Assistant Professor (*Research track*)
Department of Nutrition
University of North Carolina at Chapel Hill
Nutrition Research Institute
500 Laureate Way, Rm 4203
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704-250-5068 (office)

Education

Ph.D., Biochemistry, University of Alabama at Birmingham, Birmingham, AL, 2001.

B.S., Biochemistry, University of Dayton, Dayton, OH, 1996.

Summary of Experience

My research focuses on the role of nutrients in breast cancer treatment responses and inflammation-driven dysfunction, and how heterogeneity contributes to cancer outcome disparities. I have expertise in malignant disease progression, therapeutic responsivity and immune microenvironment crosstalk in models of melanoma, leukemia, prostate, bone and breast cancer. I use high-throughput molecular bioassays, genomics and metabolomics to conduct *in vitro* and *in vivo* studies and analyses of human subjects' biospecimens. I also lead oncology and immunology-focused projects using NMR (nuclear magnetic resonance) and LC-MS (liquid chromatography-mass spectrometry) in the NIH Eastern Regional Comprehensive Metabolomics Resource Core (ERCMRC), directed by Dr. Susan Sumner at the NRI. My research has revealed mechanistic drivers of malignancy, cellular players facilitating cancer-immune system crosstalk and identified metabolic and inflammatory biomarkers of treatment response.

Professional Experience

3/2017 to Date. Department of Nutrition, University of North Carolina at Chapel Hill, Chapel Hill, NC.
Assistant Professor, Nutrition Research Institute and ERCMRC. Dr. Stewart's program focuses on how different nutritional states (i.e. deficiencies, overfeeding) impacts both immune system dysregulation through metabolically perturbed inflammatory responses and the heterogeneity of disparate chemotherapeutic outcomes in cancer. Actively contributes to several Department of Nutrition and/or Nutrition Research Institute-specific committees, and serves as co-Mentor for Department BSPH student.

2014 to 2017. RTI International, Research Triangle Park, NC.
Research Biologist, NIH ERCMRC. Used expertise in LC-MS and NMR-based metabolomics methods to complement previous molecular biology proficiencies to lead 20 cancer and immunology-focused program collaborative projects and 25 additional projects across a range of research disciplines, within the ERCMRC; evaluating therapeutic responses, distinguishing disease status, and identifying potentially relevant biomarker targets. Responsibilities also included coordinating activities of the annual Pilot and Feasibility program review process, managing the laboratory logistics of the ERCMRC, and assisting with training of interns in workflows.

2013 to 2014. RTI International, Research Triangle Park, NC.
Postdoctoral Scientist, NIH ERCMRC. Trained to become proficient in various metabolomics methods (LC-MS and NMR) and analysis workflows used to characterize diseases and biological dysfunction through biomarker identification.

2010 to 2013. University of North Carolina at Chapel Hill, Chapel Hill, NC.
Postdoctoral Fellow, Departments of Pathology & Laboratory Medicine and Epidemiology. Used microarray and polymerase chain reaction (PCR)–based array technologies and analyses to characterize the phenotypic and genomic expression responses between different breast cancer microenvironments and macrophages. Participated in several aspects of the Normal Breast Study observational trial, from consenting patients and processing samples to conducting pilot studies on epidemiologically based research questions.

2012. North Carolina Central University, Durham, NC.
Guest Lecturer, General Biology (September to October). Prepared and delivered eight lectures covering two chapters on cell structure and function and on membrane structure and function. Assigned in-class work and homework to students. Contributed to exam questions and proctored exams.

2007 to 2009. City of Dayton Municipality, Dayton, OH.
Chemical Analyst, Wastewater Treatment Plant Laboratory. Conducted many analytical assays to monitor plant quality-control checkpoints for the wastewater treatment process. These assays include the biochemical oxygen demand test, fecal coliform assay, ammonia, nitrate and phosphorus monitoring, sludge handling, cyanide and heavy metals analyses. Documented and entered parameters into the Laboratory Information Management System (LIMS) for plant operations and U.S. Environmental Protection Agency–required reporting to ensure that safe effluent is discharged into the receiving waters as mandated by the National Pollutant Discharge Elimination System.

2004 to 2005. University of Alabama, Birmingham, AL.
Postdoctoral Fellow, Department of Pathology. Conducted research on prostate cancer metastasis to bone. Investigated the significance of the Notch signaling cascade during prostate cancer progression to determine whether the Notch protein or its downstream effector genes could serve as new therapeutic targets for treating metastatic prostate cancer.

