Natalie M. Linton

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Professional Experience

California Department of Public Health (Vancouver, WA, USA; remote)

Jan 2022 –Apr 2025   *Epidemiologist and Statistician Modeler*

- Developed a scenario model to assess the impact of interventions on congenital syphilis incidence and hospitalization charges.
- Led modeling efforts in mpox outbreak response, including tracking local and international metrics, considerations for clustering of cases, and estimation of epidemiological parameters.
- Cultivated engagement with local epidemiologists and decision-makers, delivering education and technical assistance around disease modeling in California; grew meeting attendance by 160%.
- Amplified cross-jurisdiction collaboration with West Coast states; co-founded and organized the Western States Modeling Symposium in 2022 and 2023, with ~200 attendees each year.
- Fostered team organization for best practices in coding and document management.
- Examined the relationship between coronavirus disease 2019 (COVID-19) pediatric incidence rates by vaccination status among in California considering different variant periods and vaccine doses.
- Collaborated on behavioral modeling and wastewater-based R-effective model generation efforts.

Washington State Department of Health (Shoreline, WA, USA)

Nov 2016 –Sep 2017   *Infectious Disease Surveillance Epidemiologist*

Member of the vaccine-preventable disease (VPD) team. Worked closely with team members to review and classify VPD case reports. Additionally served as lead investigator for prion disease surveillance.

- Led data tracking and analysis efforts for a statewide mumps outbreak investigation.
- Explored pertussis vaccination among teen mothers to assess compliance with recommendations.

Jul 2015 –Oct 2016   *CDC/CSTE Applied Epidemiology Fellow*

Fellowship administered by the Council of State and Territorial Epidemiologists (CSTE) and funded by the Centers for Disease Control and Prevention (CDC).

- Obtained a ~$30,000 grant and spearheaded the creation of a statewide epidemiologic profile on hepatitis C virus infections. Managed contributions, analyzed data, wrote, and designed the final report. Collaborated with stakeholders and coordinated presentations to disseminate findings.
- Evaluated the Washington State hepatitis C surveillance system following national guidelines.
- Worked on infectious disease outbreak investigations (foodborne, Zika, and acute flaccid myelitis).
- Investigated causes of death for refugees in Washington State and linked records to determine whether refugee women were referred for perinatal hepatitis B case management.

Centers for Disease Control and Prevention (La Grande, OR, USA; field deployed)

Jul 2011 –Jul 2013   *Public Health Associate*

Two-year fellowship as a field assignee at the Center for Human Development, Inc., in Oregon.

- Spearheaded implementation of an evidence-based chronic disease self-management program (CDSMP). Scheduled and taught workshops, coordinated volunteer leaders, and promoted regional sustainability of the program through quarterly regional meetings and yearly leader trainings.
- Obtained a grant for $5,000/year for 3 years to support marketing and training expenses for CDSMP in 4 counties, as well as a $12,000 grant to develop and implement a media campaign utilizing influential community members to raise awareness for colorectal cancer screening.
- Engaged community partners in mapping and prioritizing gaps in community resources for families of children and youth with special health needs, then developed and implemented action plans to address those gaps as part of an expansion project for a care coordination home visiting program.

Education

2021   **Hokkaido University** (Sapporo, Japan)
PhD in Social Medicine. Advisor: Hiroshi Nishiura. Focus on infectious disease modeling.

2018   **University of Oviedo** (Oviedo, Spain)
MSc in Public Health in Disasters. Joint degree with the Catholic University of Louvain (Brussels, Belgium).

2015   **Oregon State University** (Corvallis, OR, USA)
MPH in Epidemiology.

2011   **Ritsumeikan University** (Kyoto, Japan)
BA in International Relations. Dual degree program with American University.

2010   **American University** (Washington, DC, USA)
BA in International Studies. Dual degree program with Ritsumeikan University.

Technical Assistance and Consulting

Ministry of Health, Labour and Welfare (Tokyo, Japan)

Member, COVID-19 Cluster Response Team, Feb–Jun 2020
- Performed ad hoc analyses to meet COVID-19 pandemic response needs, including estimation of end of epidemic probabilities for case clusters and comparing risk of death and molecular testing practices between countries.

Veterans Education and Research Association of Northern New England, Inc. (Shoreline, WA, USA; remote)

Independent contractor, clinical epidemiology, Jul 2015–Apr 2016
- Worked remotely analyzing data and improving visualizations for research on clinical outcomes among veterans.

