

John Sterrett

Updated January 25, 2022

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Research interests Gut microbiota, gut-brain axis, multi-omics integration, multivariate statistics, immunology, neuroscience

Education **University of Colorado at Boulder (CUB)** Boulder, CO
PhD in Integrative Physiology, August 2020 – Present
Interdisciplinary Quantitative Biology (IQ Bio) Certificate Program
Lab rotations: Dr. Cathy Lozupone, Dr. Noah Fierer, Dr. Nichole Reisdorph
Mentor: Dr. Christopher Lowry GPA: 4.0.

East Tennessee State University (ETSU) Johnson City, TN
BS in Nutrition August 2016 – May 2020
Mentor: Dr. William A Clark GPA: 4.0

Selected coursework (Graduate)

- CSCI 6118 Software Engineering for Scientists
- EBIO 5460 Applications of Shotgun Metagenomics in Microbial Ecology
- CSCI 5423 Biologically-Inspired Multi-Agent Systems
- IPHY 5800 Advanced Statistics and Research Methods in Integrative Physiology

Selected coursework (Undergraduate)

- CSCI 2700 Data Structures
- NTFD 3465 Human Nutrition and Metabolism
- NTFD 4447 Nutritional Biochemistry
- NTFD 4425 & 4435 Clinical Nutrition I & II

Honors, awards, scholarships, and fellowships

Freytag Fellow (CUB)	2021
Integrated Data Science Fellow (National Science Foundation)	2021
Summa Cum Laude (ETSU)	2020
1911 Society Inaugural Member (ETSU)	2020
College of Clinical and Rehabilitative Health Sciences	
Outstanding Undergraduate Student (ETSU)	2020
Undergraduate Summer Research Fellowship	2019
Nutrition Honors-in-Discipline (ETSU)	2018
Stanton Honors Scholar (ETSU)	2017
University Honors Scholar (ETSU)	2016

Publications

The Influence of the Microbiota on Brain Structure and Function: Implications for Stress-Related Neuropsychiatric Disorders

Sterrett JD, Andersen NA, Lowry CA

Evolution, Biodiversity and a Reassessment of the Hygiene Hypothesis, Rook GAW, Lowry CA (eds.), in press.

Characterization of gut microbiome and metabolome in *Helicobacter pylori* patients in an underprivileged community in the United States

Sterrett JD, White B, Grigoryan Z, Lally L, Heinze JD, Alikhan H, Lowry CA, Perez LJ, DeSipio J, Phadtare S

World J Gastroenterol, 2021.

Microbiome Diversity and Differential Abundances Associated with Gastrointestinal Symptoms, BMI, Immune Markers, and Fecal Short Chain Volatile Fatty Acid Profiles

Sterrett JD, Clark WA, Chandley MJ

Undergraduate Honors Theses, 2020.

Research experience

Behavioral Neuroendocrinology Lab

Mentor: Christopher A Lowry (CUB)

July 2020 – Present

- Led microbiome analysis for multiple projects within the lab and collaborations with other labs.
- Taught microbiome analysis techniques (via QIIME2) and statistics to other lab members and collaborators.
- Wrote review chapter of “The influence of microbiota on brain structure and functioning affecting neuropsychiatric outcomes”.
- Analyzed untargeted metabolomics and lipidomics data for various *Mycobacterium vaccae* strains and plasma of animals treated with the strains.

Nutritional Biochemistry Lab

Mentor: William A Clark (ETSU)

August 2017 – May 2020

- Collaborated with research faculty at ETSU, Quillen College of Medicine, and Bill Gatton College of Pharmacy for research regarding the gut-brain axis, metabolic syndrome, vitamin levels, and supplement bioavailability.
- Instructed undergraduate experimental foods classes in performing proximate analysis on experimental foods.
- Designed and implemented a study to analyze the properties of the ETEE brand beeswax wrap.

