Eleanor Wang

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

Summary

Microbiology PhD student anticipating graduation in 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. 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
- Techniques: basic microbiology, anaerobic culture, comparative genomics, genome annotation, HPLC, LC-MS

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

University of California, San Diego *2018*
Undergraduate Research Assistant La Jolla, CA
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 BioTechathalon. Individual Award: "Best Speaker"; Team Award: "Most Innovative"	2019
Ledell Family Research Scholarship for Science and Engineering	2018

Publications

(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

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 SRTP 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

- 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 & 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)

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 16. 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)
- 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.

Outreach & Service

Designer: 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

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

Sandwich Artist and Cashier: Subway 2017

Barista and Cashier: TeaTop 2015 – 2016