International Centre for Diarrhoeal Disease Research, Bangladesh (Dhaka, Bangladesh)

Boren Fellow, Dec 2014–Apr 2015
- Funded by the Boren Awards for International Study to collaborate on chronic disease research and provide training for staff at icddr,b. Additionally supported for Bangla language study with the Bangla Language Institute.

Association of Maternal and Child Health Programs (Portland, OR, USA)

Graduate Student Epidemiology Program Intern, Jun 2020–Sep 2020
- Deployed to the Oregon Center for Children and Youth with Special Health Needs (OCCYSHN). Assessed the association between maternal health outcomes and having a child with special health needs using Pregnancy Risk Assessment Monitoring System (PRAMS) data.

Oregon State University (Corvallis, OR, USA)

Research Assistant, Oct 2013–Dec 2014
- Responsible for conducting and analyzing qualitative interviews as well as managing and analyzing project data for statewide implementation of the Arthritis Foundation Walk With Ease program.

Graduate Research Assistant, Mar–Jun 2014
- Conducted literature reviews, researched devices to measure occupational exposures, prepared presentations.

Skills, Service, and Professional Development

Technical expertise
- Scripting and programming languages: R, Stan; basic familiarity with Julia and Python.
- Data analysis tools and environments: RStudio Workbench, Databricks, Azure DevOps, GitHub.
- Markup languages: Markdown; familiar with LaTeX, HTML, XML.

Scientific service
2020–present   Peer reviewer for academic journals in epidemiology, public health, and medicine.
2014–2015   Curriculum committee, College of Public Health and Human Sciences, Oregon State University.

Mentorship
2024–2025   Modeling Analyst, California Department of Public Health.
2023   MPH Candidate and Intern, California Department of Public Health.

Scientific workshops
- Participant, Workshop on Standardizing the Conduct of Nonrandomized, Clinical Cohort Studies in Epidemic Settings. September 14–15, 2023. Bethesda, Maryland, USA.
- Participant, Hacking AMR 2019. December 13–15, 2019. Stockholm, Sweden.

Professional memberships and networks
- Council of State and Territorial Epidemiologists, 2015–2017; 2023–2025.
- BlueDot Biosecurity Pandemics Course participant. 2023–2024.
- Emerging Leaders in Biosecurity Initiative (ELBI) alum. Class of 2023.
- Japan–U.S. Science Communication & Policy Fellowship Network Program alum. Inaugural cohort. Class of 2022.

Languages
- English (native)
- Spanish (advanced) – Spanish Healthcare Interpreter Training – Central Oregon Community College, 2014. Volunteer, Clinica Esperanza (Roatán, Honduras), 2013. Triaged patients and assisted with pharmacy work.
- Japanese (advanced) – Japanese Language Proficiency Test Level N1 – Japan Foundation, September 2011.
- Elementary proficiency with French, German, and Bangla.

Funding and Awards

2022	Otsuka Memorial Award, Hokkaido University.
2018–2021	Research Scholarship, Japan Ministry of Education, Culture, Sports, Science, and Technology (MEXT).
2019	Best Poster Presentation, Stanley Ho Centre for Emerging Infectious Diseases Annual Scientific Meeting 2019, The Chinese University of Hong Kong.
2019	24th Summer Institute in Statistical Genetics Scholarship, University of Washington.
2017–2018	Erasmus Mundus Scholarship, Erasmus Mundus: Public Health in Disasters (EMPHID).
2014–2015	Boren Fellowship, Boren Awards for International Study.
2013–2015	Graduate Laurels Scholarship; Warren & Frederica Schad Fellowship, Oregon State University.
2012	All There Is, Is Us and Us Award: For demonstrating a strong commitment to thinking about and doing what is good for the health department and community, Center for Human Development, Inc.
2009–2010	Honors Scholarship for International Students, Japan Student Services Organization (JASSO).
2007–2009	Presidential Scholarship; Dean's List for Academic Excellence, American University.