Zahner Electrophysiology Lab

Mentor: Matthew Zahner (ETSU)

April 2018 – May 2018

- Assisted in rat autopsy and surgery in preparation for locating blood pressure regulatory centers of the brain and sympathetic denervation of the spleen in sepsis

Teaching experience

Teaching assistant, Department of Integrative Physiology (CUB)

IPHY 4440: Endocrinology

Summer 2021

IPHY 2420: Introduction to Nutrition

Fall 2020 – Spring 2021

IPHY 4420: Nutrition for Human Performance

Fall 2020

Teaching assistant, Department of Chemistry (CUB)

CHEM 1133: General Chemistry II

Spring 2021

Supplemental Instructor, Department of Health Sciences (ETSU)

HSCI 2010: Anatomy & Physiology II

Spring 2020

Lead Tutor, TRIO-Student Support Services (ETSU)

Introductory, General, and Organic Chemistry

Fall 2018 – Spring 2020

Biology, Microbiology, and Anatomy & Physiology

Fall 2018 – Spring 2020

	Paper Writing	Fall 2019
	Instructor, Unaka High School Band (Unaka, TN) Low Brass Music and Marching Fundamentals	Summer 2019
	Private Tutor (Johnson City, TN) Grades 3-12 Math and Science	Spring 2019 – Summer 2020
Work experience	ETSU Outdoor Adventure Assistant Program Leader	Johnson City, TN Summer 2018
Posters and presentations	Differences in Cognitive Functioning, Mood, and Gut Microbiome in Women Receiving Chemotherapy for Breast Cancer and Healthy Controls American Psychosomatic Society Annual Meeting	March 2022
	How Does Chemotherapy Impact Gut Microbiome, Cognitive Functioning, and Mood? A Comparison of Women With and Without Breast Cancer CU Anschutz Microbiome Research in Progress Meeting	May 2021
	Stress and the Gut Microbiota in Athletes CU Boulder Nutrition for Human Performance Guest Lecture Series	October 2020
	Microbiome Diversity and Differential Abundances Associated with Gastrointestinal Symptoms, BMI, Immune Markers, and Fecal Short Chain Volatile Fatty Acid Profiles American Society for Nutrition Conference (presented virtually)	May 2020
	Properties of the ETEE Compostable Plastic Wrap Substitute American Society for Nutrition Conference (presented virtually)	May 2020
	The Fecal Fermentation Profile of Patients with HIV Appalachian Student Research Forum (cancelled due to COVID-19)	April 2020
	Short and Long Chain Fatty Acid Levels as Indicators of Health in HIV-infected vs Non-infected Individuals Tennessee Posters at the Capitol	February 2020
	Properties of the ETEE Wrap Biodegradable Plastic Wrap Substitute SoCon Undergraduate Research Forum	November 2019
	Short-Chain Fatty Acid Profiles for Mouse Models of Autism Spectrum Disorder	April 2019

Appalachian Student Research Forum

Skills

Programming Languages

Python

Data wrangling, scripting, statistical modeling, machine learning, and plotting

R

Data wrangling, statistical modeling, and plotting

Julia

Data wrangling, basic statistics and plotting

C++

Implementation of low-level data structures

Computational Skills

Comfortable with **Unix** command line navigation, basic **bash** scripting, and high performance compute cluster use

Git/Github, Jupyter Notebooks, Google CoLaboratory, and Rmarkdown

Analysis Programs

Proficient in: Quantitative Insights into Microbial Ecology 2 (QIIME2), Shimadzu Gas Chromatography LabSolutions

General Programs

Proficient in: Microsoft Office, Google Suite

Lab Skills

Proficient in: Gas Chromatography, Proximate Analysis (Bomb Calorimetry, Ferric Reducing Ability in Plasma, Soxhlet, Kjeldahl, Fiber Analysis, Ashing)

Familiar with: Enzyme-linked immunosorbent assay

Service and outreach

Organizer, Neurodiverse Food Safety & Cooking Class

ETSU

April 2020

Organizer, Multicultural Nutrition & Cooking Class

ETSU

February 2020

Organizer/Instructor, Summer Bridge Program Nutrition & Cooking Seminars

ETSU

June 2019

Volunteer, Adult Continued Learning

Johnson City Food City

September 2018 — November 2018

Volunteer, Appalachian Resource Conservation and Development Council

Johnson City Farmers' Market

September 2018 — October 2018

Professional memberships

Alpha Eta Society

May 2020 – Present

American Society for Nutrition

January 2020 – Present

ETSU Student Dietetic Association

(Vice President)

January 2019 – May 2020

March 2019 – May 2020

Allied Health Student Association

(President)

January 2017 – October 2018

August 2017 – May 2018

(Secretary)

January 2017 – August 2017