2002 to 2004. University of Delaware, Newark, DE.
Postdoctoral Fellow, Department of Biological Sciences. Identified and validated microarray-detected differentially expressed genes as potential oncofetal biomarkers in the LNCaP prostate cancer progression model. Conducted an in vivo epigenetic stress study on prostate development, evaluating key developmental in utero exposures of the urogenital sinus to estrogen or testosterone and survival-surgery castration on prostate tissues harvested and analyzed by microarray technology. Conducted research on the in vitro efficacy of novel sodium channel blockers in breast cancer cell line models.

1996 to 2001. University of Louisville, Louisville, KY; and University of Alabama, Birmingham, AL.
Graduate Research Assistant, Department of Biochemistry and Molecular Genetics. Conducted dissertation research. Designed and tested the in vitro and in vivo efficacy of rationally modified clamp-forming antisense oligonucleotides targeting the importance of c-*myc* oncogene overexpression in melanoma cell lines and a melanoma mouse model.

1996. Rohm and Haas Company, Spring House, PA.
Summer Research Intern, Architectural Coatings Division (June to August). Monitored and evaluated the viscosity, flow, and shear of rheology modifiers to determine the best compositions for use in exterior paint coatings. The internship was a component of an award received as part of a research presentation contest at the Annual Conference of the National Organization for the Advancement of Black Chemists and Chemical Engineers.

1995 to 1996. Montgomery County Crime Laboratory, Dayton, OH.
Undergraduate Research Intern, Division of Toxicology. Standardized the method of dry ashing digestion used by the Crime Laboratory for detecting arsenic poisoning.

1995 to 1996. University of Dayton, Dayton, OH.
Senior Research Fellow, Department of Chemistry. Conducted the thesis project on medicinal chemistry, focusing on the synthesis of novel adenine analog nucleosides to be evaluated for antiviral efficacy.

1995. Montgomery County Coroner's Office, Dayton, OH.
Visceration Assistant, Division of Autopsy (May to August). Assisted a Pathologist in conducting autopsies, including specimen collection and final body preparation.

Publications

** Co-First Authorship*

1. Li, Y-Y., Stewart, DA., Ye, XM., Yin, LH., McRitchie, SL., Pathmasiri, WW., Fennell, TR., Cheung, HY., Sumner, SJ. 2018. A metabolomics approach to investigate kukoamine B - a potent natural product with anti-diabetic properties. *Frontiers in Pharmacology,* 22 January, vol 9, 1-16.
2. Jason Winnike*, Delisha Stewart*, Wimal Pathmasiri, Susan McRitchie, and Susan Sumner. 2018. Stable isotope resolved metabolomic differences between hormone-responsive and triple-negative breast cancer cell lines. *International Journal of Breast Cancer,* vol. 2018, Article ID 2063540.
3. Xuezheng Sun*, Delisha A. Stewart*, Rupninder Sandhu, Erin L. Kirk, Wimal W. Pathmasiri, Susan L. McRitchie, Robert Clark, Melissa A. Troester, and Susan J. Sumner. 2018. Correlated metabolomic, genomic, and histologic phenotypes in histologically normal breast tissue. *PLoS ONE,* April, 13(4):e0193792.
4. Audet GN, Dineen SM, Stewart DA, Plamper ML, Pathmasiri WW, McRitchie SL, Sumner SJ, Leon LR. 2017. Pre-treatment with indomethacin results in increased heat stroke severity during recovery in a rodent model of heat stroke. *J Appl Physiol* , Jun 8; doi: 10.1152/japplphysiol.00242.2017.
5. Bruce M. McClenathan, Delisha A. Stewart, Christina E. Spooner, Wimal W. Pathmasiri, Jason P. Burgess, Susan L. McRitchie, Young S. Choi, Susan C. Sumner. 2017. Metabolites as Biomarkers of Adverse Reactions Following Vaccination: A Pilot Study using Nuclear Magnetic Resonance Metabolomics. *Vaccine*, 35(9):1238-1245.
6. Delisha Stewart, Jason Winnike, Susan McRitchie, Wimal Pathmasiri, and Susan Sumner. 2016. Metabolomics analysis of hormone-responsive versus triple-negative breast cancer cell responses to Taxol identify key differences. *Journal of Proteome Research*, Sep 2;15(9):3225-40.
7. Alexandra E. Livanos, Thomas Greiner, Pajau Vangay, Wimal Pathmasiri, Delisha Stewart, Susan McRitchie, Huilin Li, Jennifer Chung, Jiho Sohn, Zhan Gao, Cecily Barber, Sara Kim, Joanne Kim, Sandy Ng, Arlin Rogers, Susan Sumner, Dan Knights, Alexander Alekseyenko, Fredrik Bäckhed and Martin J. Blaser. 2016. Antibiotic-mediated gut microbiome perturbation accelerates development of type 1 diabetes in NOD mice. *Nature Microbiology*, 1, Article 1.
8. Mortensen NP, Mercier KA, McRitchie S, Cavallo T, Pathmasiri W, Stewart D, Sumner S. 2016. Microfluidics Meets Metabolomics to Reveal the Impact of Campylobacter jejuni Infection on Biochemical Pathways. *Biomedical Microdevices* 18(3):51. doi: 10.1007/s10544-016-0076-9.number:16140; doi:10.1038/nmicrobiol.2016.140.

