Linton Freund

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Education

PHD | 2019-2025 | University of California Riverside

- Program: Genetics, Genomics and Bioinformatics
  - Member of Dr. Emma Aronson's Lab
  - Advanced to Candidacy February 2022
  - Awarded Chancellor's Distinguished Fellowship (2019)

MS | 2019 | California State University, Long Beach

- Major: Biology (GPA 3.7)
  - Student in the Bioinformatics Lab (Dr. Renaud Berlemont)
  - Related coursework: bioinformatics, ecology, computer modeling
  - Thesis: Insights into the Structure and Function of the Gut Metagenome in Cartilaginous Fishes

| 2017 | Moorpark College

- Major: Biology (GPA: 3.69)
  - Related coursework: microbiology, general and organic chemistry, biology, protein purification

B.A. | 2014 | University of California, Santa Barbara

- Major: Psychology and Brain Sciences (Major GPA 3.7, GPA 3.4)
  - Related coursework: Cognitive psychology, learning and memory, biopsychology

Publications

Aronson, E. L., **Freund, H. L.**, and Maltz, M. R. 2023. Microbiology of the Critical Zone. Critical Zone and Ecosystem Dynamics, White, T. and A. Provenzale, Eds. Springer-Verlag. *in press*.

Freund, L. (2023). Amplicon Sequencing Workflow (v1.0.1). Zenodo. https://doi.org/10.5281/zenodo.8264886

Biddle, T.A., Yisrael, K., Drover, R., Li, Q., Maltz, M.R., Topacio, T.M., Yu J., Del Castillo, D., Gonzales, D., **Freund, H.L.**, Swenson, M.P., Shapiro, M.L., Botthoff, J.K., Aronson, E., Cocker, D.R. 3rd, Lo D.D. Aerosolized aqueous dust extracts collected near a drying lake trigger acute neutrophilic pulmonary inflammation reminiscent of microbial innate immune ligands. Sci Total Environ. 2023 Feb 1;858(Pt 3):159882. doi: 10.1016/j.scitotenv.2022.159882. Epub 2022 Nov 2. PMID: 36334668.

Maltz, M.R.; Carey, C.J; **Freund, H.L.;** Botthoff, J.; Stajich, J.E.; Hart, S.C.; Aarons S.; Aciego, S.; Blakowski, M.; Cullen Dove, N.D.; Barnes, M; Pombubpa N.; Aronson, E. Landscape topography and regional drought alters dust microbiomes in the Sierra Nevada of California. Frontiers in Microbiology 2022 13:856454.

Freund H.L., Maltz M.R., Swenson, M.P., Topacio, T.M., Montellano, V.A., Porter, W., Aronson, E. Microbiome interactions and their ecological implications at the Salton Sea. California Agriculture 2022 76: 1.

Jackson, D.; Maltz, M.R.; **Freund, H.L.;** Borneman, J.; Aronson, E. Environment and Diet Influence the Bacterial Microbiome of Ambigolimax valentianus, an Invasive Slug in California. Insects 2021 12: 7.

Nguyen, S. T. C., **Freund, H. L.**, Kasanjian, J., and Berlemont, R. 2018. Function, distribution, and annotation of characterized cellulases, xylanases, and chitinases from CAZy. Applied Microbiology and Biotechnology 102: 4.

Awards

2023	Best Poster; UC Riverside Genetics, Genomics, and Bioinformatics Annual Symposium (2023)
2023	UC Riverside College of Natural Sciences' Dean's Fellowship Fund ($6,200)
2022	National Microbiome Data Collaborative Champion
2021	University of Washington Summer Institute of Statistical Genetics Scholarship ($900)
2021	Dr. Janet M. Boyce Memorial Endowed Scholarship Fund for Women Majoring in the Sciences ($2,000)
2020	Best Flash-Talk at the UC Riverside Genetics, Genomics, and Bioinformatics Annual Symposium 2020
2020	SKC West Inc. Equipment Grant ($1,605.95)
2020	Honorable Mention for the Zymo-UCR Microbiome Fellowship
2019	Chancellor's Distinguished Fellowship Award (UC Riverside)
2018	Dr. Vern Eveland Memorial Award ($2,500)
2018	Linda Lee Warren Graham Endowed Scholarship ($2,000)

