
EDUCATION

University of California, Davis (UCD) Postdoctoral Scholar; Schmidt Science Fellowship	Davis, CA 10/2024-present
University of California, San Francisco (UCSF) Ph.D. Biomedical Sciences NSF GRFP, NIH T32, UCSF Discovery, Fletcher Jones, and BCMM Fellowships	San Francisco, CA 9/2019-9/2024
Colgate University B.A. Molecular Biology with Highest Departmental Honors, Dean's Award, Summa Cum Laude	Hamilton, NY 8/2013-5/2017
National Institutes of Health (NIH) Colgate-NIH Off-Campus Study Program; Part-time Researcher	Bethesda, MD 6-12/2016
University of Oxford Biomedical Sciences Off-Campus Study Program	Oxford, UK 1-6/2016

RESEARCH EXPERIENCE

Postdoctoral Scholar <i>UCD, Department of Plant Pathology</i> Advisor: Dr. Pamela Ronald <ul style="list-style-type: none">Discover new innate immune genes in plants that are conserved across domains of lifeAssist with development of biofertilizers composed of bacteria and small molecules	Davis, CA 10/2024-present
Biomedical Sciences Ph.D. Student <i>UCSF, School of Medicine, Department of Microbiology and Immunology</i> Advisor: Dr. Joseph Bondy-Denomy <ul style="list-style-type: none">Defined the mechanism of the bacterial immune system 'CBASS' that is the ancient origin of the human cGAS-STING system.Discovered the first anti-CBASS 'sponge' proteins in bacterial viruses (phage). Patent pending for applications in anti-microbial therapeutics (no. 63/448,609)Identified, curated, and established native model systems in <i>Pseudomonas aeruginosa</i> with new bacterial immune systems	San Francisco, CA 9/2019-9/2024
Post-Baccalaureate Research Fellow <i>NIH, National Institute of Allergy and Infectious Disease (NIAID), HIV Immunovirology Unit</i> Advisors: Drs. Tae-Wook Chun and Anthony Fauci <ul style="list-style-type: none">Quantified and interpreted changes in HIV dynamics from human phase I clinical trials evaluating the anti-$\alpha 487$ antibody and combination anti-HIV antibodiesExamined the impact of ART interruption on the HIV reservoir and immunityManaged clinical specimens from ongoing observational trial of 750+ patientsFeatured on Colgate-NIH website: https://youtu.be/fQeRzPTUY5E	Bethesda, MD 6/2017-8/2019
Undergraduate Student Researcher <i>NIH, National Cancer Institute (NCI), Immune Biology of Retroviral Infection Section</i> Advisor: Dr. Marjorie Robert-Guroff <ul style="list-style-type: none">Examined longitudinal B cell response in the bone marrow of 60 non-human primates vaccinated against Simian Immunodeficiency Virus (SIV) infectionTranslated research into senior thesis presentation to jury of 3 Colgate professors and department of ~15 researchers	Bethesda, MD 6-12/2016
Undergraduate Student Researcher <i>Colgate University, Department of Biology</i> Undergraduate Researcher; Advisor: Dr. Barbara Hoopes <ul style="list-style-type: none">Interpreted genome-wide association studies and identified 2 candidate genes with mutations associated to growth and development in domesticated dogsPerformed DNA sequencing and bioinformatic analysis to confirm variation in <i>ALSM1</i> gene is associated to body size measurements in 35 domesticated dogs	Hamilton, NY 5-12/2015

SCIENTIFIC SKILLS

- Data Analysis:** Experimental design, graphical and statistical analyses
- Experimental Biology:** Mammalian and bacterial cell cultivation and viral infection, plasmid construction and cloning, targeted and whole genome sequencing (WGS), immune function assays, flow cytometric analyses
- Genome Engineering:** CRISPR-Cas, allelic exchange, and homologous recombination of bacterial
- Bioinformatics:** Genetic and structural homology, structural predictions and modeling, WGS analyses

