNC Chapel Hill
Dissertation title: “Improving PAH Biodegradation in contaminated Soil by Adding Surfactant after Conventional Biological Treatment“
Advisor and committee chair: Michael Aitken

Hong Sik Yoo (Ph.D.) 2009 - 2014
Committee member. Department of Environmental Sciences and Engineering, UNC Chapel Hill
Dissertation title: “Effects of Inter-strain Differences in the Metabolism of Trichloroethylene on Liver and Kidney Toxicity”
Advisor and committee chair: Ivan Rusyn

Alex Carll (Ph.D.) 2012 – 2012
Committee member. Department of Environmental Sciences and Engineering, UNC Chapel Hill
Dissertation title: “The Influence of Autonomic Imbalance on Diesel Exhaust-Induced Cardiac Dysfunction in Heart Failure-Prone Rats “
Research Advisors: Aimen K. Ferraj and Daniel L. Costa
Academic advisor and committee chair: Avram Gold

Mark Salsbury (MSPH) 2010 - 2011
Reader. Department of Environmental Sciences and Engineering, UNC Chapel Hill
Technical Report: “Evaluation of Exposure to Acetamiprid in Pesticide Applicators”
Advisor and committee chair: Leena Nylander-French

Scott Watson (MSPH) 2010 - 2011
Reader. Department of Environmental Sciences and Engineering, UNC Chapel Hill
Technical Report: “Evaluation of a Human 3-Dimensional Skin Tissue Reconstruct as a Model to Screen for Xenobiotic Toxicity”
Advisor and committee chair: Leena Nylander-French

PROFESSIONAL SERVICE

For the Department of Environmental Sciences and Engineering:
- Member, IT Steering Committee 2014-2018
- Member, Chair Search Committee April 2016
- Presentation to the SPH Minority Undergraduate Fellows June 9, 2011

For the State of North Carolina:
- Participant, General Assembly of North Carolina Session 2017 NC State Senate committee hearing on House Bill 189 (Water Safety Act), Feb. 7, 2018
  Invited by Jeffery Warren of the NC Policy Collaboratory and State Senator Michael Lee to serve as technical expert to answer questions related to liquid chromatography and mass spectrometry instrumentation and analysis of GenX and perfluoroalkyl substances

Invited reviewer:
- Biomarkers: 2018, 2017
- Analytical Chemistry: 2013, 2012
- Chemical Research in Toxicology: 2012
- Rapid Communications in Mass Spectrometry: 2006
- International Journal of Mass Spectrometry: 2006

ONGOING RESEARCH SUPPORT

2 P30 ES010126-15A1 Troester (PD/PI) 06/01/2016 – 03/31/2021
NIH/NIEHS
UNC Center for Environmental Health and Susceptibility
Molecular Analysis Facility Core
The goal of the Molecular Analysis Facility Core (MAFC) is to support Center members, especially those in the Pilot Projects Program and the three Translational Research focus areas (Environmental Cancer, Cardiopulmonary Disease, and Developmental Disease), by ensuring access to analytical resources within the MAFC sub-core facilities (Biomarker Mass Spectrometry, Genome Sciences, Translational Genomics Laboratory, and Translational Pathology Laboratory). Support includes consultation and experimental design, routine sample analysis and training, development of novel analytical methods needed to advance research, and in-depth data analysis, integration, and interpretation.
Role: Director, Biomarker Mass Spectrometry Sub-core

COMPLETED RESEARCH SUPPORT

5 P42 ES005948-23 Fry (PD/PI) 04/01/11 – 03/31/17
NIH/NIEHS
Elucidating Risks: From Exposure and Mechanism to Outcome – Core C
The Chemistry and Analytical Core of the UNC-CH Superfund Research Program offers expertise in use of and access to instrumentation in all major areas of spectroscopy and spectrometry (UV-Vis, fluorescence, circular dichroism, nuclear magnetic resonance, mass spectrometry) and

chromatography (HPLC and UPLC). The Core provides advice on analytical method development including appropriate choice of analytes, instrumentation and standards, and also on chemical properties, safe handling, and disposal. The Core interacts in this manner with Projects 1, 2, 3, 4 and 5, and also with the Research Translation and Biostatistics Cores as needed.
Role: Research Support Core Co-Leader, Chemistry and Analytical Core

1 R01 OH010476 Nylander-French (PI) 10/01/14 – 09/30/16
CDC/NIOSH
Quantifying Determinants of Spray Painters' Isocyanurate Exposure
The goal of this project is to investigate and determine how individual and environmental factors affect isocyanurate and HDI monomer exposure-biomarker associations in spray painters.
Role: Investigator