

# JOHN STERRETT

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## OBJECTIVE

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Computational Biologist and NSF Integrated Data Science fellow with 4+ years of pipeline and package development. Seeking jobs in software development focused on efficient **bioinformatic data processing**, **compositionally-aware statistical learning**, and **causal inference**.

## EDUCATION

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**PhD in Integrative Physiology**, University of Colorado August 2020 – May 2025 (Expected)  
Interdisciplinary Quantitative Biology Program *GPA: 4.0*

Advisors: Catherine Lozupone, Christopher Lowry

Dissertation: Host-microbiome dual transcriptomics and protein language modeling on deep shotgun metagenomics improve understanding of multi-kingdom crosstalk in the gut microbiome

Relevant coursework: software engineering, causal inference, advanced statistics and research methods, bioinformatics, and genomics

**Bachelor of Science in Nutrition**, East Tennessee State University 2016 - 2020  
Coursework- and research-based honors *GPA: 4.0*

## SKILLS

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**Computing** Workflow management (Snakemake, Nextflow) and integration of workflows with distributed and cloud computing environments (Slurm, AWS, Google Cloud)

**Git** Version control with Git/Github, continuous integration and testing using Github Actions

**Languages** Python (advanced), R (advanced), C++, Julia

**Bioinformatics** Transcriptomics, metatranscriptomics, metabolomics, metagenomics, amplicon sequencing, genome assembly, phylogenomics, pangenomics

**Statistics** Causal inference, advanced linear modeling, Bayesian statistics, Markov chain Monte Carlo sampling, multivariate statistics, dimensionality reduction, network analysis, clustering, random forests

**Soft Skills** Time management, listening, statistical collaboration, storytelling, data visualization

## EXPERIENCE

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**Graduate Research Assistant** Aug 2021 - Present  
Lozupone Lab, University of Colorado Anschutz Medical Campus *Aurora, CO*

- Developed a reproducible and scalable [pipeline](#) (which manages software environments and deployment on high performance compute clusters) for processing and analysis of terabytes of host-microbiome dual transcriptome sequencing data from mucosal biopsies.
- Assembled standard operating procedures for data processing using workflow management software integrated with a high performance compute cluster, which has led to an increase in reproducible research practices across the lab.
- Constructed a reproducible research workflow to assemble genomes from shotgun metagenomic sequencing data to assess the global strain-level diversity of *Prevotella* bacteria.
- Maintained open-source software developed by previous lab members ([AMON](#), [SCNIC](#)) and expanded functionality in community open-source tools including [QIIME2](#) and [Microshades](#).

**Graduate Research Assistant**  
Lowry Lab, University of Colorado

Jul 2020 - Present  
Boulder, CO

- Spearheaded analysis of microbiome sequencing data for 10 collaborative projects, resulting in 7 articles published or in review.
- Mentored lab members and collaborators on data processing and statistics.
- Authored review chapter on the impacts of the microbiome on stress-related psychiatric outcomes, with special consideration of immunomodulatory microbes.

## **PUBLICATIONS**

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Complete list of 10 peer-reviewed publications with over 80 citations can be found found on [Google Scholar](#). Selected publications include:

- **Poly-omic risk scores predict inflammatory bowel disease diagnosis**  
Sterrett JD\*, Arehart CH\*, et al. *mSystems*, 2023.
- **SCNIC: Sparse correlation network investigation for compositional data**  
Shaffer M, Thurimella K, Sterrett JD, Lozupone CA. *Molecular Ecology Resources*, 2023.

## **AWARDS**

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Graduate Student Award in Research Excellence (Front Range Microbiome Symposium)	2024
Best Talk (BioFrontiers Institute UpGoer 5 Lightning Talks)	2022, 2023
SymbNET International Host-Microbe Symbiosis Scholar	2023
Undergraduate Research Opportunities Program Team Grant (CUB)	2023
William J. Freytag Fellow (CUB)	2021
Integrated Data Science Fellow (National Science Foundation)	2021
College Outstanding Undergraduate Student (ETSU)	2020
Undergraduate Summer Research Fellowship	2019
University Honors Scholar & Honors-in-Discipline (ETSU)	2016

## **EXTRA-CURRICULAR ACTIVITIES**

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- Organizer, University of Colorado Fall '24 seminar series on genomic and protein language models.
- Co-organizer, Interdisciplinary Quantitative Biology Symposium with 150 attendees.
- Recurring guest lecturer, graduate courses on microbiome analysis and the gut-brain axis, University of Colorado Department of Integrative Physiology.
- Organizer, University of Colorado Boulder and Anschutz cross-campus journal club on metagenomic analysis with workflow management.