

ZIYUAN ZHANG

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EDUCATION

University of California, Berkeley	Expected May 2029
Doctor of Philosophy in Epidemiology (Infectious Disease track)	
Harvard University	May 2025
Master of Science in Epidemiology (Infectious Disease track)	
Cumulative GPA: 3.96/4.00	
University of California, Berkeley	May 2023
Bachelor of Arts in Data Science (Human and Population Health concentration) and Public Health	
Cumulative GPA: 3.84/4.00	

MANUSCRIPTS

Published

1. Li G, Hanna C, Dinges LM, Allen-Rhoades WA, Kohorst MA, Levy ER, Van Dorn CS, **Zhang Z**, Gaensbauer JT. Seraph® 100 Microbind® utilization in immunocompromised toddler with adenovirus viremia in conjunction with continuous renal replacement therapy and extracorporeal membrane oxygenation. *IDCases*. 2025;42:e02380. <https://doi.org/10.1016/j.idcr.2025.e02380>
2. Li G, Reis CA, Kruc RM, **Zhang Z**, Streck NT, Ristagno EH, Mandrekar J, Wolf MJ, Gaensbauer JT, Patel R. 16S Ribosomal RNA Gene PCR and Sequencing for Pediatric Infection Diagnosis, United States, 2020–2023. *Emerging Infectious Diseases*. 2025;31(13):129–136. <https://doi:10.3201/eid3113.241101>
3. **Zhang Z**, Jalali MS, Ghaffarzadegan N. Behavioral Dynamics of Epidemic Trajectories and Vaccination Strategies: A Simulation-based Analysis. *Journal of Artificial Societies and Social Simulation*. 2025;28(1):3. <https://doi.org/10.18564/jasss.5583>
4. Rajwal S, **Zhang Z**, Chen Y, Rogers H, Sarker A, Xiao Y. Applications of Natural Language Processing and Large Language Models for Social Determinants of Health: Protocol for a Systematic Review. *JMIR Research Protocols*. 2025. <https://doi.org/10.2196/66094>
5. Stringfellow EJ, Lim TY, DiGennaro C, **Zhang Z**, Paramasivam P, Bearnot B, Humphreys K, Jalali MS. Long-Term Effects of Increasing Buprenorphine Treatment Seeking, Duration, and Capacity on Opioid Overdose Fatalities: A Model-based Analysis. *Journal of Addiction Medicine*. 2023;17(4):439–446. <https://doi.org/10.1097/ADM.0000000000001153>
6. Stringfellow EJ, Lim TY, Dong H, **Zhang Z**, Jalali MS. The Association Between Longitudinal Trends in Receipt of Buprenorphine for Opioid Use Disorder and Buprenorphine-Waivered Providers in the United States. *Addiction*. 2023;118(11):2215–2219. <https://doi.org/10.1111/add.16291>

Preprint

7. **Zhang Z**, Boyer C, Lipsitch M. Use of the Test-Negative Design to Estimate the Protective Effect of a Scalar Immune Measure: A Simulation Analysis. *medRxiv*. 2024. <https://doi.org/10.1101/2024.11.22.24317757>

In Preparation

8. **Zhang Z**, Xiao Y, Yip PSF, Cerel J, Mann JJ. Suicide Deaths and Intention Disclosure: Trend Analysis in the US From 2003–2022.

RESEARCH EXPERIENCE

University of California, Berkeley	Sept 2021-Present
Graduate Student Researcher	
• Estimating Infection Under-Reporting Fractions from Phylogenetic Trees: Bias Analysis and Validation with Kaiser Respiratory Virus Data	Aug 2025-Present

- Supervisor: Joseph A. Lewnard, Ph.D.
 - Developed and applied phylogenetic methods to estimate infection under-reporting, performed bias analyses, validated results with Kaiser respiratory virus data, and contributed to manuscript preparation.
- Systematic Review and Meta-analysis of Suicide Prevention Among College Students Before and During the COVID-19 Pandemic Sept 2021-May 2023
 - Supervisors: Timothy T. Brown, Ph.D.; Yunyu Xiao, Ph.D.
 - Conducted the systematic review and meta-analysis; completed title and abstract screening, full text review, and data extraction; assessed literature risks using ROBINS-I and RoB2 tools.
- Literature Review and Meta-analysis of Pediatric Outpatient Infections Attributable to Streptococcus Pneumoniae Nov 2022-Jan 2023
 - Supervisor: Joseph A. Lewnard, Ph.D.
 - Conducted literature review and data extraction.

Mayo Clinic Jan 2024-Present

Division of Pediatric Infectious Diseases

Research Volunteer

Collaborator: Guyu Li, M.D.