Publications

Peer-reviewed publications

2025
1. Linton NM, Quint JJ, Chen J, et al. Pediatric SARS-CoV-2 Incidence in California by Vaccination Status, December 2021–April 2023. *Ped Open Sci*. 2025;1(1):1–11.
2. Ricotta E, Carilla FAB, Angelli-Nichols S, et al. Observational research in epidemic settings: a roadmap to reform. *BMJ Global Health*. 2025;10 e017981.
3. Ravuri S, Burnor E, Routledge I, et al. Estimating effective reproduction numbers using wastewater data from multiple sewersheds for SARS-CoV-2 in California counties. *Epidemics*. 2025;e100803.

2024
4. Charniga K, Park SW, Akhmetzhanov AR, et al. Best practices for estimating and reporting epidemiological delay distributions of infectious diseases using public health surveillance and healthcare data. *PLoS Comput Biol*. 2024;20(10) e1012520.
5. Ponce L, Linton NM, Toh WH, et al. Comparing epidemiological parameters of the 2022 global mpox outbreak with historical case records: A meta-analysis and statistical modeling of the incubation and serial interval distributions. Forthcoming. *Emerging Infectious Diseases*.

6. Akhmetzhanov AR, Lee HJ, Jung S-m, <u>Linton NM</u>, et al. Reconstruction and analysis of the transmission network of African swine fever in People's Republic of China, August 2018–September 2019. Epidemiology & Infection. 2024;152(e27).

2022 7. <u>Linton NM</u>, Akhmetzhanov AR, Nishiura H. Correlation between times to SARS-CoV-2 symptom onset and secondary transmission undermines epidemic control efforts. *Epidemics*. 2022;41(100655).

8. <u>Linton NM</u>, Lovell-Read FA, Southall E, et al. When do epidemics end? Scientific insights from mathematical modelling studies. *Centaurus*. 2022;64(1) 31-60.

9. Akhmetzhanov AR, Cheng H-Y, <u>Linton NM</u>, Ponce L, Jian S-W, Lin H-H. Transmission dynamics and effectiveness of control measures during a surge of COVID-19 cases in Taiwan, April–August 2021. *Emerg Infect Dis*. 2022;28(10):2051-2059.

10. Kobayashi T, Yoshii K, <u>Linton NM</u>, et al. Age dependence of the natural history of infection with severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2): An analysis of Diamond Princess data. *Int J Infect Dis*. 2022;115:109-115.

11. Hayashi K, Kayano T, Anzai A, et al. Assessing public health and social measures against COVID-19 in Japan from March to June 2021. *Frontiers in Medicine*. 2022; 9:937732.

12. Miyama T, Jung S-m, Hayashi K, et al. Phenomenological and mechanistic models for predicting early transmission data of COVID-19. *Math Biosci Eng*. 2022;19(2) 2043-2055.

2021 13. <u>Linton NM</u>, Jung S-m, Nishiura H. Not all fun and games: Potential incidence of SARS-CoV-2 infections during the Tokyo 2020 Olympic Games. *Math Biosci Eng*. 2021;18(6)9685-9696.

14. <u>Linton NM</u>, Akhmetzhanov AR, Nishiura H. Localized end-of-outbreak determination for coronavirus disease 2019 (COVID-19): examples from clusters in Japan. *Int J Infect Dis*. 2021;105:286-292.

15. Akhmetzhanov AR, Mizumoto K, Jung S-m, et al. Estimation of the actual incidence of coronavirus disease (COVID-19) in emergent hotspots: the example of Hokkaido, Japan during February-March 2020. *J Clin Med*. 2021;10(11):2392.

2020 16. <u>Linton NM</u>, Kobayashi T, Yang Y, et al. Incubation period and other epidemiological characteristics of 2019 novel coronavirus infections with right truncation: A statistical analysis of publicly available case data. *J Clin Med*. 2020;9(2):538.

17. <u>Linton NM</u>, Keita M, Moitinho de Almeida M, et al. Impact of mass vaccination campaigns on measles transmission during an outbreak in Guinea, 2017. *J Infect*. 2020;80(3):1-7.

18. <u>Linton NM</u>, DeBolt C, Newman LP, et al. Mortality rate and causes of death among refugees resettled in Washington State, 2006–2016. *J Immigr Minor Heal*. 2020;22:3-9.

19. Nishiura H, <u>Linton NM</u>, Akhmetzhanov AR. Serial interval of novel coronavirus (COVID-19) infections. *Int J Infect Dis*. 2020;93:284-286.

20. Nishiura H, <u>Linton NM</u>, Akhmetzhanov AR. Initial cluster of novel coronavirus (2019-nCoV) infections in Wuhan, China is consistent with substantial human-to-human transmission. *J Clin Med*. 2020;9(2):488.

