

*Curriculum Vitae***Wanda M. Bodnar, Ph.D.**

Department of Environmental Sciences and Engineering
 University of North Carolina at Chapel Hill
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EDUCATION

Ph.D. in Chemistry, University of Virginia, Charlottesville, VA, Aug. 20, 1993
 Advisor: Dr. Donald F. Hunt, University 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 July 2018 -present
University of North Carolina at Chapel Hill

Department of Environmental Sciences and Engineering, Gillings School of Global Public Health
 Scientific Program Analyst, NC PFAS Testing Network
 Chemistry and Analytical Core Co-leader, UNC Superfund Research Program

Research Assistant Professor 2009-2018
University of North Carolina at Chapel Hill

Department of Environmental Sciences and Engineering, Gillings School of Global Public Health
 Director, UNC Biomarker Mass Spectrometry Core Facility
 Chemistry and Analytical Core Co-leader, UNC Superfund Research Program
 Molecular Analysis Facility Core Director, UNC Center for Environmental Health and Susceptibility

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 Glaxo Wellcome, Inc., RTP, NC Bioanalysis and Drug Metabolism	1998-2000
Senior Scientist Glaxo Wellcome, Inc., RTP, NC Diversity Sciences Combinatorial Chemistry	1995-1998
Senior Scientist Glaxo, Inc., RTP, NC Bioanalytical and Structural Chemistry	1993-1995
Research Assistant University of Virginia, Charlottesville, VA Department of Chemistry, Professor Donald. F. Hunt Lab	1990-1993
Teaching Assistant University of Virginia, Charlottesville, VA Department of Chemistry, Introductory Chemistry Laboratory	1989-1990
Teaching Assistant Middlebury College, Middlebury, VT Department of Chemistry, Advanced Instrumental Chemistry Laboratory	1988-1989

PROFESSIONAL DEVELOPMENT AND TRAINING

- Collaborative Institutional Training Initiative (CITI) certification for Human Subjects Research (Core Refresher), completed online Feb. 1, 2021
- Equity Advocacy in Admissions, 2-hour online training sponsored by UNC Gillings School of Global Public Health Office of Student Affairs, Chapel Hill, NC, Nov. 19, 2020
- Racial Equity Institute: A Groundwater Approach to Equity, 3-hour, anti-racism workshop sponsored by UNC Gillings School of Global Public Health Office of Inclusive Excellence, Chapel Hill, NC, Jun.16, 2020
- UNC North Carolina Translational and Clinical Science Institute (NC TraCS) Community and Stakeholder Engagement (CaSE) workshop: Qualitative Research 101, Feb. 10, 2020
- UNC CFE Workshop: Negotiation and Communication Skills, Chapel Hill, NC, Jan. 31, 2020
- Everyday Bias for Healthcare Professionals (@Cook Ross, 2019), 2.5-hour workshop sponsored by UNC School of Medicine, Chapel Hill, NC, Dec.10, 2019
- Strange Fruit: Providing Insight and Tools for Addressing Implicit Bias & Structural Racism, 4-hour workshop sponsored by UNC School of Medicine NC TraCS, Chapel Hill, NC, Nov. 7, 2019
- UNC Safe Zone Non-gender and Binary training, 2-hour workshop sponsored by the UNC LGBTQ Center, Chapel Hill, NC, Oct. 16, 2019
- Interstate Technology and Regulatory Council (ITRC) training: Managing PFAS Contamination at Your Site, 7.5-hour professional development certificate, Raleigh, NC, Jun.21, 2019
- Business Skills for Core Directors and Managers, 2-day workshop sponsored by UNC Office of Research Technologies and Core Facilities Advocacy Committee, Rizzo Center, Chapel Hill, NC, May 22-23, 2019
- UNC CFE Mentoring Summit, one-day professional development opportunity for faculty, Chapel Hill, NC, May 17, 2019
- UNC Harassment & Discrimination Prevention training, online course completed May 1, 2019
- Mental Health First Aid USA Certification, National Council for Behavioral Health, 8-hour classroom course, Chapel Hill, NC, completed Feb.16, 2018
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- Good Clinical Practice training, NIH NIAID GCP Learning Center, 4 online modules completed Mar. 2017
- UNC HAVEN (Helping to Advocate for Violence Ending Now) training, 3-hour program, Chapel Hill, NC, Jun.10, 2016
- UNC Safe Zone training, 4-hour workshop sponsored by the UNC LGBTQ Center, Carolina, Black Caucus, and Gillings School of Global Public Health, Chapel Hill, NC, Apr. 25, 2017
- Title IX Awareness and Violence Prevention for Faculty, UNC Chapel Hill 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 Mass Spectroscopy Training Course, Norwalk, CT. 2-day course completed Oct.1995
- GlaxoSmithKline Professional Development Courses 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

