

# Hannah L. Freund

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| Pronouns: they/them/theirs | [hfreu002@ucr.edu](mailto:hfreu002@ucr.edu) | [hannahfreund3@gmail.com](mailto:hannahfreund3@gmail.com) | (805) 444-2337 |

## 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

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: 575.

**Freund H.L.**, 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 press*.

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* 102:1629–1637

## Awards

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

2020	Presented research at the UC Riverside Genetics, Genomics, and Bioinformatics Annual Symposium
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- 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**

Computing: Bash, R, Python, Git, Microsoft Office, Electronic Data Capture

Wet Lab: DNA extraction, PCR, microbial culturing