

# Sarah Gao

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## Education

### Master of Science in Biology

*University of San Francisco • San Francisco, CA*

*Overall GPA 4.00/4.00*

*August 2020 - December 2022*

*Dr. Naupaka Zimmerman's Lab*

My masters thesis explored the effects of extreme moisture changes and the addition of organic material on agricultural soil. Specifically, I examined how the soil microbial community and its ability to cycle nitrogen, an important element for crops, is affected, especially in the era of our ongoing climate crisis. More broadly, I'm interested in science communication and bridging the gap between policymakers, research bodies, and everyday people. I believe that we will need more inclusivity in decision making, accessibility to reliable science, and movement at all levels of society if we are to create a more resilient and equitable food system that works for everyone.

Relevant coursework included Environmental Policy, Bioinformatics, and Advanced GIS.

### Continuing Education

*August 2019 - May 2020*

*City College of San Francisco • San Francisco, CA*

*Overall GPA 4.00/4.00*

I took 2 semesters of relevant coursework in preparation for applying to MS programs, including Plant Biology, Ecology, General College Chemistry, General Biology, Introduction to Microbiology, Introduction to Genetics, Intro to Programming, and Programming Fundamentals: Python.

### Bachelor of Humanities and Arts in Industrial Design and Psychology

*August 2010 - May 2014*

*Carnegie Mellon University • Pittsburgh, PA*

*Overall GPA 3.79/4.00*

Robert C. Byrd Scholarship — awarded to students with the highest-scoring ACT or SAT results in Illinois with exceptional academic performance in high school

Dean's List in Fall 2010, Fall 2011

## Work Experiences

Before pursuing my MS in Biology, I worked for many years as a digital designer. My work at various companies, from small start-ups, to agencies, to large established brands, included creating product strategies, conducting user and market research, crafting high quality digital designs, producing hand-drawn illustrations, and envisioning future industry directions while working collaboratively in interdisciplinary teams.

My experience has also honed my project management skills, strengthened my creative problem solving, and allowed me to become a more effective designer and manager. Often, I mentored junior designers and led efforts internally to improve community outreach, philanthropy, and environmental impact at each company.

I'm currently still freelancing, delivering end-to-end design services and managing a wide range of clients.

**U.S. Geological Survey Interdisciplinary Data Scientist**

Jan 2023 -

San Francisco, CA

As someone with an interdisciplinary background in science and design, my role at the USGS is unique. I help to fill the gaps in communication and product strategy within the agency and broader US federal government conservation initiatives. My main priority is supporting the development of the American Conservation and Stewardship Atlas. This atlas aims to track progress towards the Biden administration's goal of conserving 30% of the US' land and water by 2030 (30x30) as part of the America the Beautiful Initiative. I also help improve the usability and messaging of other USGS efforts like the Protected Areas Database (PAD-US). With my specialized experience, I also strive to inject more product and design strategic thinking within the processes at the USGS by leading design office hours, giving presentations on best practices, and helping leadership develop better project management workflows.

**Google Freelance Senior Interaction Designer**

July 2021 - August 2021

San Francisco, CA

Given the short timeline of this contract due to my conflicting graduate student schedule, I focused primarily on helping the Design Studio team develop their annual Year in Search platform. I created a diverse array of high-level interaction directions, working closely with both the internal visual team and an external design agency. I also helped to craft a vision for the future of the platform to make it more scalable and expandable year after year.

**DoorDash Freelance Senior Product Designer**

July 2020 - September 2020

San Francisco, CA

While attending graduate school, I took on this 3-month contract at DoorDash where I worked on their Merchant Design Team, helping DoorDash merchants navigate, understand, and act upon their sales performance on the platform. This work included interviewing merchants on the platform, conducting walkthrough user tests of workable prototypes I created, and working collaboratively with their engineers, product managers, researchers, executives, and design brand teams.

**Punchcut Freelance Senior Interaction Designer**

May 2019 - August 2019

San Francisco, CA

While attending graduate school, I took on this 3-month contract at Punchcut, a bespoke design agency in San Francisco, where I created future concepts, strategies, and implementation-ready designs for large entertainment and technology companies. Despite being a contractor, I seamlessly integrated into their internal teams and took on additional responsibilities, including managing projects and in-house teams, mentoring junior designers, and leading client reviews.