- 2019 Toxicological Sciences Paper of the Year Award: Society of Toxicology 58th Annual Meeting, March 10-14, 2019, Baltimore, MD
- 2009 Inspire Pharmaceuticals Sir Richard Evans Team Award for Azasite® clinical research
- 2006 GSK Bronze Level Research Award for contribution to the Albugon project
- 2003 GSK Bronze Level Research Award for contribution to the Adrenoleukodystrophy study
- 2001 GlaxoWellcome BioMet Rewards & Recognition Level II Award for Safety

PROFESSIONAL AFFILIATIONS

Member of the American Society for Mass Spectrometry, 1992-present

Member of the American Chemical Society, 1994-present

Member of the Triangle Area Mass Spectrometry Discussion Group (TAMS), 2000-present

BIBLIOGRAPHY

Link to My NCBI:

<https://www.ncbi.nlm.nih.gov/myncbi/wanda.bodnar.1/bibliography/public/>

BOOK CHAPTERS (2)

“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.

“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.

PENDING PUBLICATIONS (4)

“Identification of optimal particulate size range for inhaled steroid transmission to laryngeal vocal fold granulomas through computational fluid dynamics,” S. Basu, R. Shah, A. Pappa, J. Wu, A. Burke, W. Bennett, **W. Bodnar**, J.S. Kimbell, *in preparation*

“Per- and Polyfluoroalkyl Substances (PFASs) in Airborne Particulate Matter (PM_{2.0}) Emitted During Floor Waxing,” J. Zhou, K. Baumann, N. Chang, G. Morrison, **W. Bodnar**, Z. Zhang, J.M. Atkin, J.D. Surratt, B.J. Turpin, *in preparation*

“PFOS Dominates PFAS Composition in Ambient Fine Particulate Matter (PM_{2.5}) Collected Across North Carolina Nearly 20 Years After the End of Its US Production,” J. Zhou, K. Baumann, R.N. Mead, S.A. Skrabal, R.J. Kieber, G.B. Avery, M. Shimizu, J.C. DeWitt, M. Sun, S.A. Vance, **W. Bodnar**, Z. Zhang, L.B. Collins, J.D. Surratt, B.J. Turpin, *accepted, Environmental Science: Process & Impacts*

“Double-Blind, Randomized Clinical Trial of 1% Buffered vs. 2% Unbuffered Lidocaine Injections in Children,” S.D. Baker, J.Y. Lee, R.P. White, L. Collins, **W. Bodnar**, C. Philips, K. Divaris, *accepted, under revision for Pediatric Dentistry*

REFEREED PUBLICATIONS (45)

“Gut Microbiome Toxicity: Connecting the Environment and Gut Microbiome-Associated Diseases.” P. Tu, L. Chi, **W. Bodnar**, Z. Zhang, B. Gao, X. Bian, J. Stewart, R. Fry, K. Lu. Special Issue: Biomarkers of Environmental Toxicants, *Toxics*. 2020 Mar 12; 8(1). 19. doi: 10.3390/toxics8010019. PMID: PMC7151736

“Isomer-selective biodegradation of high-molecular-weight azaarenes in PAH-contaminated environmental samples.” J. Vila, Z. Tian, H. Wang, **W. Bodnar**, M.D. Aitken. *Sci. Total Environ*. 2020 Mar. 10; 707:135503. doi: 10.1016/j.scitotenv.2019.135503. Epub 2019 Nov 17. PMID: PMC6981052.

