

ELEANOR WANG

Berkeley, CA, United States · eleanorwang@berkeley.edu · (408) 207-5899 · eleanorwang.github.io

SUMMARY

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

EDUCATION

University of California, Berkeley

2021 – present

Ph.D., Microbiology. Designated Emphasis: Computational Biology. Expected graduation: Aug 2026

Berkeley, CA

Advisor: Michiko E. Taga, Ph.D.

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

University of California, San Diego

2017 – 2020

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

La Jolla, CA

Magna Cum Laude, Phi Beta Kappa, Honors Distinction

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

RESEARCH EXPERIENCE

University of California, Berkeley

2021 – present

Doctoral Student Researcher

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 using analytical chemical techniques
- Techniques: basic microbiology, anaerobic culture, comparative genomics, genome annotation, HPLC, LC-MS
- *Publication in preparation*

University of California, Berkeley

2020 – 2021

Research Specialist

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

2019 – 2020

Undergraduate Research Assistant

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

2019

Summer Research Training Program Student

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

2018 – 2019

Undergraduate Research Assistant

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

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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- (in preparation) **Wang E**, Taga ME. Archaea as a neglected source and sink of cobamides in microbial communities. 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, 2nd 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**, Taga ME. Investigating the biology of corrinoids—essential vitamin cofactors—in methanogenic archaea. (Mar 2023) *CCB Student Seminar*. Berkeley, CA. (talk)
- 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

- Conversational fluency in Mandarin Chinese and Japanese
- Microsoft Office Programs (Word, Excel, PowerPoint)
- Programming languages (Python, R, Bash, HTML, CSS, Jekyll, GitHub)
- Adobe Creative Cloud (Photoshop, Illustrator, InDesign, Premiere Pro); graphic design, digital illustration
- Copyediting, interviewing, science writing, online & print publishing, WordPress
- 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 & MENTORING

Volunteer: Popping the Science Bubble

Jan 2026

Talk title: "It's a microbial world after all: the littlest guys truly do the most."

Berkeley Public Library

- Gave a public science talk about how microbes shape the earth in the format of a zine-reading ([PDF available online](#))

Invited Panelist: ACS Western Regional Meeting

Oct 2025

Surviving Academia: Experiences and Advice Workshop

San Jose State University

Graduate Student Instructor

Spring 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 students with disabilities

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

Fall 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

Sep 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

Fall 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

REVIEWING EXPERIENCE

Journal of Bacteriology (under advisement of PI)

Postbaccalaureate scholar applications: NSF RaMP 2024

NON-ACADEMIC WRITING

- [Book Review of The Equitably Resilient City](#). Print. Berkeley Science Review. Fall 2025. Issue 49.
- [A Guide to Getting Started in Undergrad Research](#). Guest Blog. Addgene. 2021.06.08
- [Talking the Talk: How Microbes Communicate](#). Print. Saltman Quarterly. Vol 17. p10-13 2020.06.17
- [Animals in Captivity: Prison or Protection?](#) Print. Saltman Quarterly. Fall Insider. 2019.11.09
- Reduce, Reuse, Recycle...? Online. Saltman Quarterly. 2019.09.09
- [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

LEADERSHIP

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 – Spring 2026 (Issues 47 – 50)
- Lead weekly meetings to critique designer progress, provide guidance & learning resources, coordinate deadline structures, managing production and publishing in collaboration with executive team, assemble final magazine layout, copy-edit, 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.

OUTREACH & SERVICE

Designer & Writer: Berkeley Science Review

2023 – present

- Designed and illustrated magazine layouts, scientific diagrams, illustrations, and other visuals for UC Berkeley's graduate student-run semesterly science magazine
- Wrote and published articles in print, interviewed UC Berkeley faculty & students

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

Microbiology Student Group – Symposium Outreach

2022 – present

- Designed and illustrated logos, flyers, posters, and marketing materials to promote the symposium

Host Microbiome Journal Club Organizer: UC Berkeley

2023 – 2024

- Coordinate, invite presenters, facilitate discussion for a campus-wide monthly journal club

Student Postdoc Seminar Organizer: Dept. Plant & Microbial Biology

2022 – 2023

- Coordinate, invite speakers, facilitate discussion at weekly department seminars to build departmental community
- Initiated new efforts for students and postdocs to engage through short lightning talks, opportunities to meet department alumni, and conversations about career paths in academia, industry, and alternative fields

Writer: Saltman Quarterly

2018 – 2020

- Wrote and published articles online and in print as part of a team of writers for UC San Diego's undergraduate biology research journal. Specific roles: Online Reporter (Oct. 2018 – June 2019); Staff Writer (June 2019 – June 2020)

Sponsorship Intern: Medical, Educational Missions and Outreach

2018 – 2020

- Volunteered with a 501(c)(3) non-profit, student-run, humanitarian organization devoted to serving underprivileged communities local to San Diego and abroad through addressing medical and educational needs.

- Coordinated with local businesses to collect donations for annual fundraising gala. Organized and led community outreach and volunteering events.

Volunteer Committee: UCSD Biological Sciences Student Association

2017 – 2018

- Planned, organized, and led volunteer, community outreach, and fundraising events

Volunteer Notetaker: UCSD Office of Students with Disabilities

2018

- Took organized and detailed notes for distribution to students with disabilities
- Courses: General Chemistry, Multivariable Calculus

OTHER WORK EXPERIENCE & ACTIVITIES

Freelance Writer & Illustrator: Schmidt Sciences

Sep 2025

Interviewed research software engineers about their work and career backgrounds at a scientific meeting and attended conference events. Wrote and illustrated a zine reporting the events and interviewees' career trajectories

Sandwich Artist and Cashier: Subway

2017

Barista and Cashier: TeaTop

2015 – 2016

PROFESSIONAL MEMBERSHIP

Graphic Artists Guild

2025 – present

National Association of Science Writers (NASW)

2023 – present

American Society for Microbiology (ASM)

2025

The Society for Advancement of Chicanos and Native Americans in Science (SACNAS)

2019 – 2021

REFERENCES & SAMPLE WORK

Available upon request