9. Milner, J., J. Rebeles, S. Dhungana, D.A. Stewart, S.C. Sumner, M.H. Meyers, P. Mancuso, and M.A. Beck. 2015. Obesity increases mortality and modulates the lung metabolome during pandemic H1N1 influenza virus infection in mice. *Journal of Immunology 194*(10):4846–4859.
10. Pirone, J.R., M. D'Arcy, D.A. Stewart, W.C. Hines, M. Johnson, M.N. Gould, P. Yaswen, J.J. Jerry, S.S. Schneider, and M.A. Troester. 2012. Age-associated gene expression in normal breast tissue mirrors qualitative age-at-incidence patterns for breast cancer. *Cancer Epidemiology, Biomarkers & Prevention 21*(10):1735–1744.
11. Fleming, J.M.., T.C. Miller, M. Kidacki, M, E. Ginsburg, C.H. Stuelten, D.A. Stewart, M.A. Troester, and B.K. Vonderhaar. 2012. Paracrine interactions between primary human macrophages and human fibroblasts enhance murine mammary gland humanization in vivo. *Breast Cancer Research 14*(3):R97.
12. Stewart, D.A., Y. Yang, L. Makowski, and M.A. Troester. 2012. Basal-like breast cancer cells induce phenotypic and genomic changes in macrophages. *Molecular Cancer Research 10*(6):727–738. (*Selected as the June Issue Highlight.*)
13. Camp, J.T., F. Elloumi, E. Roman-Perez, J. Rein, D.A. Stewart, J.C. Harrell, C.M. Perou, and M.A. Troester. 2011. Interactions with fibroblasts are distinct in basal-like and luminal breast cancers. *Molecular Cancer Research 9*(1):3–13.
14. Stewart, D.A., C.R. Cooper, and R.A. Sikes. 2004. Changes in extracellular matrix (ECM) and ECM–associated proteins in the metastatic progression of prostate cancer. *Reproductive Biology and Endocrinology 2*:2.
15. Stewart, D.A., X. Xu, S.D. Thomas, and D.M. Miller. 2002. Acridine-modified, clamp-forming oligonucleotides synergize with cisplatin to inhibit c-*Myc* expression and B16-F0 tumor progression. *Nucleic Acids Research 30*(11):2565–2574.
16. Stewart, D.A., S.D. Thomas, C.A. Mayfield, and D.M. Miller. 2001. Psoralen-modified, clamp-forming antisense oligonucleotides reduce cellular c-*Myc* protein expression and B16-F0 proliferation. *Nucleic Acids Research 29*(19):4052–4061.
17. Stewart, D.A. 2001. Ph.D. Dissertation: *The Efficacy of Clamp-Forming Antisense Oligonucleotides on c-Myc Oncogene Expression in a Mouse Melanoma Model*. University of Alabama at Birmingham, Birmingham, AL.
18. Stewart, D., J. Trauth, J. Windholtz, and K. Church. 1996. Adenosine nucleoside analog synthesis via electrophilic activation of electron rich alkenes. *Synthetic Communications 26*(22):4279–4288.
19. Stewart, D.A. 1996. Senior thesis: *Synthesis of Adenine Analogue Nucleosides via Amino-Selenation*. University of Dayton, Dayton, OH.
20. Stewart, D.A., S. Dhungana, R.F. Clark, W.W. Pathmasiri, S.L. McRitchie, and S.J. Sumner. 2015. Omics technologies used in systems biology. Pp. 57–84 in *Systems Biology in Toxicology and Environmental Health.* 1st Edition. Edited by R. Fry (Ed.). Waltham, MA: Academic Press.