“Population-Based Analysis of DNA Damage and Epigenetic Effects of 1,3-Butadiene in the Mouse.” L. Lewis, B. Borowa-Mazgaj, A. de Conti, G.A. Chappell, Y.S. Luo, **W. Bodnar**, K. Konganti, F.A. Wright, D.W. Threadgill, W.A. Chiu, I.P. Pogribny, I. Rusyn. *Chem. Res. Toxicol*. 2019 Apr 25; doi: 10.1021/acs.chemrestox.9b00035. Epub 2019 Apr 25. PMID: 30990016.

“Evaluation of inhaled low-dose formaldehyde-induced DNA adducts and DNA–protein cross-links by liquid chromatography–tandem mass spectrometry.” J.P. Leng, C. Liu, H.J. Hartwell, R. Yu, Y. Lai, **W.M. Bodnar**, K. Lu, J.A. Swenberg. *Arch. Toxicol*. 2019; 1-11. doi.org/10.1007/s00204-019-02393-x. Epub 2019 Jan 30. PMID: 30701286.

“Sex-specific differences in genotoxic and epigenetic effects of 1,3-butadiene among mouse tissues.” L Lewis, G.A. Chappell, T. Kobets, B.E. O'Brien, D. Sangaraju, O. Kosyk, **W. Bodnar**, N.Y. Tretyakova, I.P. Pogribny, I. Rusyn *Arch. Toxicol*. 2019; PMID: PMC6451682.

“Development of a hydrophilic interaction liquid chromatography (HILIC) method for the chemical characterization of water-soluble isoprene epoxydiol (IEPOX)-derived secondary organic aerosol.” T. Cui, Z. Zeng, E.O. Dos Santos, Z. Zhang, Y. Chen, Y. Zhang, C.A. Rose, S.H. Budisulistiorini, L.B. Collins, **W.M. Bodnar**, R.A.F. de Souza, S.T. Martin, C.M.D. Machado, B.J. Turpin, A. Gold, A.P. Ault, J.D. Surratt. *Environ. Sci. Process Impacts*. 2018 Nov 14; 20 (11):1524-1536. PMID: 30259953.

“Tracing the Biotransformation of Polycyclic Aromatic Hydrocarbons in Contaminated Soil Using Stable Isotope-Assisted Metabolomics.” Z. Tian, J. Vila, M. Yu, **W. Bodnar**, 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. PMCID: PMC6095468.

“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). PMCID: PMC5944832.

“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. PMCID: PMC6075464.

“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. 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. 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. 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: 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: 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: 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: 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: 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: PMC4250847.

“The endogenous exposome.” J. Nakamura, E. Mutlu, V. Sharma, L. Collins, **W. Bodnar**, R. Yu, Y. Lai, B. Moeller, K. Lu, J. Swenberg, *DNA Repair (Amst)*. 2014 Jul; 19: 3-13. Epub 2014 Apr 24. PMID: 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: 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: 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,” J.M. Currier, R.J. Saunders, L. Ding, **W. Bodnar**, P. Cable, T. Matoušek, J.T. Creede, M. Styblo, *J. Anal. At. Spectrom.*, 2013; 28(6): 843-852. Epub 2013 Mar 27. PMID: PMC3655785.

“Biomarkers of Exposure and Effect in Human Lymphoblastoid TK6 Cells Following [13C2]-Acetaldehyde Exposure,” B.C. Moeller, L. Recio, A. Green, W. Sun, F.A. Wright, **W.M. Bodnar**, J.A. Swenberg, *Toxicol. Sci.*, 2013; 133(1): 1-12. Epub 2013 Feb 19. PMID: 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. PMCID: PMC3670188.

"Epigenetic mechanisms of mouse interstrain variability in genotoxicity of the environmental toxicant 1,3-butadiene," I. Koturbash, A. Scherhag, J. Sorrentino, K. Sexton, **W. Bodnar**, J.A. Swenberg, F.A. Beland, F. Pardo-Manuel deVillena, I. Rusyn, I.P. Pogribny, *Toxicol. Sci.*, 2011 Aug; 122(2): 448-456. Epub 2011 May 20. PMCID: PMC3155089.

