

# John Christian Gaby

## Research Microbiologist



Resume Last Updated:  
19 March 2023



Gainesville, Florida, USA



[chrisgaby.github.io](https://chrisgaby.github.io)



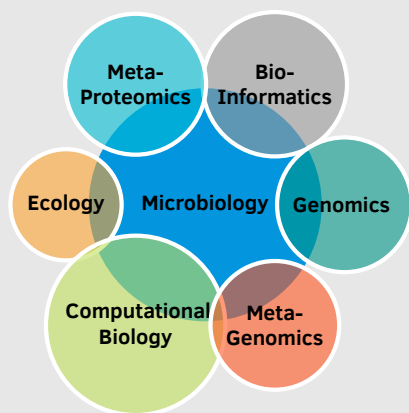
[/in/john-gaby-56525410b/](https://in/john-gaby-56525410b/)



[chrisgaby](https://github.com/chrisgaby)

## Knowledge

### Domains



## About Me

John Christian Gaby is a research microbiologist with bioinformatics experience who has worked in academia, government, and industry. His research projects have involved the study of microbial function as it pertains to animal health, crop productivity, nitrogen cycling, and organic waste management.

## Education

### Ph.D., Microbiology

Minors: Genomics and Ecology

[Cornell University](#)

2013 Ithaca, NY

### B.S., Biology

[The University of Tennessee](#)

2002 Knoxville, TN

## Skills

### Programming

Python & Jupyter  
Conda  
R & RStudio  
SQL  
UNIX Shell  
Docker  
NextFlow  
LaTeX  
Markdown  
Git & GitHub

### Bioinformatics

**ELN & LIMS**  
Benchling  
**Robotics**  
Opentrons OT-2  
**HPC and Cloud**  
Slurm, GCP  
**Homology Search**  
BLAST, Diamond, HMMer  
**Read Mapping**  
BowTie, BWA  
**Assembly**  
SPAdes, MegaHIT

### Gene Finding

Prodigal, GeneMark

### Gene Annotation

InterProScan, dbCAN, Pfam  
**Databases**  
NCBI Assembly, Genbank, SRA, *nifH*, Silva rRNA

### Similarity Search

MASH & fastANI  
**metaProteomics**  
MaxQuant, Perseus

### Methodologies

Machine Learning  
Ecological Stats.  
DNA Extraction  
Amplicon Seq.  
Nanopore Seq.  
Sangar Seq.  
PCR & qPCR  
Acetylene Reduc.  
Enrichment  
Isolation  
Nitrogen Analyses  
Soil Analyses  
Field Studies

## Experience

- 2022 - **Senior Scientist II** [Resilient Biotics](#)
- 2023 - Microbiome Therapies for Respiratory Diseases
- 2020 - **Research Microbiologist Research Associate** [USDA ARS GBRU](#)
- 2022 - Machine Learning Prediction Using Genomic Data
- 2016 - **Postdoctoral Researcher** [The Norwegian University of Life Sciences \(NMBU\)](#)
- 2020 - Functional Multi-omics of Biogas Reactors and Gut Microbiomes
- 2013 - **Postdoctoral Researcher** [The Georgia Institute of Technology](#)
- 2016 - Nitrogen Fixation in Terrestrial and Marine Ecosystems
- 2011 - **Fulbright United States Student Fellow** [Corporacion Corpogen](#)
- 2012 - Nitrogen Cycling in the Colombian Paramo
- 2005 - **Graduate Researcher** [Cornell University](#)
- 2011 - The Diversity and Ecology of Nitrogen-fixing Bacteria
- 2003 - **Volunteer** [United States Peace Corps](#), Niger, West Africa
- 2005 - Sahelian Agriculture and Natural Resources Management
- 2002 - **Research Assistant** [The University of Tennessee](#)
- 2002 - *Mycobacterium ulcerans*
- 2001 - **HHMI Summer Research Fellow** [University of Pittsburgh](#)
- 2001 - Genetics of Alternative Cobamide Utilization in *Salmonella*
- 2000 - **DOE Energy Research Undergraduate Laboratory Fellow** [ORNL](#)
- 2000 - Fluorescence-based Biosensor Development

## Publications, 4 Selected of 17 Total

**1366 citations** according to [my Google Scholar page](#) as of March 19, 2023

Peer reviewed articles: 6 first author, 9 co-author, 1 corresponding author

- [1] L. Michalak, J. C. **Gaby**, L. Lagos, S. L. La Rosa, T. R. Hvidsten, C. Tétard-Jones, W. G. Willats, N. Terrapon, V. Lombard, B. Henrissat, J. Dröge, M. Ø. Arntzen, L. H. Hagen, M. Øverland, P. B. Pope, and B. Westereng. Microbiota-directed fibre activates both targeted and secondary metabolic shifts in the distal gut. *Nature Communications*, 11(1), 2020.
- [2] J. C. **Gaby** and D. H. Buckley. A comprehensive aligned *nifH* gene database: A multipurpose tool for studies of nitrogen-fixing bacteria. *Database: The Journal of Biological Databases and Curation*, 2014:bau001, 2014.
- [3] J. C. **Gaby** and D. H. Buckley. A comprehensive evaluation of PCR primers to amplify the *nifH* gene of nitrogenase. *PLoS ONE*, 7(7):e42149, 2012.
- [4] J. C. **Gaby** and D. H. Buckley. A global census of nitrogenase diversity. *Environmental Microbiology*, 13(7):1790–1799, 2011.