Jessie Baldwin Hoffman
Curriculum Vitae

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Education

The University of Kentucky, Lexington, KY
Doctor of Philosophy in Nutritional Sciences; Cumulative GPA: 3.97
Dissertation: PCB Disruption of Gut and Host Health: Implications of Prebiotic Nutritional Intervention
Major advisor: Bernhard Hennig

The University of North Carolina at Greensboro, Greensboro, NC
Master of Science in Nutrition (May 2015); Cumulative GPA: 4.0
Thesis: Impact of California Table Grapes on Systemic Inflammation, Insulin Resistance, and Hepatic Steatosis in Mice Fed an American-Type Diet
Major advisor: Michael McIntosh

Newberry College, Newberry, SC
Bachelor of Science in Biology (May 2013); Cumulative GPA: 4.0
Newberry College Trustees Scholar

Publications

Hoffman, J.B., Petriello, M.C., Vsevolozhskaya, O., Morris, A.J., Hennig, B. 2019 Prebiotic (inulin) consumption attenuates PCB 126-induced inflammation and disruption of gut microbiota host metabolism. In preparation

Hoffman, J.B., Flythe, M., Hennig, B; 2018. Environmental pollutant-mediated disruption of gut microbial metabolism of the prebiotic inulin. Anaerobe.

Hoffman, J.B.,* Petriello, M.C.,* Vsevolozhskaya, O., Morris, A.J., Hennig, B. 2018 Dioxin-like PCB 126 increases intestinal inflammation and disrupts gut microbiota and metabolic homeostasis. Environ Pollut. doi:/10.1016/j.envpol.2018.07.039

Petriello, M.C., Brandon, J.A., **Hoffman, J.B.**, Wang, C., Tripathi, H., Abdel-Latif, A., Ye, X., Li, X., Yang, L., Lee, E., Barney, J., Wahlang, B., Hennig, B., Morris, A.J. 2017. Dioxin-like PCB 126 increases systemic inflammation and accelerates atherosclerosis in lean LDL receptor deficient mice. Toxicol Sci. doi: 10.1093/toxsci/kfx27

Wahlang, B., Barney, J., Thompson, B., Wang, C., Hamad, OM., **Hoffman, J.B**., Petriello, M.C., Hennig, B; 2017. PCB126 exposure increases risk for peripheral vascular diseases in a liver injury mouse model; Toxicol Sci. doi: 10.1093/toxsci/kfx180

Hoffman J.B., Hennig, B. 2017. Protective influence of healthful nutrition on mechanisms of environmental pollutant toxicity and disease risks. Ann NY Acad Sci doi: 10.1111/nyas.13365Wahlang, B., Perkins, JT,

Petriello, M.C., **Hoffman, J.B**., Hennig, B; 2017. A compromised liver alters polychlorinated biphenyl-mediated toxicity; Toxicology doi: 10.1016/j.tox.2017.02.001.

Hoffman J.B., Petriello, M.C., Hennig, B. 2017. Impact of nutrition on pollutant toxicity: an update with new insights into epigenetic regulation. Rev Environ Health. doi: 10.1515/reveh-2016-0041.

Petriello, M.C., **Hoffman, J.B.**, Morris, A.J., Hennig, B. 2016. Emerging roles of xenobiotic detoxification enzymes in metabolic diseases. Rev Environ Health. Nov; doi: 10.1515/reveh-2016-0050 PMID: 27837601

Petriello, M.C., **Hoffman, J.B.**, Sunkara, M., Wahlang, B., Perkins, J.T., Morris, A.J., Hennig, B. 2016 Dioxin-like pollutants increase hepatic flavin containing monooxygenase (FMO3) expression to promote synthesis of the pro-atherogenic nutrient biomarker trimethylamine N-oxide from dietary precursors. J. Nutr. Biochem. Apr 1;(33):145-153. PMID: 27155921

Hoffman, J.B.,* Collins, B.,* Martinez, K., Grace, M., Lila, M.A., Cockrell, C., Nadimpalli, A., Chang, E., Chuang, C.C., Zhong, W., Cooney, P., Hopkins, R., McIntosh, M.K. 2016. An extractable polyphenol-rich fraction obtained from table grapes decreases adiposity, insulin resistance, and markers of inflammation in high-fat fed C57BL/6J mice. J. Nutr. Biochem. May; 31: 150-65. PMID: 27133434