21. Kobayashi T, Jung S-m, <u>Linton NM</u>, et al. Communicating the risk of death from novel coronavirus disease (COVID-19). *J Clin Med*. 2020;9(2):580.

22. Anzai A, Kobayashi T, <u>Linton NM</u>, et al. Assessing the impact of reduced travel on exportation dynamics of novel coronavirus infection (COVID-19). *J Clin Med*. 2020;9(601).

23. Nishiura H, Jung S, <u>Linton NM</u>, et al. The extent of transmission of novel coronavirus in Wuhan, China, 2020. *J Clin Med*. 2020;9(2):330.

24. Jung S-m, Akhmetzhanov AR, Hayashi K, et al. Real-time estimation of the risk of death from novel coronavirus (COVID-19) infection: Inference using exported cases. *J Clin Med*. 2020;9(2):523.

25. Kinoshita R, Anzai A, Jung S-m, et al. Containment, contact tracing and asymptomatic transmission of novel coronavirus disease (COVID-19): A modelling study. *J Clin Med*. 2020;9(10):3125.

26. Jung S-m, Kinoshita R, Thompson R, et al. Epidemiological identification of a novel pathogen in real time: Analysis of the atypical pneumonia outbreak in Wuhan, China, 2019–2020. *J Clin Med* 2020;9(3):637.

27. Nishiura H, Kobayashi T, Yang Y, et al. The rate of underascertainment of novel coronavirus (2019-nCoV) infection: Estimation using Japanese passengers data on evacuation flights. *J Clin Med*. 2020;9(2):419.

28. Kamiya H, Fujikura H, Doi I, et al. Epidemiology of COVID-19 outbreak on cruise ship quarantined at Yokohama, Japan, February 2020. *Emerg Infect Dis*. 2020;26(11):2591-2597.

29. Nishiura H, Kobayashi T, Miyama T, et al. Estimation of the asymptomatic ratio of novel coronavirus infections (COVID-19). *Int J Infect Dis*. 2020;94:154–155.

30. Oshitani H, The Expert Members of The National COVID-19 Cluster Taskforce at The Ministry of Health, Labour and Welfare, Japan. Cluster-based approach to coronavirus disease 2019 (COVID-19) response in Japan, February to April 2020. *Japan J Infect Dis*. 2020;73(6):491–493.

2017 31. Bonwitt J, Poel A, DeBolt C, et al. Acute flaccid myelitis among children — Washington, September–November 2016. *MMWR*. 2017;66(31):826-829.

2016 32. Conte KP, Odden MC, Linton NM, Harvey MS. Effectiveness of a scaled-up arthritis self-management program in Oregon: Walk with ease. *Am J Public Health*. 2016;106(12).

33. Biswas T, Islam MS, Linton NM, Rawal LB. Socio-economic inequality of chronic non-communicable diseases in Bangladesh. *PLoS One*. 2016;11(11).

34. Kawakami VM, Bottichio L, Angelo K, et al. Outbreak of multidrug-resistant Salmonella infections linked to pork—Washington, 2015. *MMWR*. 2016;65(14):379–381.

Book chapters

Nishiura H, Kobayashi T, Anzai A, Aihara K, Linton NM. Mathematical modeling of infectious disease epidemics. Nippyo, 2022. ISBN-13: 978-4535787599 [In Japanese]

Nishiura H. An introduction to data analysis for infectious disease epidemiology. Kinpodo, 2021. Co-author for chapters 2 and 11. ISBN-13: 978-4765318822. [In Japanese]

Students of The Gary and Jerri-Ann Jacobs High Tech High. San Diego Bay: A Story of Exploitation and Restoration. Eds. Natalie Linton, Gwen Michael-Jones. San Diego: California Sea Grant College Program, 2007. ISBN-10: 1888691174.

Technical reports

Estimating the effectiveness of the COVID-19 vaccine BNT162b2 (Pfizer/BioNTech) by applying a mathematical model to surveillance data (Version 1). September 2021. Collaborator. National Institute of Infectious Diseases (NIID), Japan [In Japanese]

Quantitative evaluation of the effects of priority measures for the prevention of spread of infectious diseases and emergency declarations on the epidemic dynamics of COVID-19 (Provisional Version). June 2021. Contributing author. National Institute of Infectious Diseases (NIID), Japan [In Japanese]

Epidemiologic profile of viral hepatitis C in Washington State. June 2016. Washington State Department of Health. Lead contributor; designer and editor. DOH 420-159.