Presentations

1. Brett Doherty, Jiang Gui, Delisha Stewart, Juliette Madan, Anne Hoen, Susan Sumner, Margaret Karagas and Megan Romano. 2019. *Environmental Pollutants and Plasma Metabolomics in a Pregnancy Cohort*. For oral presentation at the 31st Annual Conference of the International Society Of Environmental Epidemiology, Utrecht, The Netherlands (*August*).

2. Delisha Stewart. 2019. *Metabolomics Approaches to Cancer Research*. Invited talk at the American Institute for Cancer Research Conference on Diet, Obesity, Physical Activity and Cancer, Chapel Hill, NC.
3. Reza Ghanbari, Wimal Pathmasiri, Susan McRitchie, Delisha Stewart, Yuanyuan Li, Hossein Maleki, Arash Etemadi, Christian Abnet, Jonathan Pollock, Reza Malekzadeh, Susan Sumner. 2019. *Metabolomics Analysis of Opiate Abusers from Golestan Cohort Study (GCS)*. Poster presented at Experimental Biology 2019 (American Society for Biochemistry and Molecular Biology), Orlando, FL.
4. Delish A. Stewart. 2018. *Race, Ethnicity, and Health Disparities*. Invited talk at NRI "Appetite For Life" community outreach seminar series, Kannapolis, NC.
5. Delisha A. Stewart, Wimal W. Pathmasiri, Susan L. McRitchie, Lance Buckley, Tammey J. Naab, Robert L. DeWitty, Jr, Vikisha T. Fripp, Estelle Cooke-Sampson, Desta A. Beyene, Luisel Ricks-Santi, Robert L. Copeland, Jr, Susan J. Sumner and Yasmine M. Kanaan. 2018. *Metabolic profiles distinguish breast cancer progression in African American women (nutritionally-focused)*. Poster presented at the Nutrition Research Institute's Defining Precision Nutrition Symposium, Kannapolis, NC.
6. Li, Y.Y., Stewart, D.A., Pathmasiri, W., McRitchie, S., Urbina E.M., Mayer-Davis E.J., Dabelea D., and Sumner, S.J. 2018. The impact of obesity on metabotype of type 1 and type 2 diabetes in youth. Selected for and received award for oral presentation at Metabolomics Society Annual Meeting, Seattle, WA.
7. Delisha A. Stewart, Wimal W. Pathmasiri, Susan L. McRitchie, Lance Buckley, Tammey J. Naab, Robert L. DeWitty, Jr, Vikisha T. Fripp, Estelle Cooke-Sampson, Desta A. Beyene, Luisel Ricks-Santi, Robert L. Copeland, Jr, Susan J. Sumner and Yasmine M. Kanaan. 2018. *Metabolic profiles distinguish breast cancer progression in African American women*. Poster presented at the Annual Meeting of the American Association for Cancer Research, Chicago, IL.
8. Delisha Stewart and Susan Sumner. 2017. *NIH Eastern Regional Comprehensive Metabolomics Resource Core (ERCMRC): Applications of Metabolomics in Cancer Research.* Poster presented at the North Carolina Research Campus monthly "Chem101", Kannapolis, NC.
9. Delisha Stewart, Yuan-Yuan Li, Wimal Pathmasiri, Zachery Acuff, Susan McRitchie and Susan Sumner. 2017. *Expansion of STS capability in cytokine array platform development: application in natural products research*. Poster presented at RTI International's Internal Research & Development Annual Innovation Showcase, Research Triangle Park, NC.
10. Wimal Pathmasiri, Yuan-Yuan Li, Delisha Stewart, Susan McRitchie and Susan Sumner. 2017. *Establishment of a Platform to Evaluate Interactions Between Natural Products and Pharmaceutical Drugs*. Poster presented at RTI International's Internal Research & Development Annual Innovation Showcase, Research Triangle Park, NC.
11. Tammy Bowman Cavallo, Ninell Pollas Mortensen, Jocelin Deese-Spruill, Delisha Stewart, Susan McRitchie, Zachary Acuff and Susan J. Sumner. 2017. *Flow Cytometry Method Development and Suitability of Cell Sorting in Metabolomics Analysis of Single Cell Populations.*

Poster presented at RTI International's Internal Research & Development Annual Innovation Showcase, Research Triangle Park, NC.