Collins, B., **Baldwin, J.,** Martinez, K, Lila, MA., McIntosh, MK. 2016. Grapes and Gastrointestinal Health: Implications with Intestinal and Systemic Diseases. In: Pezzuto, JM, editor. Grapes and Health. Springer; p.119-138. NLB ID: 101686657

Baldwin, J.,* Collins, B.,* Wolf, P.G., Martinez, K., Shen, W., Chuang, C.C., Zhong, W., Cooney, P., Cockrell, C., Chang, E., Gaskins, H.R., McIntosh, M.K. 2016. Table grape consumption reduces adipostiy and markers of hepatic lipogenesis and alters gut microbiota in butter fat-fed mice. J. Nutr. Biochem. Jan; 27: 123-35. PMID: 26423887.

Shen, W., **Baldwin, J.,** Collins, B., Hixson, L., Lee, K.T., Herberg, T., Starnes, J., Chuang, C.C., Reid, T., Gupta, S., McIntosh, M. 2015. Low level of trans-10, cis-12 conjugated linoleic acid decreases adiposity and increases browning independent of inflammatory signaling in overweight Sv129 mice. J. Nutr. Biochem. Jun;26(6):616-25. PMID: 25801353

**Indicates equal contribution to manuscript (both primary authors)*

Accepted Abstracts and Presentations

Food & Nutrition Conference & Expo (FNCE) 2018; in Washington, DC (10/2018)

Hoffman, J.B., Petriello, M.C., Barney, J., Deng, P., Flythe, M., Hennig, B.
Prebiotic fiber (inulin) attenuates PCB 126-induced disruption of gut microbiota and host metabolism (Poster presentation)

Nutrition 2018; American Society of Nutrition Annual Conference in Boston, MA (06/2018)

Hoffman, J.B., Petriello, M.C., Vsevolozhskaya, O., Morris, A.J., Hennig, B.
Interactions between diets high in cholesterol and dioxin-like pollutants increase inflammation, disrupt gut microbiota, and modulate host metabolism (Poster presentation & oral presentation)
Emerging Leaders in Nutrition Science Poster Competition- 3rd place

8th Annual Barnstable Brown Obesity and Diabetes Research Day in Lexington, KY (05/2018)

Hoffman, J.B., Petriello, M.C., Vsevolozhskaya, O., Morris, A.J., Hennig, B.
Interactions between dietary cholesterol and environmental pollutants increase inflammation, disrupt gut microbiota, and modulate host metabolism (Poster presentation)
Outstanding Graduate Student Poster Presentation- 3rd place

Keystone Symposia Conference on Manipulation of the Gut Microbiota for Metabolic Health in Banff, Alberta (3/2018)

Hoffman, J., Petriello, M., Hennig, B. Dioxin-like PCB 126 disrupts gut microbiota, increases intestinal inflammation and alters host metabolism. (Poster presentation)

Superfund Research Program (SRP) 2017 Annual Meeting in Philadelphia, PA (12/2017)

Hoffman, J., Petriello, M., Hennig, B. PCB 126 disrupts gut microbiota and increases intestinal inflammation in a mouse model of atherosclerosis. (Poster presentation)

20th Annual Gill Heart Institute Cardiovascular Research Day in Lexington, KY (11/2017)

Hoffman, J., Petriello, M., Hennig, B. PCB 126 increases intestinal inflammation and disrupts gut microbiota and metabolic homeostasis. (Poster presentation)

7th Annual Barnstable Brown Obesity and Diabetes Research Day in Lexington, KY (05/2017)

Hoffman, J., Flythe, M., Hennig, B. PCB126 Exposure Modulates Gut Microbial Fermentation of the Dietary Fiber Inulin. (Poster Presentation)

Experimental Biology 2017 in Chicago, IL (04/2017)

Hoffman, J., Flythe, M., Hennig, B. PCB126 Exposure Modulates Gut Microbial Fermentation of the Dietary Fiber Inulin. (Poster Presentation)