"Epigenetic Alterations in Liver of C57BL/6J Mice after Short-Term Inhalational Exposure to 1,3-Butadiene," I. Koturbash, A. Scherhag, J. Sorrentino, K. Sexton, **W. Bodnar**, V. Tryndyak, J.R. Latendresse, J.A. Swenberg, F.A. Beland, I.P. Pogribny, I. Rusyn, *Environ. Health Perspect.*, 2011 May; 119(5): 635-640. Epub 2010Dec13. PMCID: PMC3094413.

"Adiponectin Lowers Glucose Production by Increasing SOGA," R.B. Cowerd, M.M. Asmar, J.M. Alderman, E.A. Alderman, A.L. Garland, W.H. Busby, **W.M. Bodnar**, I. Rusyn, B.D. Medoff, R. Tisch, E. Mayer-Davis, J.A. Swenberg, S.H. Zeisel, T.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]. 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. 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.

"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. Slingsluff, D.F. Hunt, *Chem. Immunol.*, 1993; 57: 39-62 Review. PMID: 8260089.

"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. Englehard, *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. DOI: 10.1007/BF01673734.

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

OTHER SCHOLARLY PRODUCTS

North Carolina Per- and Polyfluoroalkyl Substances (PFAS) Testing Network quarterly progress reports prepared for the NC General Assembly (NCGA) and stakeholders, Jan.1, 2019-Jan.1, 2021. <https://ncpfastnetwork.com/resources/>

Research article highlights, NC PFAS Testing Network monthly e-newsletter, Jan. 2019-Dec. 2020. <https://ncpfastnetwork.com/newsletters/>

Blue Ridge Environmental Defense League's In Our Backyard Podcast Interview #37 "PFAS in Our World: How Much and What We Can Do," Oct. 30, 2020, <https://anchor.fm/bredl>.

Panelist for NC Coastal Federation Zoom webinar "Emerging Contaminants in North Carolina Waters, Oct. 22, 2020.

"North Carolina Aqueous Film Forming Foam (AFFF) Inventory Project," presentation to the NC PFAST Stakeholders Advisory Committee, virtual meeting Oct. 7, 2020.

NC PFAS Testing Network 2020 Fall Virtual Seminar Series, Seminar #1: Introduction and Q&A on PFAS in NC Drinking water Sources, Sep. 28, 2020.

Organizer and moderator for PFAS information exchange meeting with members of the PFAS Testing Network, NC DEQ, and NC DHHS. The meeting was held Feb. 17, 2020 in person at the NC Division of Public Health in Raleigh, NC and remotely via Zoom.

Invited by the organizers of the joint Research Triangle Environmental Health Collaborative (RTEHC) and PFAS Testing Network Summit to provide welcoming remarks and introduce the first speaker, NCEH/ATSDR Director Dr. Patrick Breysse. The summit, PFAS: Integrating Science and Solutions in North Carolina, was held at the North Carolina Biotech Center, Durham, NC, Oct. 23-24, 2019.

“Introduction to the NC PFAST Network,” presentation and Q&A with faculty and campus leaders participating in the UNC Tarheel Bus Tour 2019, Hotel Ballast, Wilmington, NC, Oct. 17, 2019.

“NC PFAST Network: Teams, Objectives and Status Updates,” presentation at the North Carolina regional PFAS information exchange meeting organized by Professor Detlef Knappe and held at NC State University, Raleigh, NC, Jun. 17, 2019.

“Introduction to the NC PFAS Testing Network,” presentation at the NC Water Quality Association Drinking Water Committee meeting, Neuse River Training Facility, Raleigh, NC, Feb. 28, 2019.

“Introduction to the NC PFAS Testing Network,” presentation at the 15th Annual North Carolina Water Quality Workshop co-sponsored by the North Carolina Manufacturers Alliance (NCMA) and the North Carolina Division of Water Resources (DWR), McKimmon Conference and Training Center, Raleigh, NC, Feb. 14, 2019.