Scientific articles [not peer reviewed]

Linton NM, Nishiura H. Key characteristics of COVID-19 as revealed by patterns of secondary infection. *Jikken Igaku*. 2021;39(2). [In Japanese]

Linton NM, Nishiura H. Mathematics behind the end of epidemics. *Suugaku Seminar*. 2020;9. [In Japanese]

Preprints [not peer reviewed]

Park SW, Akhmetzhanov AR, Charniga K, Cori A, Davies NG, Dushoff J, et al. Estimating epidemiological delay distributions for infectious diseases. *medRxiv*. 2024. doi:10.1101/2024.01.12.24301247

Piantham C, Linton NM, Nishiura H, Ito K. Estimating the elevated transmissibility of the B.1.1.7 strain over previously circulating strains in England using GISAID sequence frequencies. *medRxiv*. 2021. doi:10.1101/2020.07.12.199760

Akhmetzhanov AR, Linton NM, Nishiura H. Rising evidence of COVID-19 transmission potential to and between animals: do we need to be concerned? *medRxiv*. 2020. doi:10.1101/2020.05.21.20109041

Presentations

Organization of conferences and symposia

Developer and organizer of the Western States Modeling Symposium, 2022–2024.

Invited presentations

When do epidemics end?" Global Health Seminar Series, Oregon State University. November 17, 2022. Virtual.

Conference presentations

2024 "Scenario projections of congenital syphilis cases in California, 2023–2030." *West Coast Epidemiology*. September 26, 2024. Oral presentation.

"Scenario projections of congenital syphilis cases in California, 2023–2030." *STI Prevention Conference*. September 18, 2024. Poster presentation (late breaker).

2022 "COVID-19 case rates by vaccination status and waning immunity among children and adolescents ages 5-17 in California." *ICEID 2022*. August 8, 2022. Oral presentation (late-breaker).

2021 "Correlation between times to SARS-CoV-2 symptom onset and secondary transmission undermines epidemic control efforts." *Epidemics[8]*. December 1, 2021. Oral presentation.

"Correlation between times to SARS-CoV-2 symptom onset and secondary transmission undermines epidemic control efforts." *5th Workshop on Viral Dynamics*. October 4-5, 2021. Poster presentation.

"Not all fun and games: Potential incidence of SARS-CoV-2 infections during the Tokyo 2020 Olympic games." *Japan Society for Mathematical Biology Conference 2021*. September 14, 2021. Poster presentation.

"Variation in the serial interval distribution among reported cases in Japan." *Society for Mathematical Biology 2021*. June 16, 2021. Oral presentation.

"First and second wave serial interval of COVID-19 in Japan." *The 91st Annual Meeting of the Japanese Society for Hygiene*. March 8, 2021. Oral presentation.

"Localized end-of-outbreak determination for COVID-19: Examples from clusters in Japan." *The 31st Annual Scientific Meeting of the Japanese Epidemiological Association*. January 28, 2021. Oral presentation.

2020 "Localized end-of-outbreak determination for COVID-19: Examples from clusters in Japan." *COVID-19 Dynamics & Evolution Virtual Conference Series*. October 19, 2020. Oral presentation.

"Reconstructing the transmission network of African swine fever in the People's Republic of China, August 2018–September 2019." *The 90th Annual Meeting of the Japanese Society for Hygiene*. *cancelled due to pandemic

2019 "Estimation of the effective reproduction number of a measles outbreak in Guinea, 2017." *Epidemics[7]*. December 3-6, 2019. Poster presentation.

"Estimation of the effective reproduction number of a measles outbreak in Guinea, 2017." *The 89th Annual Meeting of the Japanese Society for Hygiene*. Oral presentation.

"Estimation of the effective reproduction number of a measles outbreak in Guinea, 2017." *Stanley Ho Centre for Emerging Infectious Diseases Annual Scientific Meeting 2019*. June 11, 2019. Poster presentation.

2017 "Tdap vaccination status among teenage mothers in Washington State, 2005-2015." 2017 *CSTE Annual Conference*. Oral presentation.