Superfund Research Program (SRP) 2016 Annual Meeting in Durham, NC (12/2016)

Hoffman, J., Flythe, M., Hennig, B. Fecal Microbial Fermentation of the Dietary Fiber Inulin (Poster presentation)

Department of Pharmacology and Nutritional Sciences Annual Retreat (1/2017)

Hoffman, J., Hennig, B. The Role of Dietary Fiber in Modulation of Gut Health and PCB-Induced Inflammation. (Oral presentation)

19th Annual Gill Heart Institute Cardiovascular Research Day in Lexington, KY (11/2016)

Hoffman, J., Flythe, M., Hennig, B. Modulation of Gut Microbial Fermentation of Dietary Fiber by PCB126.

Outstanding Graduate Student Poster Presentation- 3rd place

11th Annual UKY Center for Clinical and Translational Science (CCTS) Spring Conference in Lexington, KY(04/2016)

Hoffman, J., Petriello, M., Hennig, B. Butryate modulates Cav-1 and its binding partner AhR, leading to differential Cyp1a1 and Cyp1b1 gene expression in vascular endothelial cells.

Experimental Biology 2016 in San Diego, CA (04/2016)

Hoffman, J., Petriello, M., Hennig, B. Butryate modulates Cav-1 and its binding partner AhR, leading to differential Cyp1a1 and Cyp1b1 gene expression in vascular endothelial cells.

Superfund Research Program (SRP) 2015 Annual Meeting in San Juan, Puerto Rico (11/2015)

Hoffman, J., Petriello, M., Collins, B., McIntosh, M., Hennig, B. Table grape consumption reduces body fat accumulation, hepatic steatosis, and inflammation in mice high fat fed mice: a potential nutritional approach for PCB protection. (Poster presentation)

Ohio Valley Society of Toxicology (OVSOT) 2015 Annual Meeting in Highland Heights, KY (11/2015)

Hoffman, J., Petriello, M., Collins, B., McIntosh, M., Hennig, B. Table grape feeding in high-fat fed mice attenuates body fat gain, hepatic steatosis, and systemic inflammation: a potential nutritional approach to PCB protection. (Poster presentation)

Experimental Biology 2015 in Boston, MA (03/2015)

Baldwin, J., Collins, B., Wolfe, P., Shen, S., Chuang, C., Zhong, W., Cooney, P., Gaskins, H., McIntosh, M. 2014. California table grape consumption reduces adiposity, hepatic triglycerides, lipogenic gene expression, and abundance of sulfidogenic bacteria in mice fed butter fat. (Poster presentation)

Newberry College REMAST Poster Session (09/2011)

Presented on internship experience with traditional and non-traditional classroom environments.

Community Presentations and Podcasts

Sports Nutrition Seminar for Lexington Baseball/Softball (11/2018)
Hoffman, J. Fueling for exercise and competition (Invited speaker; oral presentation)

RD Real Talk Podcast (10/2018)
Hoffman, J. One of the keywords should have been weight cycling.
https://itunes.apple.com/us/podcast/one-of-the-keywords-should-have-been-weight-cycling/id1208568777?i=1000421145975&mt=2

Nutrition Matters Podcast Episode 131 (8/2018)
Hoffman, J. Why #nuance matters in conversations about gut health and nutrition science.
https://www.positive-nutrition.com/single-post/2018/08/29/130-nuancematters

Marion County Extension Office Series "Hot Women and Health" Richmond, KY (3/2018)
Hoffman, J. Healthy Gut, Healthy You: tips for improving gut health.

Lexington Senior Center Nutrition Education and Cooking Demo (08/2017)
Hoffman, J. The role of dietary fiber in overall health and wellbeing

Common Good Lexington Invited Speaker (05/2017)
Hoffman, J. Food preparation and healthy meal ideas for busy families.

Fighting with Food Seminar/Workshop at the University of Kentucky (09/2016)
Hoffman, J. Nutritional modulation of pollutant toxicity: the role of the gut microbiota.

Fighting with Food Seminar at the University of Miami in Ohio (04/2016)
Hoffman, J. Nutritional modulation of pollutant toxicity: current evidence and the role of the gut microbiota.

