

# ELEANOR WANG

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## SUMMARY

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Microbiology PhD student anticipating graduation in August 2026. Interests include environmental microbial communities, genomics, data visualization, climate justice, education, science journalism, illustration, & outreach.

## EDUCATION

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### University of California, Berkeley

*Ph.D., Microbiology. Expected graduation: Aug 2026*

Advisor: Michiko E. Taga, Ph.D.

2021 – present

Berkeley, CA

THESIS: INVESTIGATING THE BIOLOGY OF CORRINOIDS—ESSENTIAL VITAMIN COFACTORS—IN THE ARCHAEAL DOMAIN

### University of California, San Diego

*B.S., Biochemistry and Cell Biology. Minors: Global Health, Chemistry*

Magna Cum Laude, Phi Beta Kappa, Honors Distinction

2017 – 2020

La Jolla, CA

SENIOR HONORS THESIS: CHARACTERIZATION OF HUMAN MILK OLIGOSACCHARIDE METABOLISM BY INFANT GUT BACTERIA

## RESEARCH EXPERIENCE

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### University of California, Berkeley

*Doctoral Student Researcher*

2021 – present

Berkeley, CA

Principal Investigator: Michiko E. Taga, Ph.D.

- Conducted comparative genomic analysis of corrinoid biosynthesis and dependence in archaea and validated results in diverse haloarchaeal species
- Techniques: basic microbiology, anaerobic culture, comparative genomics, genome annotation, HPLC, LC-MS

### University of California, Berkeley

*Research Specialist*

2020 – 2021

Berkeley, CA

Principal Investigator: Patrick D. Hsu, Ph.D.

- Conducted CRISPR knockout and transcriptional activation screens to discover host factor dependencies in SARS-CoV-2 infection in lung epithelial cells
- Techniques: tissue culture, transfections, lentiviral transduction, molecular biology, NGS library preparation, RNAseq library preparation, high-throughput cloning, golden gate assembly, Gibson assembly, RT-qPCR, PCR

### University of California, San Diego: School of Medicine

*Undergraduate Research Assistant*

2019 – 2020

La Jolla, CA

Principal Investigator: Hiutung Chu, Ph.D.

- Characterized metabolic changes in infant gut bacterial species grown on human milk oligosaccharides
- Techniques: basic microbiology, anaerobic culture, ELISA, HPLC

### University of California, San Francisco

*Summer Research Training Program Student*

2019

San Francisco, CA

Principal Investigator: Seemay Chou, Ph.D.

- Validated hits from a CRISPR interference screen on genetic factors for type VI secretion system susceptibility
- Techniques: basic microbiology, growth curves, RT-qPCR, microscopy, competition assays

### Salk Institute for Biological Studies

*Undergraduate Research Assistant*

2018 – 2019

La Jolla, CA

Principal Investigator: Patrick D. Hsu, Ph.D.

- Developed RNA-targeting CRISPR technologies for research and therapeutic applications, such as RNA base-editing, RNA knockdown screens, multiplexed RNA-targeting, and mRNA splice modulation
- Techniques: molecular biology, high-throughput cloning, PCR, golden gate assembly, Gibson assembly, western blot, tissue culture, transfection & transduction of human cancer cell lines, flow cytometry

Principal Investigator: Shannon M. Lauberth, Ph.D.

- Studied biochemical interactions between chromatin regulator BRD4 and noncoding RNA in cancer epigenetics
- Techniques: cloning, PCR, protein expression and purification, western blot

## AWARDS

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NSF Graduate Research Fellowship Program	2023
Rausser Award	2022
Phi Beta Kappa New Initiate Award	2021
Barry Goldwater Scholarship	2019
UC San Diego BioTechathon. Individual Award: "Best Speaker"; Team Award: "Most Innovative"	2019
Ledell Family Research Scholarship for Science and Engineering	2018

## PUBLICATIONS

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- Wei J, Lotfy P, Faizi K, Baungaard D, Gibson E, **Wang E**, *et al.* Deep learning and CRISPR-Cas13d ortholog discovery for optimized RNA targeting. *Cell Systems*. 14(12):1087-1102.e13 (2023)
- Biering SB, Sarnik SA, **Wang E**, *et al.* Genome-wide, bidirectional CRISPR screens identify mucins as critical host factors modulating SARS-CoV-2 infection. *Nature Genetics*. 54, 1078-1089 (2022).
- Wang E**, Hsu PD. A Catalogue of Cas9 Orthologs to Advance Genome Engineering. *CRISPR J.* Dec;3(6):427-430 (2020).

