

Joshua Neilson Bostic

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Education

PhD Student, Agricultural Soil Science **Expected March 2019**

Faculty of Agricultural Sciences, Georg-August-Universität Göttingen, Göttingen, Germany

Working Dissertation Title: "Disentangling de-novo synthesis, recycling and transformation of n-alkyl lipids in soils by combining position-specific ^{13}C labeling with fragment-specific ^{13}C analysis"

M.S. Human Nutrition, Foods and Exercise **July 2015**

College of Agriculture & Life Sciences, Virginia Tech, Blacksburg, VA

Thesis Title: "Stable Isotope Variability in the American Food Supply: Implications for Dietary Reconstruction Applications"

B.S. Human Nutrition, Foods and Exercise, *summa cum laude* **May 2012**

College of Agriculture & Life Sciences, Virginia Tech, Blacksburg, VA

Research Experience

PhD Researcher **January 2016-Present**

Prof. Dr. Yakov Kuzyakov, Department of Agricultural Soil Science, Georg-August-Universität Göttingen

- Applying stable isotope labeling methods to trace nutrient cycling in soil microbial metabolism.

Research Technician **May 2013-December 2015**

Dr. Hope Jahren's Lab, Department of Geology and Geophysics, University of Hawaii at Manoa

- Support of indoor chamber growth experiments aimed at assessing how atmospheric CO_2 concentrations impact the stable carbon isotope composition of C3 and C4 terrestrial plants
- Developed a food stable carbon and nitrogen isotope database for Standard Reference in collaboration with the USDA's Nutrient Data Lab
- Oversaw day-to-day operation and maintenance of Isotope Ratio Mass Spectrometers, managed purchasing of supplies, and supervised undergraduate assistants

Graduate Research Assistant **May 2012-May 2013**

Dr. Susan Hutson's Lab, Department of Human Nutrition, Foods and Exercise, Virginia Tech

- Developed an in vitro assay for assessing the effectiveness of phenylbutyrate therapy in Maple Syrup Urine Disease (MSUD) using radioactive enzyme assays and Western Blot
- Analyzed the mechanisms by which phenylbutyrate affects BCAA catabolic enzyme activity

Undergraduate Research Assistant **April 2011-May 2012**

Dr. Susan Hutson's Lab, Department of Human Nutrition, Foods and Exercise, Virginia Tech

- Aided development of ^{14}C -labeled leucine oxidation assay for determining effects of mTOR inhibitors on BCAA catabolic enzyme expression and activity in mouse lymphoma cells
- Measured differential BCATc expression and phosphorylation in response to rapamycin treatment via Western Blot

Publications

J.N. Bostic, S.J. Palafox, M.E. Rottmueller and A.H. Jahren. 2015. Effect of baking and fermentation on the stable carbon and nitrogen isotope ratios of grain-based food. *Rapid Communications in Mass Spectrometry*, 29(10): 937-947.

V.E. Hedrick, J.M. Zoeller, A.H. Jahren, **J.N. Bostic** and B.M. Davy. 2015. A dual-carbon-and-nitrogen stable isotope ratio model is not superior to a single-carbon stable isotope ratio model for predicting added sugar intake in Southwest Virginian adults. *The Journal of Nutrition*, DOI: 10.3945/jn.115.211011.

A.H. Jahren, **J.N. Bostic** and B.A. Davy. 2014 (Invited Review). The potential for a carbon stable isotope biomarker of dietary sugar intake. *Journal of Analytical Atomic Spectrometry*, 29(5): 795-816.

Research Presentations

- Kauai Sustainability Hydroponics Workshop Invited Speaker** **February 2015**
Grand Hyatt Kauai/Kauai Community College, Poipu, Hawaii
Title: "School Gardens and Sustainable Nutrition"
- Department of Food, Nutrition, and Animal Science Seminar Invited Speaker** **April 2013**
University of Hawaii at Manoa, Honolulu, Hawaii
Title: "A Stable Isotope Biomarker of Added Sugar Intake"
- National Collegiate Research Conference Plenary Speaker** **February 2012**
Harvard College, Cambridge, Mass.
Title: "Interaction Between Leucine Metabolism and Mammalian Target of Rapamycin (mTOR) Signaling"

Teaching

- Assistant Instructor**
Department of Geology and Geophysics, University of Hawaii at Manoa
GG 102: Introduction to Global Change **Fall 2013-2014**
Section Title: "Climate Change and the Obesity Epidemic"
- Graduate/Undergraduate Teaching Assistant**
College of Agriculture & Life Sciences, Virginia Tech
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| HNFE 4174: Nutrition and Physical Performance | Spring 2013 |
| HNFE 3026: Metabolic Nutrition: Vitamin & Mineral Metabolism | Spring 2013 |
| HNFE 2014: Nutrition Across the Lifespan | Fall 2012 |
| HNFE 2984: Undergraduate Journal Club | Spring 2012-2013 |
| HNFE 1004: Foods and Nutrition | Fall 2010 |

Community Service

- Outreach Coordinator, STEM Pre-Academy Program** **March 2014-November 2015**
Office of the Vice President for Research and Innovation, University of Hawaii Manoa, Honolulu, HI
- Developed a multi media outreach activity to demonstrate the nutritional and environmental benefits of consuming local fruits and vegetables for use in Hawaii public middle schools
 - Conducted interactive seminar's and lab tours with local middle school classrooms
 - Helped students with science fair project development and implementation of scientific method
- Elementary School Nutrition Outreach Participant** **September 2009-March 2012**
VT Fitness and Nutrition Club "Happy Feet" Program, Blacksburg, VA
- Walked with students at a local elementary school 1-2 mornings per week during the fall and spring to promote physical activity and discuss healthy eating.
- Board of Directors, HNFE 50th Anniversary 5K** **December 2010-April 2011**
Department of Human Nutrition, Foods and Exercise, Virginia Tech, Blacksburg, VA
- Coordinated student volunteers and developed a local advertising campaign
 - Designed new 5K course and delegated race day course set-up and organization