

John Christian Gaby

Research Microbiologist



Resume Last Updated:
6 April 2023



Durham, North Carolina, USA



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



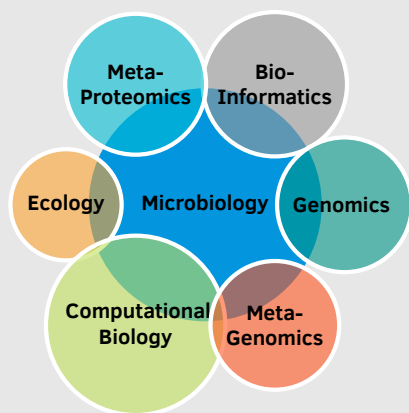
[/in/john-gaby-56525410b/](https://in.linkedin.com/in/john-gaby-56525410b/)



[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](https://www.cornell.edu/)

2013 Ithaca, NY

B.S., Biology

[The University of Tennessee](https://www.utk.edu/)

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, Gene-
Mark

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.
Sanger 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.