“Biomarker Mass Spectrometry Core Facility,” slides, brochure, and poster presented at the UNC Center for Structural Biology’s Cores Showcase, Chapel Hill, NC, June 2, 2016.

“Biomarkers and the Endogenous Exposome: Promoting Science Based Risk Assessment,” presentation at the Researchers’ Lunch with the Dean, UNC Gillings SPH, Chapel Hill, NC, May 20, 2015.

“Core C: Chemistry and Analytical Core- Mass Spectrometry,” poster presented at the UNC Superfund Research Program External Advisory Committee meeting, Chapel Hill, NC, Dec. 8-9, 2013.

Project highlight from the “UNC Biomarker Mass Spectrometry Core Facility,” poster presented at the UNC Center for Environmental Health and Susceptibility (CEHS) Symposium on Interdisciplinary Environmental Health Research: “When Epidemiology and Basic Science Don’t Agree: Developing a Path Forward,” Chapel Hill, NC, Nov. 14, 2011.

Overview and capabilities of the “UNC Biomarker Mass Spectrometry Core Facility,” poster presented at the UNC School of Medicine Office of Translational Technology’s Facility Cores Poster Session, Chapel Hill, NC, Apr. 28, 2011.

“Discovery and Validation of Protein Biomarkers,” poster presented at the 2006 GSK Genetics Research Conference, Wall to Wall Impact Delivering for Our Patients, Building for Their Future June 6-8, 2006, Raleigh, NC.

“Proteomics in the GSK Matrix- Collaborative Impact in Interaction and Expression Studies,” poster presented at the 2003 GSK Genetics Research Conference, Moving the Helix into Healthcare, May 8-9, 2003, Cary, NC.

“Evaluation of Automated In-gel Digestion Coupled with MALDI/MS and MALDI/MS/MS for Protein Identification,” poster presented at the 50th ASMS Conference on Mass Spectrometry and Allied Topics, June 2-7, 2002, Orlando, FL.

“A Novel High Throughput Screen for Assessing In Vitro Permeability of New Chemical Entities,” poster presented at the 1999 TAMS Poster and Vendor Night, Oct. 28, 1999, RTP, NC.

“Automated Mass Spectral Analysis for Combinatorial Chemistry: The Capture Program,” poster presented at the 45th ASMS Conference on Mass Spectrometry and Allied Topics, June 1-6, 1997, Palm Springs, CA.

“Pharmacokinetic Characterization of Combinatorial Libraries,” poster presented at the 44th ASMS Conference on Mass Spectrometry and Allied Topics, May 12-16, 1996, Portland, OR.

“Automated Mass Spectral Data Analysis for Combinatorial Chemistry,” poster presented at the 44th ASMS Conference on Mass Spectrometry and Allied Topics, May 12-16, 1996, Portland, OR.

“Mass Spectrometric Analysis of Chemical Libraries,” podium presentation at the 110th Regional Conference of the North Carolina Section of the American Chemical Society, Apr. 12-13, 1996, Raleigh, NC.

“Analysis of Blotted Peptides and Proteins by MALDI TOF Mass Spectrometry,” poster presented at the 42nd ASMS Conference on Mass Spectrometry and Allied Topics, May 29 - June 3, 1994, Chicago, IL.

“Identification of Disease State Associated Antigens Presented to the Immune System by Class I MHC Molecules; Prospects for the Development of Synthetic Vaccines Against Viral Infection and Cancer,” podium presentation at the 41st ASMS conference on Mass Spectrometry and Allied Topics, May 31-June 4, 1993, San Francisco, CA.

“Characterization of Peptides Extracted from the Human Class I MHC Molecule, HLA-B7,” poster presented at the 41st ASMS Conference on Mass Spectrometry and Allied Topics, May 31-June 4, 1993, San Francisco, CA.

“Posttranslational Modification of Class III Beta-Tubulin: Characterization by Tandem Mass Spectrometry,” poster presented at the 32nd annual meeting of the American Society for Cell Biology, Nov. 15-19, 1992, Denver, CO.