TEAMWORK AND LEADERSHIP

Board Member and Volunteer

Women's Global Empowerment Fund (WGEF); <https://wgefund.org/>

Denver, CO
8/2009-Present

- Non-profit org. empowering women in Uganda through socioeconomic, agriculture, and health initiatives
- Coordinated grant research and submissions with the WGEF founder
- Facilitated 5 fundraisers at Denver-based locations and events
- Assisted with the 2016 opening of the Gulu Women's Resource Center
- Traveled to Uganda in 2015 and 2016 to support the WGEF founder, staff, and clients with Annual Drama Festival, Gulu Women's Resource Center, and Health Periods Initiative

Director and Member

UCSF, Immunologists for Gender Equity (IgEquity); <https://immunox.ucsf.edu/igequity>

San Francisco, CA
9/2019-9/2024

- Student-led org. promoting gender equity in the UCSF Immunology Program
- Restructured mission, initiatives, and partnerships to be more inclusive and welcoming of underrepresented gender minorities
- Managed 20+ member team with students, postdocs, and faculty
- Developed IgEquity Endowment (\$2M goal) to ensure the organization has sustainable, multi-generational support

Member

Solving for Science; <https://solvingfor.org/>

San Francisco, CA
12/2022-Present

- Non-profit org. solving problems related to collaboration, inclusion, engagement, and efficiency in science
- Invited to join the org. and collectively solve gender inequities and inequalities with scientists across the country

MENTORSHIP AND TEACHING

Coordinator and Mentor

UCSF, Biomedical Sciences Peer Mentoring Program

San Francisco, CA
9/2019-2021

- Student-led org. developing intergenerational relationships that elevate experiences of first year PhD students
- Restructured peer mentoring framework and expectations to be more inclusive
- Coordinated DEI mentorship training, surveyed students, and matched mentor-mentee pairs for 60+ students
- Applied these mentorship skills to 11 students a graduate and undergrad level

Teaching Assistant

UCSF, Critical Thinking and Science Communication Course

San Francisco, CA
1-3/2020

- Guided 6 students on written proposal and oral defense, facilitated scientific discussions and office hours, and provided final feedback and grades
- All students successfully passed the course

Presenter and Advisor

UCSF, National Science Foundation (NSF) Workshop

San Francisco, CA
9/2020-22

- Led informational workshop and brainstorming session for first year PhD students
- Provided feedback on 20+ student proposals with written and in-person

SELECTED PRESENTATIONS

1. **Huiting E** et al. Detecting new innate immune receptors in plants. Selected talk at UCD Postdoctoral Scholar Association. Davis, CA. 2025.
2. **Huiting E** et al. Understanding how phage co-evolve with bacterial cGAS immunity. Invited talk at Collaborative Research Center TRR 237 Nucleic Acid Immunity. Virtual. 2025.
3. **Huiting E** et al. Phage anti-CBASS protein simultaneously binds cyclic trinucleotide and dinucleotides. Selected talk at UCSF/UCB Immunology Retreat. Asilomar, CA. 2023. Awarded outstanding talk.
4. **Huiting E** et al. Bacteriophages inhibit and evade cGAS-like function in bacteria. Selected talk at Symposium on the Immune System of Bacteria. Weizmann Institute, Tel Aviv, Israel. 2023.
5. **Huiting E** et al. Bacteriophages antagonize cGAS-like immunity in bacteria. Invited talk at Innate Immunity Working Group. UCSF, San Francisco, CA. 2022.
6. **Huiting E** et al. Bacteriophages antagonize cGAS-like immunity in bacteria. Selected talk at Biomedical Sciences Graduate Program Retreat. Asilomar, CA. 2022.
7. **Huiting E** et al. Bacteriophages antagonize cGAS-like immunity in bacteria. Poster at Molecular Genetics of Bacteria and Phages Meeting. UW-Madison, WI. 2022. Awarded outstanding poster.
8. **Huiting E** et al. Bacteriophages antagonize cGAS-like immune function in bacteria. Selected talk at Bay Area Microbial Pathogenesis Symposium. UCSF, San Francisco, CA. 2022.

