

# John Sterrett

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**Email:** John.Sterrett@colorado.edu      **GitHub:** //github.com/sterrettJD      **Phone:** (731) 819-7433

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

January 2019 – May 2020

(Vice President)

March 2019 – May 2020

**Allied Health Student Association**  
(President)  
(Secretary)

January 2017 – October 2018  
August 2017 – May 2018  
January 2017 – August 2017