“Sequence Analysis of a Sexual Receptivity-Terminating Factor from the Corn Earworm Moth and Peptides Associated with the Class I MHC Molecule, HLA-B7,” poster presented at the 40th Conference on Mass Spectrometry and Allied Topics, May 31-June 5, 1992, Washington, DC.

“Polyglutamylation and Phosphorylation of Neuronal Beta-Tubulins: Structural Analysis by Tandem Mass Spectrometry,” poster presented at the 30th annual meeting of the American Society for Cell Biology, Dec. 9-13, 1990, San Diego, CA.

TEACHING AND INSTRUCTIONAL ACTIVITIES

Presenter, Per- and Polyfluoroalkyl Substances (PFAS) Testing Network Webinar for Science Educators, Oct. 3, 2019, organized by Dana Haine of the UNC Center for Public Engagement with Science. Title: “Characterizing PFAS Contamination in NC: The PFAS Testing Network”
<https://www.youtube.com/watch?v=DTnxGDHbzqg&feature=youtu.be>

Faculty mentor for undergraduate final project (4 students), 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.

Other 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

CURRENT RESEARCH SUPPORT

NC PFAST NETWORK Surratt (PD) 07/01/2018 - 06/30/2021

North Carolina Policy Collaboratory

The NC PFAST Network is a multi-university research program funded through the North Carolina Policy Collaboratory in response to NC Legislative mandate (Session Law 2018-5; Senate Bill 99) to address per- and poly-fluoroalkyl substances (PFAS), including GenX, through the use of expertise and technology available in institutions of higher education located within the state.

Role: Scientific Program Analyst (Associate Program Director)

NC FIREFIGHTING FOAM INVENTORY Bodnar (PI) 03/01/2020 – 04/15/2021

North Carolina Policy Collaboratory

The objective of this state mandated project (Session Law 2019-241; SB433) is to "create an inventory of aqueous film-forming foam (AFFF) used or stored by fire departments in North Carolina operated, managed, or overseen by units of local government, including those located at or serving airports". The goal is to identify legacy foams containing hazardous per- and polyfluoroalkyl substances (PFAS) and to provide recommendations and estimated costs for collection and disposal of these foams.

Role: Principal Investigator

1 P42 ES031007-01 Fry (PD/PI) 02/20/2020 - 01/31/2025

NIH/NIEHS

UNC Superfund Research Program- Core D

The UNC-CH SRP addresses serious public health challenges faced by communities in North Carolina (NC) and across the nation related to inorganic arsenic (iAs) exposures. The Chemistry and Analytical Core is a critical research support Core, providing expertise and analytical capabilities to measure toxic substances with prioritization of inorganic arsenic (iAs) and co-occurring contaminants and to characterize their effects on metabolic dysfunction/diabetes.

Role: Research Support Core Co-Leader, Chemistry and Analytical Core

COMPLETED 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 Molecular Analysis Facility Core (MAFC) supports Center members, especially those in the Pilot Projects Program and the three Translational Research focus areas (Environmental Cancer, Cardiopulmonary Disease, and Developmental Disease), by providing 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, 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 (role ended 06/30/2018)

5 P42 ES005948-23 Fry (PD/PI) 04/01/11 - 03/31/17
NIH/NIEHS

Elucidating Risks: From Exposure and Mechanism to Outcome

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 and chromatography. 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.

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

PROFESSIONAL AND COMMUNITY SERVICE

For the UNC Department of Environmental Sciences and Engineering (ESE) and Gillings School of Global Public Health (SPH):