"*Salmonella I 4,5,12:i:-* infections associated with pork, Washington State, 2015 and 2016." *AZID*. July 19, 2017. Oral presentation.

2016 "Reporting of pregnancy in refugee women infected with hepatitis B for case management, Washington State 2006–2015." *Washington State Public Health Association Joint Conference on Health*. October 5, 2016. Oral presentation.

"Hepatitis in Washington State—From Babies to Baby Boomers. Washington State Public Health Association Annual Conference." *Washington State Public Health Association Joint Conference on Health*. October 5, 2016. Oral presentation.

"Outbreak of multidrug-resistant *Salmonella I 4,[5],12:i:-* infections linked to pork in Washington State, 2015." *2016 CSTE Annual Conference*. Oral presentation.

"*Salmonella I 4,[5],12:i:-* infections linked to pork–Washington State, 2015–2016." *Washington Zoonotic and Vectorborne-Disease Workshop*. June 21, 2016. Oral presentation.

"Completeness and consistency of reporting pregnancy for refugee women infected with hepatitis B to local health jurisdictions for case management in Washington State, 2006–2015." *2016 North American Refugee Health Conference*. June 12, 2016. Niagara Falls, NY, USA. Oral presentation.

"Causes of mortality among refugees resettled to Washington State, 2006–2015." *2016 North American Refugee Health Conference*. June 12, 2016. Niagara Falls, NY, USA. Poster presentation.

2015 "Evaluation of Hepatitis C Surveillance in Washington State." *2015 International Society for Disease Surveillance Conference: Harnessing Data to Advance Health Equity*. Poster presentation.

2014 "Grand Ronde Walks With Ease: a tribal-university partnership to offer a walking program for elders with arthritis." *Contemporary Northwest Tribal Health Conference*. March 2014, USA. Oral presentation.

"Who completes Walk With Ease classes in Oregon?" *Oregon Public Health Association Annual Conference*. Corvallis, OR, USA. October 2014. Poster presentation.

"Leishmaniasis outbreak investigations worldwide, 2000-2014." *Oregon State University Inaugural Global Health Center Symposium*. Corvallis, OR, USA. June 2014. Poster presentation.

2013 "Impact of regulatory changes on chlamydia testing and trends in Union County, Oregon." *Oregon Public Health Association Annual Conference*. Corvallis, OR, USA. October 2013. Poster presentation.

"Living Well with Chronic Conditions: program implementation in northeast Oregon." *Oregon Self-Management Forum*. Portland, OR, USA. May 2013. Poster presentation.

Community Service and Other Work

2023–present	Member, Underwater Recovery Team, Clark County Sheriff's Office Search and Rescue, WA, USA.
2023–present	Member, Medical Reserve Corps, Clark County, WA, USA.
2023–present	Mountain Steward, Mount Saint Helens Institute, Amboy, WA, USA.
2022–present	Hike Leader; Assistant Canyoneering and Backcountry Skiing Leader, Mazamas, Portland, OR, USA.
2021–present	Freelance Japanese to English Translator, Remote, Vancouver, WA, USA.
2018–2021	Freelance Private English Tutor, Sapporo and Kyoto, Japan.
2017	Volunteer Gardener, Seattle Japanese Garden, Seattle, WA, USA.
2016–2017	Summit Ambassador, Summit at Snoqualmie, Snoqualmie Pass, WA, USA.
2013	Student Volunteer, Clínica Esperanza, Roatán, Honduras.
2013	Recruit, Eastern Oregon Search and Rescue, La Grande, OR, USA.
2012–2013	Volunteer, American Red Cross, La Grande, OR, USA.
2010–2011	Private English Tutor, R-pool Inc., Kyoto, Japan.
2008–2009	Public Safety Aid/Field Trainer, American University, Washington, DC, USA.
2008	Intern, Freer and Sackler Galleries, Washington, DC, USA.
2006–2008	Hydrologic Technician, United States Geological Survey, San Diego, CA, USA.
2006	Summer Intern, United States Geological Survey, San Diego, CA, USA.
2004–2007	Volunteer, Friends of the Library, San Diego Public Library, San Diego, CA, USA.

Certifications

Diving	Advanced Open Water (2013), PADI.
	Rescue Diver (2023), Nitrox and Drysuit Diver (2024), Public Safety Diver (in progress), NAUI.
First Aid	First Aid/CPR and AED (2024–2026) American Heart Association.