Presentations

2023	9th Annual Southern California Microbiome Symposium
2022	BREATHE Annual Workshop (co-presenter: Talyssa Topacio)
2020, 2021, 2022, 2023	UC Riverside Genetics, Genomics, and Bioinformatics Annual Symposium
2019	California State University Annual Biotechnology Symposium
2017, 2018	Southern California Branch of the American Society for Microbiology (SCASM) Student Colloquium
2017, 2018	California State University Long Beach Graduate Research Conference

Research Experience

2017-2019 **Graduate Student Researcher, Bioinformatics Lab**
Biology Department, California State University Long Beach
Supervisor: Dr. Renaud Berlemont
Thesis: Insights into the Structure and Function of the Gut Microbiome in Cartilaginous Fishes
Tasks: Data mining via custom bioinformatics pipelines and algorithms using BASH (shell scripting)
Conduct statistical analyses via R scripts and RStudio packages
Investigate current research on enzymatic polysaccharide deconstruction by microbes in the gut of vertebrates
Assist Principal Investigator in writing, editing and reviewing lab publications

2016-2017 **Contract Biologist, The Butterfly Project**
Biology Department, Moorpark College
Supervisor: Dr. Jana Johnson
Research: Population maintenance and propagation of the Lange's Metalmark Butterfly and the Palos Verdes Blue Butterfly
Tasks: Release pupae and capture gravid foundresses in field
Conduct and supervise butterfly feedings
Document oviposition and create maps of egg location
Build habitats for larvae, pupae and butterflies

2016 **Student Intern; Biotechnology Laboratory**
Biotechnology Department, Moorpark College

Supervisor: Professor Subhash Karkare
Research: Optimization of Enzyme-Linked Immunosorbent Assay (ELISA) for the Biotechnology Certification Program curriculum
Tasks: Prepare samples of sCTLA-4 for analysis
Reduce duration of ELISA and determine necessary sample dilutions
Research purpose and technique behind ELISA
Qualitative analysis of assay results

2014 **Lead Clinical Research Coordinator; LY Pharmacy Inc.**
Supervisor: Luna Yojay, PharmD.
Research: Direct Phase 2 and Phase 3 clinical trials testing pharmaceuticals targeting chronic kidney disease and associated complications/illnesses
Tasks: Oversight of administering of pharmaceuticals to participants
Monitor vital signs of patients after drug administration
Manage data utilizing Medidata Rave (electronic-data capture)
Meet with Clinical Research Associates to discuss data and protocol

2013-2014 **Research Assistant; Computational Cognitive Neuroscience Laboratory**
Department of Psychology and Brain Sciences, University of California Santa Barbara
Supervisor: Dr. F. Gregory Ashby
Research: Utilization of computational modeling to understand the cortical substrates involved in cognitive skills such as category learning
Tasks: Collect data and organize data into Microsoft Excel
Assist in data analysis of computer-based experiments
Observe and practice creating scripts using Python and MatLab
Conduct experiment targeting procedural and declarative learning systems

Skills

Computing: Bash, R, Git, Microsoft Office, Python
Wet Lab: DNA extraction, DNA extraction quantification, PCR, vacuum filtration, microbial culturing

Extracurriculars

2023-Present Food Not Bombs, Riverside Chapter
- Member

2020-2023 UC Riverside Genetics, Genomics, and Bioinformatics Student Association
- Vice President 2022-2023
- Vice President 2020-2021
- Student Representative Alternate 2019-2020

2020-2023 UC Riverside Queer Graduate Student Association
- President 2022-2023
- Vice President 2021-2022

2021-2022 Student Researchers Union
- Bargaining Representative Alternate 2022
- Biosciences Organizer 2021-2022

2018-2019 California State University Long Beach Biology Graduate Student Association
- Board Member 2018-2019
- Vice President 2021-2022