## PRESENTATIONS

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- Wang E**, Taga ME. Comparative genomics and experimental validation of B12 biosynthesis across the archaeal domain. (June 2025) *ASM Microbe*. Los Angeles, CA. (*poster*)
- Wang E**, Taga ME. Comparative genomics and experimental validation of B12 biosynthesis across the archaeal domain. (Apr 2025) *Microbiology Student Symposium*. Berkeley, CA. **Best speaker, 2<sup>nd</sup> place.** (*talk*)
- Wang E**, Taga ME. Comparative genomic analysis and experimental validation of corrinoid biosynthesis in archaeal species. (Feb 2025) *Archaea Power Hour*. Online. (*talk*)
- Wang E**, Taga ME. Comparative genomic analysis and experimental validation of corrinoid biosynthesis in archaeal species. (Jan 2025) *Reveling on Microbial Processes*. Online. (*talk*)
- Wang E**, Taga ME. Comparative genomic analysis and experimental validation of corrinoid biosynthesis in archaeal species. (Dec 2024) *West Coast Bacterial Physiologists*. Asilomar, CA. (*talk*)
- Wang E**, Taga ME. Comparative genomic analysis and experimental validation of corrinoid biosynthesis in archaeal species. (Sept 2024) *UC Berkeley PMB Departmental Retreat*. Berkeley, CA. (*poster*)
- Wang E**, Taga ME. Comparative genomic analysis and experimental validation of corrinoid biosynthesis in archaeal species. (June 2024) *EMBO Molecular Biology of Archaea*. Palaiseau, France. **Travel grant recipient.** (*poster*)
- Wang E**, Sarnik SA, Biering SB, Sathyan V, Harris E, Hsu PD. CRISPR screens to discover host factor dependencies for SARS-CoV-2 infection. (Oct 2020) *SACNAS – National Diversity in STEM Conference*. Online. **Registration scholarship recipient.** (*poster*)
- Wang E**, Trotta K, Silvis M, Gross C, Chou S. Molecular mechanisms of *E. coli* susceptibility to the Type VI Secretion System. (Nov 2019) *SACNAS – National Diversity in STEM Conference*. Honolulu, HI. **Travel scholarship recipient.** (*poster*)
- Wang E**, Trotta K, Silvis M, Gross C, Chou S. Molecular mechanisms of *E. coli* susceptibility to the Type VI Secretion System. (July 2019) *UCSF SRTF Student Research Symposium*. San Francisco, CA. **Best presentation – honorable mention.** (*talk & poster*)
- Wang E**, Lotfy P, Konermann S, Ivanoff C, Hsu PD. Development of the RNA-targeting CRISPR effector for transcriptome engineering. (Jan 2019) *National Collegiate Research Conference*. Cambridge, MA. (*poster*)
- Wang E**, Lotfy P, Hsu PD. A-to-I RNA editing with CRISPR-Cas13d. (Aug 2018) *UCSD Summer Research Conference*. La Jolla, CA. (*talk*)
- Wang E**, Lotfy P, Ivanoff C, Konermann S, Hsu PD. Discovery and application of the RNA-Targeting CRISPR effector Cas13d in transcriptome engineering. (June 2018) *UCSD Biology Student Research Showcase*. La Jolla, CA. (*poster*)

## SKILLS

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- Microsoft Office Programs (Word, Excel, PowerPoint)
- Programming languages (Python, R, Bash, HTML)
- Adobe Creative Cloud (Photoshop, Illustrator, InDesign, Premiere Pro); graphic design, digital illustration
- Conversational fluency in Mandarin Chinese and Japanese
- Laboratory techniques
  - Molecular biology (high-throughput cloning, golden gate assembly, Gibson assembly, NGS sample preparation, RNAseq library preparation, PCR, RT-qPCR, CRISPR screening)
  - Biochemistry & chemistry (HPLC, western blot, protein expression and purification, ELISA)
  - Tissue culture (basic cell maintenance, transient transfections, lentiviral transduction, flow cytometry)
  - Microbiology (growth curves, competition assays, anaerobic culture)