**Crowdpac Senior Product Designer**

October 2017 - May 2019

San Francisco, CA

As part of a small design team, I designed new feature sets and helped create product roadmaps, collaborating closely with leadership, developers, and political, marketing, and customer support staff. My work included developing the product's information architecture, creating end-to-end designs, implementing designs with developers, crafting illustrations and brand tone, running QA of new product features, and writing copy for candidate support materials. I also managed the design and product team to coordinate efforts across multiple projects while providing both design and professional support. As the sole staff designer towards the later years, I was also integral to forming overall company strategy and product direction.

**Odopod Interaction Designer**

August 2014 - October 2017

San Francisco, CA

I designed solutions for diverse client needs, from full product systems to future strategies, collaborating with fellow designers, developers, strategists, and other stakeholders. Typical deliverables included wireframes, workable prototypes, information architectural systems, product strategies, full technically specced designs, and high-end presentations. Our clients ranged from small startups to larger companies such as Google, GoPro, and Genentech. In my spare time, I spearheaded community outreach initiatives within the company, including fundraising for social causes and opportunities to work with local youth programs.

**Venmo Product Design Intern**

May 2013 - August 2013

New York City, NY

I collaborated with other disciplines on various projects aimed at making peer-to-peer payment a more seamless experience. At the end of the summer internship, I presented a future concept demo app created with a fellow designer intern to leadership.

**Miso Product Design Intern**

May 2012 - August 2012

San Francisco, CA

At this small startup, I worked with the design team to develop their next app while conducting in-depth user research sessions including cognitive walkthroughs, A/B testing, and interviews. I also created and presented a concept app to help inspire the next direction for the company's product.

## ***Other Experiences***

**Hours of Action Leader**

November 2021 - Current

Climate Changemakers (remote)

Climate Changemakers is a community of volunteers from around the world taking political action together to advocate for meaningful climate action. As a volunteer leader, I help members of the community during our weekly Hours of Action to take a specific, directed action to address the climate crisis, such as advocating for EPA regulations or building electrification.

**Midstory Science Fellow & Podcast Creator**

May 2021 - Current

Toledo, OH (remote)

A 501(c)3 non-profit, Midstory is a thinkhub giving voice to the stories of the Midwest through multimedia journalism and creative storytelling. As their first science fellow, I am writing and recording a podcast called Greener Pastures that seeks to highlight resilience builders and innovative approaches to the climate crisis based in the Midwest. I also helped organize and create assets for Erie Hack, a bi-annual hackathon finding solutions for Lake Erie's many challenges. Additionally, I help to develop grant proposals and mentor interns.

**Volunteer Docent**

April 2015 - September 2021

California Academy of Sciences • San Francisco, CA

I connected with a wide diversity of guests about the importance of the natural sciences, research, biodiversity, and environmental stewardship. Using engaging demonstrations, inclusive language, and appropriately tailoring messaging for specific audiences, I taught guests of all ages about scientific phenomena and principles, breaking down complex concepts for effective communication.

**Science Illustrator**

May 2022 - October 2022

*California Academy of Science*

Working with CAS' scientists, writers, and a fellow illustrator, we're producing a children's coloring book for communities in São Tomé and Príncipe highlighting native species and the biodiversity found on the islands.

**Presidential Management Fellows Program Finalist**

December 2021 - August 2022

*U.S. Office of Personnel Management*

PMF finalists are selected from thousands of applicants around the country from a wide diversity of backgrounds based on an assessment testing their personalities, workplace responses, problem solving skills, and writing skills. As a PMF finalist, I'm given the opportunity to embark on a 2 year fellowship within federal departments. This includes training and developmental programs catered towards leadership and public service.

**Department of Biology Research Lab Volunteer**

August 2019 - February 2020

*University of San Francisco • San Francisco, CA*

I volunteered to assist graduate student Derek Newberger with his thesis project in order to gain wet lab and research experience prior to applying for MS programs myself. I helped with tasks such as culturing fungal and bacterial samples, running PCR, performing gel electrophoresis, and extracting DNA.

**Grassroots Organizer & Volunteer**

May 2017 - October 2017

*Friends of the Earth*

After applying for and undergoing activism training in Washington, DC, I recruited and worked with members of the community to take action on environmental issues and send messages to our representatives.

## **Teaching Experiences**

**Graduate Bioinformatics Teaching Assistant**

August 2021 - December 2021

*University of San Francisco • San Francisco, CA*

I helped guide students through foundational bioinformatics skills, primarily working in R, Bash, Markdown, and git. My responsibilities included grading and providing feedback for weekly programming projects, helping students work through their projects during regular office hours or through one-on-one sessions, and fostering a welcoming and safe learning environment for students, many of which were new to programming.

