Hannah L. Freund

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Education

PHD | 2019-2024 | University of California Riverside

- Program: Genetics, Genomics and Bioinformatics
  - Member of Dr. Emma Aronson's Lab
  - 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

H.L. Freund, Maltz M.R., Swenson, M.P., Topacio, T.M., Montellano, V.A., Porter, W., Aronson, E. 2020. Microbiome interactions and their ecological implications at the Salton Sea. California Agriculture. *In review.*

Nguyen, S. T. C., H. L. Freund, J. Kasanjian, and R. Berlemont. 2018. Function, distribution, and annotation of characterized cellulases, xylanases, and chitinases from CAZy. Applied Microbiology and Biotechnology 102:1629–1637

Awards

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

2019	Presented research at the California State University Annual Biotechnology Symposium
2017, 2018	Presented research at the Southern California Branch of the American Society for Microbiology (SCASM) Student Colloquium
2017, 2018	Presented research at 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

Wet Lab: microbial culture techniques, chromatography, ELISA, infrared spectroscopy, serial dilutions
Computing: BASH, R, Microsoft Office, Electronic Data Capture