- Faculty representative, Gillings SPH Dean's Inclusive Excellence Council, 2019-present
- Faculty Liaison, UNC Student Honor System, Office of Student Conduct, 2019-present
- Faculty representative, UNC Green Labs Certification Program Committee, 2019-present
- Technical expert (mass spectrometry) for the department:
 - obtained funding and purchased multiple pieces of equipment for the mass spectrometry core lab (2011-2018) and facilitated acquisition of a high resolution Orbitrap mass spectrometer for the Lu lab (2016) and a TD-GC-MS system for the Turpin lab (2019)
 - provided information to faculty regarding equipment grant opportunities and suggestions for new instruments and generated budget estimates and letters of support for proposals
- Presentation about my research career, UNC and the NC PFAST Network to Voyager Academy High School Students (Durham, NC Charter school), Oct. 22, 2019
- Represented the Gillings BSPH program with the ESE Academic Program Support Coordinator at the "Fall into Your Major!" event organized by the UNC Academic Advising and New Student & Family Programs, Sep. 18, 2019
- Member, ESE IT Steering Committee 2014-2018
- Member, ESE Chair Search Committee April 2016
- Presentation about ESE department and faculty research opportunities to the SPH Minority Undergraduate Fellows June 9, 2011

For the State of North Carolina:

- Presentation to the NC General Assembly (NCGA) House Committee on the Environment, update on the NC PFAST Network activities, Raleigh, NC, Apr. 9, 2019.
- Presentation to the NCGA Joint Legislative Oversight Committee on Agriculture, Natural and Economic Resources (AgNER), Raleigh, NC, Jan. 10, 2019.
- Technical expert, NCGA State Senate Committee hearing on House Bill 189 (Water Safety Act), Invited by Dr. 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 other perfluorinated substances, Raleigh, NC, Feb. 7, 2018.

Community Service:

- Volunteer, Carolina Community Garden (UNC campus), 2019
- Volunteer, Carolina Center for Public Service's UNC Disaster Relief trip to Lumberton, NC to clean-up and rebuild after Hurricane Florence, Aug. 2, 2019
- Volunteer, Games Guild Co-Director, North Carolina Historical Enrichment Society Renaissance Faire, Raleigh, NC, 2007-2010
- Volunteer, Durham Rescue Mission Annual Thanksgiving Community Dinner, Durham, NC, 1998-2006

Ad Hoc proposal reviewer:

National Science Foundation Excellence in Research Track of the Historically Black Colleges and Universities Undergraduate Programs, Jan. 2019

Invited journal peer reviewer:

Nutrients: 2020

Biomarkers: 2020, 2018, 2017

Analytical Chemistry: 2013, 2012

Chemical Research in Toxicology: 2012

Rapid Communications in Mass Spectrometry: 2006

International Journal of Mass Spectrometry: 2006

SERVICE ON GRADUATE STUDENT COMMITTEES

Molly Frauenheim (Ph.D.) 2021 - present
 Committee member. Department of Environmental Sciences and Engineering, UNC Chapel Hill
 Research: Chemical synthesis of precursors to isoprene-derived secondary organic aerosols
 Co-advisors and committee chairs: Avram Gold and Jason D. Surratt

Alma Beciragic (Ph.D.) 2016 - 2020
 Committee member. Department of Environmental Sciences and Engineering, UNC Chapel Hill
 Dissertation Title: "Assessing Nanofiltration Membrane Leachates and Their Impact on Drinking Water Quality"
 Advisor and committee chair: Howard S. Weinberg

Zachary Robbins (Ph.D.) 2012 - 2019
 Committee member. Department of Environmental Sciences and Engineering, UNC Chapel Hill
 Dissertation Title: "Biomarkers of Oligomeric 1,6-Hexamethylene Diisocyanate Exposure in the Vehicle Refinishing Industry"
 Advisor and committee chair: Leena Nylander-French

Pengcheng Tu (Ph.D.) 2018 - 2019
Committee member. Department of Environmental Sciences and Engineering, UNC Chapel Hill
Dissertation Title: "Effects of Gut Microbiome Modulation on Intestinal Inflammation and Arsenic toxicity with Dietary Administration of Black Raspberries"
Advisor and committee chair: Kun Lu

Tianqu Cui (Ph.D.) 2018 - 2019
Committee member. Department of Environmental Sciences and Engineering, UNC Chapel Hill
Dissertation Title: "Chemical Characterization of Source-specific Atmospheric Organic Aerosol via Mass Spectrometry"
Advisor and Committee Chair: Jason D. Surratt

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 Trichloroethylene 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