## TEACHING

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### Graduate Student Instructor

2025

*MCELLBI/PLANTBI C148 – Microbial Genomics & Genetics*

University of California, Berkeley

- Led two weekly discussion sections, held office hours, wrote problem set and exam questions, supervised readers in grading assignments and exams, managed accommodations for disabled students

### Mentor: NSF Research and Mentoring for Postbaccalaureates (RaMP)

2024 – 2025

*Bay Area RaMP Program in Microbiome Sciences*

University of California, Berkeley

- Supervised a post-bacc scholar in characterizing vitamin sharing between halophilic archaea and bacteria
- Designed and led multi-part workshops for a cohort of RaMP scholars on introductory lab techniques, computational biology, Python & R, and scientific figure-making with Adobe Illustrator

### Graduate Student Instructor

2023

*BIO1BL – General Biology Laboratory (Evolution, Ecology, Organismal Biology)*

University of California, Berkeley

- Led weekly lab sections, held office hours, graded assignments, proctored and graded exams, wrote exam questions

### Volunteer: Science at Cal

2022

*Solano Stroll*

The Lawrence Hall of Science

- Illustrated, wrote, and distributed a zine highlighting introductory facts and ongoing work on the ocean microbiome ([PDF available online](#)) at a local community festival, guided attendees (primarily K-8 children) through zine-folding, and answered questions about being a scientist

### Undergraduate Instructional Assistant

2019

*BIPN 100 – Human Physiology I*

University of California, San Diego

- Led weekly discussion sections, held office hours, graded and proctored exams, led exam review sessions, created new study guides to assist with student learning

## LEADERSHIP

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### Art Director: Berkeley Science Review

2024 – present

- Led a team of 8-15 designers in illustrating and creating the layout for UC Berkeley's graduate student-run semesterly science magazine. Issues as Art Director: Fall 2024 (Issue 47), Spring 2025 (Issue 48)
- Responsibilities include leading weekly meetings to critique designer progress, coordinate deadline structures, participate in executive team meetings, assembling final magazine, copy-editing, managing design style guides

### Captain: Queer Crush

2024 – present

- Organize and lead monthly community events for LGBTQIA+ climbers

### Vice Chair: National Science Policy Network – Science Communication Committee

2023 – 2024

- Organized a writing series for aspiring science journalists to meet and exchange feedback on writing projects
- Organized and hosted a panel workshop with professionals in science journalism to provide support for early career writers. Panelists included an editor at Scientific American, a podcast host from NPR, and a freelance journalist.

## SELECTED ACTIVITIES

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### Designer: Berkeley Science Review

2023 – present

- Design and illustrate magazine layouts, scientific diagrams, illustrations, and other visuals for UC Berkeley's graduate student-run semesterly science magazine.

### Graduate Peer Mentor: Dept. Plant & Microbial Biology

2022 – present

- Provide support and guidance for first-year PhD students as they navigate the transition to graduate school, rotations, coursework, fellowship applications, choosing a thesis lab, and other grad school-related challenges

## NON-ACADEMIC WRITING

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- [A Guide to Getting Started in Undergrad Research](#). Guest Blog. Addgene. 2021.06.08
- [Talking the Talk: How Microbes Communicate](#). Print. Saltman Quarterly. Vol 16. p10-13 2020.06.17
- [Animals in Captivity: Prison or Protection?](#) Print. Saltman Quarterly. Fall Insider. 2019.11.09
- [Who Started the Fire? Why California Has Been Burning](#). Print. Saltman Quarterly. Spring Insider. 2019.05.27
- [How to Win a Nobel Prize](#). Online. Saltman Quarterly. 2019.05.21
- [An Introduction to the Rapidly Expanding World of CRISPR](#). Online. Saltman Quarterly. 2019.04.17
- [Should we be PRObiotic or ANTibiotic?](#) Online. Saltman Quarterly. 2019.02.21
- [A Glimpse into the Struggles of Women in Science](#). Online. Saltman Quarterly. 2019.01.28