Deanna Lanier

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LinkedIn

Education

University of Georgia, Institute of Bioinformatics — *Aug.2020-present*
PhD Candidate

Spelman College — *Aug.2016-May.2020*
Bachelor of Science in Health Science

Research Experience

Graduate Research Assistant — *Jan.2021-present*
Edison Lab, University of Georgia
Advisor: Arthur Edison
Investigate the effects of toxic exposures on overall health propensities using metabolomics and computational methods.

Research Intern — *Dec.2018-Jun.2019*
SisterLove, Atlanta
The effects of stigma and media on the perception of HIV in adolescence.

Skills

Programming:	Python, MATLAB, R, Java, HTML/CSS
Lab techniques:	NMR sample preparation, NMR metabolomics data collection, quality control/quality assurance, long-term reference material preparation
Bioinformatics analysis:	Metabolomics and longitudinal analysis, Flux Balance Analysis, Constraint Based Reconstruction and Analysis, Database management

Research

Metabolomics in Environmental Toxicology and COVID-19
Developing advanced metabolomics methods to investigate the impact of environmental toxins on COVID-19 infections in animal models as lead metabolomics researcher. The research aims to elucidate the underlying metabolic pathways and identify potential biomarkers for improved understanding and intervention of COVID-19.

Dog Urine Stability for NMR analysis

Utilizing computational tools and bioinformatics approaches to evaluate the stability of canine urine under various conditions for NMR metabolomics analysis studies.

Analysis Pipelines for Longitudinal Metabolomics Studies

This research involves the integration of statistical methods, data visualization techniques, and computational algorithms to handle the challenges associated with large scale metabolomics data, enabling comprehensive characterization and interpretation of dynamic metabolomic profiles over time.

Academic Service

Biochemistry and Metabolism Education — *Jan. 2023-present*
Edison Lab & Woods Hole Oceanographic Institution

Development of computational tools to teach concepts of bioinformatics, metabolism, and biochemistry to undergraduate and graduate level students.

Code Reviewer, Metabolomics Toolbox Repository — *Jan.2022-present*
Edison Lab, University of Georgia

Undergraduate Mentor — *Jan.2021-present*
Peach State Louis Stokes Alliance for Minority Participation (LSAMP)
Edison Lab, University of Georgia

Using computational analysis to quantify the diversity of UDP-glycosyltransferases in the model organism *Caenorhabditis elegans.*

Bioinformatics Graduate Student Association Secretary — *Jun.2021-Jun.2022*
Institute of Bioinformatics, University of Georgia

Graduate Studies Panelist — *Apr.2021*
Graduate Affairs Office, Spelman College

"HBCU to PWI: What We Wish We Had Known"

Awards

AIChE Conference Grant Recipient — *Dec.2024*
5th AfroBioTech Conference

Glycoscience Training Program NIH Fellow — *Dec.2021-Dec.2022*
Complex Carbohydrate Research Center

Presentations

Rutgers Postdoc Peak *Apr. 2025*
Rutgers Robert Wood Johnson Medical School
Oral Presentation: Analysis of PFOA-induced immune modulation in a SARS-CoV-2 infection model

Institute of Bioinformatics Retreat *Apr. 2025*
University of Georgia
Poster talk: Metabolomic shifts in response to PFOA exposure in a COVID-19 infection model

Biochemistry Resource Pitch *Nov. 2024*
W.W. Norton & Company, INC.
Oral Presentation: Model-Based Learning for Metabolism

PROGRESS: Precision One Health Symposium *Nov. 2024*
University of Georgia
Poster talk: Improving Dog Urine Metabolomics: Stability & Potential

MANA 2024, Tampa, Florida *Oct. 2024*
Metabolomics Association of North America
Oral Presentation: Untargeted metabolomics reveal PFOA-induced immune modulation in a SARS-CoV-2 infection model

MANA 2023, Columbia, Missouri *Oct.2023*
Metabolomics Association of North America
Oral presentation: NMR Metabolomics Analysis of PFOA in a COVID-19 Infection Model

GTP Retreat, Athens, Georgia *Jan.2023*
Glycoscience Training Program
Oral presentation: NMR Metabolomics Analysis of PFOA in a COVID-19 Infection Model
Poster talk: Metabolomic shifts in response to PFOA exposure in a COVID-19 infection model

Bridging Centers Workshop, Athens, Georgia *Nov.2022*
Poster talk: Metabolomic shifts in response to PFOA exposure in a COVID-19 infection model

MANA 2022, Alberta, Canada *Sep.2022*
Metabolomics Association of North America
Poster talk: Metabolomic shifts in response to PFOA exposure in a COVID-19 infection model

Teaching

Computation Subgroup Instructor (co-teach with Zarif Hossain) *Aug. 2024 - present*
University of Georgia

Teaching Assistant for Intro to Biochemistry and Molecular Biology *Jan.2024-May.2024*
University of Georgia

Teaching Assistant for Intro to Biochemistry and Molecular Biology *Jan.2023-May.2023*
University of Georgia

Computational Subgroup Instructor (co-teach with Rahil Tuajale) *Aug.2020-Aug.2022*
University of Georgia

Clubs and Organizations

PhD Scientific Consulting Club *Apr. 2024-present*
University of Georgia

Women in Metabolomics Mentorship Program *Feb.2024-present*
Metabolomics Association of North America

Publications

"Asif, MZ; Benveniste, MC; Chism, KD; Levin, AL; **Lanier, D**; Watkins, RE; et al.; Edison, AS (2023). Computational analysis of variation in *C. elegans ugts*. microPublication Biology. 10.17912/micropub.biology.000819."

Lanier, D (2025), Identify a Biomarker: NMR application to identify biomarkers. Published on Network for Advanced NMR. https://usnan.nmrhub.org/resource-connector/vignette-library/vignette/identify_a_biomarker

Manuscript in progress: "Untargeted NMR metabolomics reveal PFOA-induced immune modulation in a SARS-CoV-2 infection model"

Manuscript in progress: "Spectral Automated NMR Decomposition (SAND) uses and toolbox"

Manuscript in progress: "Using Interactive Flux Balance Analysis in the Classroom"