Work Experience

Post-Doctoral Scholar
University of Kentucky (01/2019- present)
PI: Dr. Bernhard Hennig
Post-doctoral fellow with the University of Kentucky Superfund Research Center.

Research Assistant
University of Kentucky (07/2015- 12/2018)
PI: Dr. Bernhard Hennig
Graduate student in the Department of Pharmacology and Nutritional Sciences.

Positive Nutrition™ Course Instructor
Positive Nutrition™; Paige Smathers, RD (12/2017- Present)
Participate in curriculum, book, presentation, and course development focused on nutritional science education for a public audience.

Research Assistant
University of North Carolina at Greensboro (08/2013 – 05/2015)
PI: Dr. Michael McIntosh
Designed, implemented, and analyzed experiments focusing on reducing of metabolic syndrome and associated complications with consumption of nutrient rich table grapes.

Teaching Assistant

University of North Carolina at Greensboro (08/2013 – 05/2015)
Assisted in undergraduate nutrition courses in grading, lecturing, and tutoring.
Courses: Introduction to Nutrition, Nutritional Biochemistry, Advanced Nutrition

Academic Tutor

Newberry College, Newberry, SC (08/2011 - 05/2013)
Assisted students in their studies in various science courses.

Riverbanks Zoo Seasonal Camp Counselor

Riverbanks Zoo and Botanical Gardens, Columbia, SC (12/2011 – 4/2013)
Educated and supervised groups of 20-30 campers ages 6-7.
Handled various animal and insect species used for educational programs.

REMAST (Recruit and Engage Math and Science Teachers) Internship

Newberry College, Newberry, SC (05/2011 - 07/2011)
Interned in a high-school science classroom and non-traditional educational settings.

Awards/Honors

Graduate Student of the Year- Department of Pharmacology and Nutritional Sciences; University of Kentucky (2018)

Emerging Leaders in Nutrition Science Poster Winner- 3rd place. Nutrition 2018; American Society of Nutrition Annual Conference in Boston, MA (2018)

Outstanding Graduate Student Poster Presentation- 3rd place. 8th Annual Barnstable Brown Obesity and Diabetes Research Day in Lexington, KY (2018)

Outstanding Graduate Student Poster Presentation- 3rd place. 19th Annual Gill Heart Institute Cardiovascular Research Day in Lexington, KY (2018)

Student Representative of American Society for Nutrition's Dietary Bioactive Components (nationally elected) 2017-2018

T32 Predoctoral Scholar; NIH Training Grant on Metabolic Disease (NIH T32 DK007778) (2015-2017)

Jefferson Pilot Corporation Fellowship (2014)

UNCG Research Assistantship (2013-present)

Greensboro Graduate Scholar Award (2013, 2014)

Who's Who Among Students in American Colleges and Universities (2012)

SAC Women's Cross Country All-Region First Team (2012)

Summerland Honors Program (2009-13)

Dean's List (2009-12)

Volunteer Experience

Better Bites Volunteer 2016-Present
Participated in leading various community nutrition activities for children

Academy of Nutrition and Dietetics Student Liaison 2017-2018
Selected as student liaison for University of Kentucky

American Society of Nutrition Student Representative 2017-2018
Elected student representative of the Dietary Bioactive Components research interest section

UK Food Connection Grant Leader 2017-2018
Participated in writing and implementation of grant titled *"Fresh Stop Markets' Youth Food Justice Leadership to Support Child/Family Food Systems Engagement"*

National Eating Disorders Association- Online Forum Moderator 2017-2018
Moderated posts on online forums regarding support for individuals and families dealing with the struggles of eating disorders and recovery

UK Performance Nutrition Volunteer 2017-2018
Aided in the nutritional support of UK student athletes

FoodChainLex "Cook. Eat. Grow" Instructor Fall 2017-Spring 2018
Led nutrition and cooking hands-on lesson to 4th and 5th graders from three local elementary schools

National Eating Disorders Association (NEDA) Walk Participant Fall 2017, 2018
Participated in and raised money for a walk supporting eating disorder

Common Good Cooking Club Volunteer Spring 2017
Taught nutrition and cooking lessons to K-12 students