12. Li Y. Y., Stewart D. A., McRitchie S. L., Acuff Z. J., Pathmasiri W. W., Ye X. M., Cheung H. Y., Sumner, S. J. 2016. *Kukoamine B is a potent antidiabetic dietary natural product: A system pharmacology approach.* Selected as oral presentation at the 51st Annual Southeastern Regional Lipid Conference. Cashiers, NC.
13. BP Vickery, M Kulis, D Hamilton, D Stewart, W Pathmasiri, S McRitchie, J Burgess, S Sumner, AW Burks. 2016. *NMR-Based Metabolomics Analysis Reproducibly Identifies Unique Subject-Specific Profiles That Change during Peanut Oral Immunotherapy*. Poster presented at American Academy of Allergy Asthma & Immunology, Annual Meeting, Los Angeles, CA.
14. Bruce M. McClenathan, Delisha A. Stewart, Christina E. Spooner, Wimal W. Pathmasiri, Jason P. Burgess, Susan L. McRitchie, Y. Sammy Choi, Susan C.J. Sumner. 2016. *Metabotypes of Subjects with Adverse Reactions Following Vaccination: A Pilot Study using NMR Metabolomics and Multivariate Analysis*. Poster presented at the Military Health System Research Symposium, Kissimmee, FL.
15. Stewart, D.A., J. Winnike, S.L. McRitchie, W.W. Pathmasiri, and S.J. Sumner. 2015. *Triple Negative Breast Cancer Biomarker Identification for Drug Development*. Poster presented at Metabolomics Society Annual Meeting, San Francisco, CA.
16. Li, J., P. Stewart, K. Fisher, S. Dhungana, D.A. Stewart, S.J. Sumner, E. Welsh, S. Eschrich, A. Chen, and E. Haura. 2015. *Proteo-metabolomic Dissection of Small Cell Lung Cancer Using Activity Based Protein Profiling and Metabolomics Profiling*. Presented at the Annual Meeting of the Metabolomics Society, San Francisco, CA.
17. Stewart, D.A., J. Winnike, S.L. McRitchie, W.W. Pathmasiri, and S.J. Sumner. 2015. *Triple Negative Breast Cancer: Metabolomics and Flux Analysis to Identify Targets for Drug Development*. Poster presented at the Annual Meeting of the American Association for Cancer Research, Philadelphia, PA.
18. Stewart, P.A., J. Li, K.J. Fisher, S. Dhungana, D. Stewart, S. Sumner, E. Gardner, J. Poirier, C.M. Rudin, E.A. Welsh, S. Eschrich, A. Chen, and E.B. Haura. 2015. *Integrating Proteomics and Metabolomics Characterizes Active Pathways and Potential Drug Targets in Small Cell Lung Cancer*. Poster presented at the Annual Meeting of the American Association for Cancer Research, Philadelphia, PA.
19. Stewart, D.A. 2015. *Metabolomics in Cancer Research*. Presented at the Omics in the Characterization, Classification and Treatment of Autoimmune Diseases and Cancer Conference, at NIH, Bethesda, MD.
20. Mortensen, N.P., D.A. Stewart, W.W. Pathmasiri, K.A. Mercier, S.L. McRitchie, T. Cavallo, T.R. Fennell, and S.J. Sumner. 2014. *Metabolomics and Darkfield Microscopy of Mammalian Cells from Microfluidic and Transwell Systems*. Poster presented at National Institutes of Health Common Fund Metabolomics Consortium Meeting, Research Triangle Park, NC.
21. Stewart, D.A. 2013. *Characterizing Breast Cancer Subtype-Specific Responses to Macrophages*. Poster presented to the American Association for Cancer Research, Washington, DC. April.
22. Stewart, D.A. 2011. *Basal-like Breast Cancer Cells Induce Phenotypic and Genomic Changes in Macrophages in vitro.* Poster presented to the Breast Cancer and the Environment Research Program, Cincinnati, OH.