**Genetics I Lab Teaching Assistant**

January 2021 - May 2021

*University of San Francisco • San Francisco, CA*

I taught a section of the undergraduate Genetics I course, composed mostly of upperclassmen, which included creating and giving pre-lab lectures, guiding students through the lab activities themselves, and advising students one-on-one during open office hours. I also graded their lab assignments, helping them to refine both their writing and science reasoning skills. This lab was particularly challenging given the remote modality of the course during the COVID-19 pandemic, but I found it rewarding that students were still able to learn effectively and appreciated my guidance throughout the process.

## **Design Studio II Teaching Assistant**

*Carnegie Mellon University • Pittsburgh, PA*

*January 2010 - May 2010*

I supported the freshman class with personalized project feedback, working individually with students to think through each step of the design process. I also assisted the course's professors in crafting and planning projects that encouraged creative exploration and self discovery.

## **Awards**

### **Whitehead Fellowship Recipient**

*University of San Francisco*

*May 2022 - August 2022*

This competitive summer fellowship supported student research and selected recipients based on academic standing, quality of proposed research, and the caliber of the proposal itself.

### **Katherine S. McCarter Graduate Student Policy Award Recipient**

*Ecological Society of America*

*January 2022 - April 2022*

During this fellowship, I learned about the federal policy process and how to be an effective lobbyist as a scientist. With my fellow Californian graduate students in my award cohort, I met with six representatives' offices in both the House and the Senate to lobby on behalf of ESA for increased funding for the National Science Foundation in fiscal year 2022.

### **Wildlife Rehabilitation Volunteer**

*Thailand and Guatemala*

*June 2014, December 2015*

I helped care for wounded, displaced, and abused wildlife at centers in Thailand and Guatemala. Across these experiences, I worked with a wide range of animals, from macaws to sun bears to Asian elephants, alongside fellow volunteers of all walks of life from around the world.

## **Skills**

### **Science Skills**

Experimental design  
Soil sampling + analysis  
Elemental analysis  
Polymerase chain reaction (PCR)  
qPCR  
Gel electrophoresis  
DNA + RNA extraction  
Optical microscopy  
Bacterial and fungal culture  
Microbial respiration  
Literature review  
Scientific writing

### **Design Skills**

Adobe Creative Suite  
Sketch + Figma  
Keynote  
Digital prototyping  
User testing  
Sketching  
Illustration  
Design workshops  
Graphic design  
Project management  
Social media assets

### **Computational Skills**

R + R Markdown  
Bash  
Python  
Git / Github  
Bioinformatics pipelines  
ArcGIS

### **Communication Skills**

Policy briefs + analyses  
Political lobbying  
Science communication  
Grant proposals

# **Presentations**

## **Ecological Society of America Annual Meeting**

*August 2022*

*Montréal, Quebec, Canada*

“Microbes Out of Water: Drying-Rewetting Stress on Organic Farm Soil”

My abstract for my MS thesis work was accepted for this year’s ESA annual meeting, the world’s largest gathering of ecologists, which I will present as a poster in person.

## **USF Dean’s Circle Presentation**

*March 2022*

*San Francisco, CA*

“Microbes Out of Water: Drying-Rewetting Stress on Organic Farm Soil”

As part of an event to highlight USF’s scholarly student work with supporters of USF, I presented my MS thesis work as a poster, speaking with guests about the importance of understanding soil ecology.

## **Guest Presenter**

*2017 - Current*

In my free time, I reach out to educators who are interested in having me as a guest presenter. Given my diverse background, I’ve presented on topics like basic design principles, soil ecology, art and science, climate change, and biodiversity to classes ranging from elementary school kids to undergraduate and graduate students.

## **USF Creative and Academic Research Day (CARD)**

*May 2021, May 2022*

*San Francisco, CA*

“Microbes Out of Water: Drying-Rewetting Stress on Organic Farm Soil”

I presented my ongoing research around soil ecology as part of USF’s annual CARD event highlighting student research. The first year in 2021 was a virtual presentation whereas the second in 2022 was an in-person poster presentation. Due to the public nature of the event, I focused on making my research, which includes some relatively complex scientific concepts, more accessible to a general audience.

# **Affiliations**

## **Climate Changemakers**

*November 2021 - Current*

Volunteer Action Lead

## **Women of Color in Ecology and Evolutionary Biology**

*August 2021 - Current*

Mentor and Mentee

## **Ecological Society of America**

*January 2021 - Current*

Communication & Engagement Section

## **University of San Francisco**

*June 2022 - Current*

Laudato Si Initiative (Sustainability and Equity Group) Working Group Member