SELECTED PUBLICATIONS

Author links for complete listing: Google Scholar, PubMed, bioRxiv

*: Co-author

1. Tesson F*, **Huiling E*** et al. Exploring the diversity of anti-defense systems across prokaryotes, phages, and mobile genetic elements. 2025. *Nucleic Acid Res.* doi: 10.1093/nar/gkae1171.
2. Li D*, Xiao Y*, Xiong W*, Fedorova I*, Wang Y*, Liu X, **Huiling E**, et al. Single phage protein sequester TIR- and cGAS-generated signaling molecules. 2023. *Nature*. doi: 0.1038/s41586-024-08122-4
3. Cao X*, Xiao Yu*, **Huiling E***, et al. Phage anti-CBASS protein simultaneously binds cyclic trinucleotide and dinucleotides. 2023. *Mol Cell*. doi: 10.1016/j.molcel.2023.11.026.
4. **Huiling E** and Bondy-Denomy J. Defining the expanding mechanisms of phage-mediated activation of bacterial immunity. 2023. *Curr Opin Microbiol*. doi: 10.1016/j.mib.2023.102325.
5. **Huiling E***, Cao X*, et al. Bacteriophages inhibit and evade cGAS-like immune function in bacteria. 2022. *Cell*. doi: 10.1016/j.cell.2022.12.041.
6. Johnson MC, Laderman E, **Huiling E**, et al. Core Defense Hotspots within *Pseudomonas aeruginosa* are a consistent and rich source of anti-phage defense systems. 2022. *Nucleic Acids Res.* doi: 10.1093/nar/gkad317.
7. **Huiling E** and Bondy-Denomy J. A single bacterial enzyme i(NHI)bits phage DNA replication. 2022. *Cell Host & Microbe Preview*. doi: <https://doi.org/10.1016/j.chom.2022.03.025>.
8. Blazkova J*, **Huiling E***, et al. Correlation Between TIGIT expression on CD8⁺ T cells and Higher Cytotoxic Capacity. 2021. *J Infect Dis*. doi:10.1093/infdis/jiab155.
9. Sneller MS, **Huiling ED**, et al. 2020. Kinetics of Plasma HIV Rebound in the Era of Modern Antiretroviral Therapy. 2020. *J Infect Dis*. doi: <https://doi.org/10.1093/infdis/jiaa270>.
10. **Huiling E** et al. Impact of Treatment Interruption on HIV Reservoirs and Lymphocyte Subsets in Individuals Who Initiated Antiretroviral Therapy During the Early phase of Infection. 2019. *J Infect Dis*. doi: 10.1093/infdis/jiz100.

SELECTED HONORS AND AWARDS

2024	Schmidt Science Fellowship
2024	Harold M. Weintraub Graduate Student Award
2023	UCSF ImmunoX Community Award for leadership and commitment to gender equity
2023	NIH-UCSF iMicro T32 Grant Appointee
2023	UCSF Fletcher Jones Fellowship for excellence in research
2021-22	NIH R21 Grant (PI: Joseph Bondy-Denomy; \$242,000)
2021-24	UCSF Discovery Fellowship for excellence in research, leadership, and communication
2020	UCSF Benioff Center for Microbiome Medicine (BCMM) Graduate Fellowship
2020-23	NSF Graduate Research Fellowship
2019	NIH-UCSF ImmunoX T32 Grant Appointee
2019	International Aids Society New Investigator Scholarship
2017	NIH Post-baccalaureate Intramural Training Award (IRTA)
2017	Colgate Division of Natural Sciences and Mathematics Award
2016	NCI Research Training Award (CRTA)
2015-16	Colgate Student Leadership Development Fund Award
2013-17	Benton Scholars Program for leadership and global awareness

PROFESSIONAL DEVELOPMENT

- **Leadership and Management:** Schmidt Science Fellowship Leadership Program (Oct 2024, Feb 2025, June 2025), Postdoc Scientific Leadership and Management Course (UC, 2025)
- **Entrepreneurship and Biotech:** Venture Fellowship (Sofinnova Investments), Fifty 50 Program (Fifty Years VC), Design Thinking Course (Colgate and Stanford University)
- **Equity and Inclusion:** Inclusive Research Mentor Course (UCSF), Allyship Learning Program (UCSF)
- **Education and Teaching:** Seminar on College Teaching (UCD)