23. Stewart, D.A. 2011. *Basal-like Breast Cancer Microenvironments Induce Phenotypic and Genomic Differentiation in THP-1 Cells.* Poster presented at the Department of Pathology and Laboratory Medicine Annual Research Symposium, Chapel Hill, NC.
24. Stewart, D.A. 2010. *THP-1 Cells Respond to a Heterotypic Stromal Coculture System by Differentiating into M2-tropic Macrophages.* Poster presented at the Department of Pathology and Laboratory Medicine Annual Research Symposium, Chapel Hill, NC.
25. Stewart, D.A. 2004. *Efficacy of Novel Sodium Channel Blockers in Human Breast Cancer Cells*. Poster presented to the American Association for Cancer Research, Orlando, FL.
26. Stewart, D.A. 2001. Presented a talk on *Psoralen-modified, clamp-forming antisense oligonucleotides reduce cellular c-Myc protein expression and B16-F0 proliferation*. Presented to the National Organization for the Professional Advancement of Black Chemists and Chemical Engineers, Baltimore, MD.
27. Stewart, D.A. 1999. *The Efficacy of Clamp-Forming Antisense Oligonucleotides on c-Myc Oncogene Expression in a Mouse Melanoma Model*. Poster presented to the American Association for Cancer Research, Philadelphia, PA.
28. Stewart, D.A. 1999. Presented a talk on the *efficacy of clamp-forming antisense oligonucleotides on c-Myc oncogene expression in a mouse melanoma model*. Presented to the National Organization for the Professional Advancement of Black Chemists and Chemical Engineers, San Diego, CA.
29. Stewart, D.A. 1996. *Synthesis of Adenine Analogue Nucleosides via Amino-Selenation*. Presented to the National Organization for the Professional Advancement of Black Chemists and Chemical Engineers, Detroit, MI.

Research Support

3R35CA197627-03S1 Delisha Stewart (Principal Investigator [PI]) 4/2018–7/2020
Funding Agency: National Cancer Institute (NCI)
Title: Higher Dietary Carbohydrates Detrimentally Impact Obesity-Associated Breast Cancer Chemoresistance
FAIN: 3R35CA197627 (Hursting, PI: Breaking the Obesity-Cancer Link: New Targets and Strategies)
Role: PI

ID#T2017-015 Victoria Bae-Jump (PI) 11/2017–11/2020
Funding Agency: V Foundation Translational Research Grant
Title: Metabolic and Molecular Biomarkers of Metformin Response in Obesity-driven Endometrial Cancer
Role: Co-Investigator

1R37CA226969-01 Victoria Bae-Jump (PI) 3/2018-2/2023
Funding Agency: National Cancer Institute (NCI)
Title: Obesity-driven Metabolic and Molecular Biomarkers of Metformin Response in Endometrial Cancer
Role: Co-Investigator

1R21DA039315-01A1 Julie Marusich (PI) 9/2017–8/2019
Funding Agency: National Institute on Drug Abuse (NIDA)
Title: Neurochemical and Inflammatory Dysregulation During Synthetic Cathinone Self-Administration
Role: UNC-CH PI

1R21CA235029-01 Abbie E. Smith-Ryan, Victoria Bae-Jump (MPIs) 1/2019-12/2020
Funding Agency: NCI
Title: Interval Exercise Training As A Therapy For Endometrial Cancer
Role: Co-Investigator

U2CES026544-01 Tim Fennell (PI) 9/2017–8/2019
Funding Agency: National Institute of Environmental Health Sciences (NIEHS)
Title: Children's Health Exposure Analysis Resource (CHEAR) Hub
Role: Investigator

1U24DK097193-01 Susan Sumner (PI) 9/2017–8/2019
Funding Agency: NIH Common Fund; administered through the National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK)
Title: Eastern Regional Comprehensive Metabolomics Resource Core at UNC-CH Nutrition Research Institute (ERCMRC)
Role: Investigator

Grants submitted

RFA-ES-18-012 Susan Sumner (MPI) *Submitted* 11/2018
Funding Agency: NIEHS
Title: Human Health Exposure Analysis Resource (HHEAR): Untargeted Exposure Analysis Laboratories
Role: Investigator
Decision: Pending

R01 Provocative Question Victoria Bae-Jump (PI) *Submitted* 10/2018
Funding Agency: National Institutes of Health (NIH)
Title: Obesity-driven Metabolic and Molecular Biomarkers of Metformin Response in Endometrial Cancer (RAMSeS # 19-2621)
Role: Co-Investigator
Decision: Pending

NRI Faculty Pilot Grants Delisha Stewart (PI) *Submitted* 10/2017
Revision on 1/2018
Funding Agency: UNC-CH Nutrition Research Institute
Title: Higher Dietary Carbohydrates Detrimentally Impact Obesity-Associated Breast Cancer Chemoresistance
Role: PI
Decision: Not funded

NORC Pilot & Feasibility Program **Delisha Stewart (PI)** ***Pre-proposal submitted* 10/2017**
***Full proposal* 1/2018**
Funding Agency: UNC-CH Nutrition Obesity Research Center
Title: High Simple Carbohydrate Intake Detrimentally Impacts Obesity-Associated Breast Cancer Chemoresistance
Role: PI
Decision: Pre-proposal selected to move forward for full submission. Full proposal not funded.