Edyth J. Hayes Middle School Health Fair Volunteer March 2017
Actively educated students on sugar sweetened beverages

SeedLeaf Community Gardens Volunteer Fall 2016
Helped maintain and clean up local community gardens

Fighting with Food Workshop and Seminar Series Leader Spring 2016
Educated middle and high school teachers on how to better educate their students on topics related to nutrition and toxicology

Cards for Hospitalized Kids November 2016, 2017, 2018
Created handmade Christmas cards for hospitalized children

NSPS Happy Healthy Halloween October 2016, 2017, 2018
Encouraged healthy treats by passing out fruits at the University of Kentucky Hospital and Clinic

Walk to End Alzheimer's Participant August 2016, 2017
Raised money and participated in the walk as part of a student organization.

Professional Affiliations

Academy of Nutrition and Dietetics (Student member 2016-Present)

American Society for Nutrition (Student member 2013-Present)

International Society for Sports Nutrition (Editorial board member 2018- present)

International Association of Eating Disorders Professionals (Student member 2017-present)

Society of Toxicology (Student member 2015-Present)

AAAS/ Science Program of Excellence in Science (Student member 2016- present)

Blue Key Honor Society (President 2012-13)

Chi Beta Phi, National Scientific Honorary (Public Relations Chair 2012-13)

Sigma Sigma Sigma Sorority (Public Relations Chair 2011-12)

Research Skills

- 16S rRNA sequencing and analysis of the gut microbiota
- Microbial isolation and culture from animal samples
- Microbial metabolite analysis and quantification from dietary components.
- Cell culture techniques (including culture of primary human umbilical vein endothelial cells, human umbilical vein endothelial cells (HUVEC) based cell lines, and LS174T intestinal goblet cell line)
- Animal handling, treatment, euthanasia and dissection
- RNA extraction and real time PCR, both in cell cultures and animal tissues
- Protein extraction and Western Blot, both in cell cultures and animal tissues
- Liver-based enzymatic assays
- Cell culture treatment with polyphenols
- DEXA scanning
- Glucose tolerance testing
- ELISA insulin and cytokine assays
- Persistent organic pollutant extraction from plasma and tissues

Workshops and Professional Development

Biostats and Big Data Workshop- Superfund Research Center (July 2015)

Communication Training Workshop- Superfund Research Center (August 2015)

Analytical Workshop- Superfund Research Center (September 2015)

Rethinking Scientific Presentations: the Assertion-Evidence Approach (November 2015)

Nutrition and Superfund Chemical Toxicity University of Kentucky Superfund Research Program Center (August 2016)

"An overview of epidemiological, experimental, and mechanistic studies that link polychlorinated biphenyls and cardiovascular disease" Webinar- Superfund Research Program (February 2016)

"How to Graduate & How to Get a Job" Workshop- Nutritional Sciences and Pharmacology Student Organization (April 2016)

"The Microbiome Webinar Series" American Society of Nutrition (May-June 2016)

“The National Nutrition Research Roadmap: Basic Science and Epidemiology of Nutrition”; Webinar, American Society of Nutrition (November 2016)

“The National Nutrition Research Roadmap Dietary Intake and the Food Environment” Webinar, American Society of Nutrition (January 2017)

“The National Nutrition Research Roadmap: Behavioral Science of Eating Habits”; Webinar, American Society of Nutrition (February 2017)

“Professional Development Workshop- Transferable Skills”; Office of Biomedical Education; University of Kentucky (February 2017)

UK Superfund Statistics Workshop; Superfund Research Center; University of Kentucky (August 2017)

“Bon Appetit: Including Culinary Professionals in the Treatment of Anorexia Nervosa”; Webinar, IAEDP (October 2017)

“Nutrition Therapy for the Addicted Brain” Webinar; IAEDP (November 2017)

“Tailored exchange: Finding a Consistent Method for the Nutritional Treatment of Eating Disorders” Webinar; IAEDP (December 2017)

Mindful Eating Workshop; Positive Nutrition™; Salt Lake City, UT (April 2018)

“Gut Microbiome, Diet, and Human Health”; Webinar, Academy of Nutrition and Dietetics (June 2018)