National Vaccine Program Office **Delisha Stewart (PI)** ***Submitted* 3/2017**
Funding Agency: Department of Health and Human Services
Title: Metabolomics: biomarkers of adverse events following immunization
Role: PI
Decision: Application was scored and approved for funding in 7/2017, but was not awarded due to insufficient programmatic funds.

Completed Support

Brody Brothers Grant **Gregory Kearney (PI)** **4/2017–8/2018**
Funding Agency: Brody School of Medicine, East Carolina University
Title: Environmental Asthma Among Rural, High Risk and Underserved Children in Eastern NC
Role: UNC-CH PI

1U24DK097193-01 **Susan Sumner (PI)** **9/2012–8/2017**
Funding Agency: NIH Common Fund; administered through the National Institute of Diabetes and Digestive and Kidney Diseases
Title: NIH Eastern Regional Comprehensive Metabolomics Resource Core at RTI International (RTI RCMRC, 2012-2017)
Role: Postdoctoral fellow (2013); Research Biologist (2014 to 2017)

U01 ES019472 **Melissa Troester (PI)** **7/2012–1/2013**
Funding Agency: National Institute of Environmental Health Sciences (NIEHS)
Title: Pregnancy, Obesogenic Environments, and Basal-like Breast Cancer
Role: Postdoctoral fellow

5T32ES0070017 **Department of Pathology & Laboratory Medicine** **7/2011–6/2012**
Funding Agency: NIEHS
Title: Environmental Pathology Training Grant
Role: Postdoctoral fellow

Mentoring

2018-2019. University of North Carolina at Chapel Hill, Nutrition Research Institute, Kannapolis, NC.
BSPH undergraduate student laboratory mentoring (December 2018- to date). Serving as primary faculty mentor (Sumner, co-mentor) for a current sophomore undergraduate student who will be working on my funded project to determine macronutrient roles in obesity-associated breast cancer chemoresistance. Will train student in workflows for metabolomics and inflammatory cytokine profiling; as well as study design management, data analysis and data integration.

2018. University of North Carolina at Chapel Hill, Nutrition Research Institute, Kannapolis, NC.
High School student laboratory mentoring (Jun-Aug 2018). Supervised a high school eleventh grader for an 8-week summer internship to learn basic concepts of metabolomics workflows. Worked on an

actual study project related to identifying metabolic biomarkers for perturbations in a diet-induced obesity and calorie restriction genetically diverse mouse model using the Collaborative Cross Model. Mentorship continues through providing college admissions recommendation letters and working to publish the results in a journal for high school student research.

2017-2019. University of North Carolina at Chapel Hill, Nutrition Research Institute, Kannapolis, NC.
Supports ERCMRC by training staff new to NRI on ERCMRC administrative and project management workflows and safety training compliance. Includes two postdoctoral fellows and NIDA Invest Fellow and 2 research staff members.

2010 to 2012. University of North Carolina at Chapel Hill, Chapel Hill, NC.
Graduate student academic coaching (January to June 2012). Serve as a mentor for a University of North Carolina at Chapel Hill Graduate student. The student was sponsored by the Training Initiatives in Biomedical & Biological Sciences and Academic and Career Excellence Programs funded by the university's Offices of Graduate Education and Postdoctoral Affairs. Interacted with the student weekly to coach her through the steps needed to prepare a successful preliminary proposal for candidacy. Specifically, assisted with reading and critically analyzing data in the literature, and writing exercises as she is an ESL student.

Undergraduate laboratory mentoring (2010 to 2011). Supervised an undergraduate Biology major in all experiments conducted to study the interactions between macrophages and different breast cancer subtype cell lines. This research project resulted in a university award, a presentation of the work at a National Undergraduate Research Conference, and contributing authorship on a related manuscript.

2002 to 2004. University of Delaware, Newark, DE.
Managerial laboratory mentoring. During the first postdoctoral fellowship, served as Laboratory Manager and assisted with hiring of personnel and training all new technicians, undergraduates, and graduate students in Good Laboratory Practices and techniques. Also mentored students on specific projects focusing on prostate cancer etiology and with preparing presentations and manuscripts.

1997 to 1999. University of Alabama at Birmingham, Birmingham, AL.
Mentoring of undergraduate and high school students during summer research. As a graduate student, I had the opportunity to mentor undergraduate science majors at the University of Alabama at Birmingham and high school students from local public schools in Birmingham, AL, who wanted research experience. Trained the students in basic laboratory techniques, and they assisted with experiments specific to my Ph.D. dissertation research project.

Teaching and Course Development

2019	Lecturer for NUTR 400
2018-2019	Grader for NUTR 600
2018	Participated in development of new SPH course Biology & Public Health
2018	Participated in development of new SPH course Public Health Systems & Solutions
2018	Lecturer for NUTR 845 (3 classes)
2017-2018	Guest lecturer for Skype-based learning on NMR metabolomics data processing and analysis, University of Alabama at Birmingham (Barnes)
2017	Guest lecturer ("Metabolomics 101"), Duke University (Kwatra)
2017	Instructor, NIH Common Fund-sponsored metabolomics workshop at University of Alabama at Birmingham (received scores of 4-5/5 from attendee evaluations)

Continuing Education

National Cancer Institute (NCI) Center to Reduce Cancer Health Disparities (CRCHD), Continuous Umbrella of Research Experiences (CURE)-fundees Professional Development Workshop and Mock Review, NIH Natcher Conference Center, Bethesda, MD, 2019.

Evidence-Based Interventions workshop, sponsored by the North Carolina Translational and Clinical Sciences Institute (NC TraCS), Raleigh, NC, 2012.

Participatory Research Approaches workshop, sponsored by NC TraCS, Raleigh, NC, 2011.

Community Based Participatory Research workshop, sponsored by NC TraCS, Raleigh, NC, 2010.

Writing from the Reader's Perspective workshop, hosted by Dr. George Gopen, Duke University, Chapel Hill, NC, 2010.

Professional Service and Committees

2019-present	UNC-NRI Faculty GROW committee
2018- present	UNC-CH Department of Nutrition Advancement Committee
2017- present	UNC NRI Faculty Search Committee
2018-present	Frontiers Genetics (Nutrigenomics), journal reviewer
2018-present	International Journal of Molecular Sciences, journal reviewer
2018	USDA NP 107 Panel 4. Immunity and Animal Models, study section reviewer
2018	Chancellor's Science Scholars Program - Diversity in STEM Conference poster judge

Professional Memberships

American Association for Cancer Research, 1998 to 2005 and 2012 to date.

Metabolomics Society, 2012 to date.

Metabolomics Association of North America, 2017 to date.

Breast Cancer and the Environment Research Program, 2011 to 2014.

American Chemical Society, 1996 to 2005.

National Organization for the Professional Advancement of Black Chemists and Chemical Engineers, 1996 to 2005.

Honors and Awards

RTI Annual Awards, 2013, 2014 and 2016.

Minority Scholar in Cancer Research Award, American Association for Cancer Research, 2013.

Environmental Pathology Training Grant Postdoctoral Fellowship, University of North Carolina at Chapel Hill, 2010 to 2011.

True Grit Award, City of Dayton Wastewater Treatment Plant, 2009.

United Negro College Fund–Merck Postdoctoral Science Research Fellowship Award, 2003 to 2004.

NIH Minority Supplement Postdoctoral Fellowship Award (declined acceptance), 2003 to 2004.

Golden Key National Honor Society, 1996 to 2004.

Departmental "In the Spotlight" Recognition, University of Delaware, 2004.

Comprehensive Minority Faculty Student Development Fellowship, University of Alabama at Birmingham, 1996 to 2001.

Presidential Scholars Achievement Award, University of Alabama at Birmingham, 2000.

W.S. McIntosh Memorial Scholarship and City of Dayton Internship, 1992 to 1996.

Undergraduate Scholastic Research Award, National Organization for the Professional Advancement of Black Chemists and Chemical Engineers and the Rohm & Haas Company 1996.

America–Israel Friendship League Youth Ambassador, Ohio Delegation, 1991.