- In Vitro Test: Treating *Staphylococcus Epidermidis* Biofilm-Coated Screws with Phage K Dec 2024-Present
 - Designed statistical analysis plan; analyzed and visualized data with Python.
- 16S Ribosomal RNA Gene PCR and Sequencing of Normally Sterile Body Fluids and Tissues for Pediatric Infection Diagnosis, United States, 2020-2023 Mar 2024-Jun 2024
 - Designed statistical analysis plan; analyzed and visualized data with R; drafted and reviewed abstract for conference and manuscript.
- First Use of Seraph® 100 Microbind® Blood Filter in an Immunocompromised Toddler with Viral Viremia on CRRT and ECMO Jan 2024-May 2024
 - Analyzed and visualized data with Python; drafted and reviewed manuscript.

Harvard T.H. Chan School of Public Health Aug 2023-May 2025

Center for Communicable Disease Dynamics

Graduate Research Assistant

- Assessing the Validity of Test-Negative Designs for Estimating Protection Linked to Exposure-Proximal Correlates of Protection Aug 2023-May 2025
 - Supervisor: Marc Lipsitch, D.Phil.
 - Developed individual-based models, analyzed, and visualized model output with R; drafted and reviewed manuscript.
- Identifying and Analyzing Truly Ambiguous Nucleotide Calls by Position in *Mycobacterium Tuberculosis* Genome Sequencing Sept 2024-May 2025
 - Supervisor: Megan Murray, M.D., Sc.D.; Chuan-Chin Huang, Sc.D.
 - Analyzed the genomic sequence of *Mycobacterium tuberculosis* and validated the low confidence regions in short-read sequencing proposed by existing literature using R.
- Case Studies of Extreme Variations in TB-HIV Death Estimates: Data Source Validation and Assumption Analysis Sept 2024-May 2025
 - Supervisor: Jeffrey Imai-Eaton, Ph.D.
 - Analyzed models employed by WHO and UNAIDS, along with respective data sources and assumptions, to estimate HIV and TB-related HIV prevalence and mortality using R.

Weill Cornell Medicine | NewYork-Presbyterian Jun 2022-Present

Research Assistant

Supervisor: Yunyu Xiao, Ph.D.; J. John Mann, M.D.

- Applications of Natural Language Processing and Large Language Models for Social Determinants of Health: A Systematic Review Aug 2024-Present
 - Completed title and abstract screening, full text review, and data extraction.
- Trends and Risk Factors in Suicide Deaths with and without Warning From 2003-2022 Jun 2022-Present
 - Cleaned, analyzed, and visualized NVDRS data with R and Joinpoint Trend Analysis Software; drafted and reviewed abstract for conference and manuscript.

Harvard Medical School and MGH Institute for Technology Assessment Jun 2022-Jan 2025
Research Assistant

Supervisors: Mohammad Jalali, Ph.D.; Navid Ghaffarzadegan, Ph.D.

- Behavioral Dynamics of Epidemic Trajectories and Vaccination Strategies Mar 2023-Jan 2025
 - Developed agent-based models with NetLogo; analyzed and visualized model output with Python; drafted and reviewed manuscript.
- Longitudinal Trends in Buprenorphine Receipt for Opioid Use Disorder and Buprenorphine-Waivered Providers in the United States Aug 2022-Dec 2022
 - Conducted literature review; analyzed and visualized data with Excel; visualized data with Python; drafted and reviewed manuscript.
- Temporal and spatial trends of fentanyl co-occurrence in the illicit drug supply in the United States Aug 2022-Nov 2022
 - Developed pipeline for data preprocessing; created graphical template for state level map combined with bar and line plots; drafted and reviewed abstract for conference.
- Long-term Effects of Increasing Buprenorphine Treatment-Seeking, Duration, and Capacity on Opioid Overdose Fatalities Jun 2022-Oct 2022
 - Cleaned, analyzed, and visualized modeling outputs with R; reviewed manuscript.

Chinese Center for Disease Control and Prevention Nov 2021-Oct 2022

Center for Global Public Health

Research Intern

Supervisor: Xiaopeng Qi, Ph.D.

- Health Emergency Tabletop Exercise Simulation System
 - Designed tabletop exercise for public health emergency in China; completed literature review; wrote exercise draft with research team for the ASEAN 10+3 National Public Health Emergency Tabletop Exercise Conference.

ORAL PRESENTATION

1. Use of the test-negative design to estimate the protective effect of a scalar immune measure: identification and estimation. *Society for Epidemiologic Research*, June 2025
2. Clinical Experience with 16S Ribosomal RNA Gene PCR Sequencing of Normally Sterile Body Fluids and Tissues in Pediatric Patients. *IDWeek*, October 2024.
3. Trends in Suicide Deaths with and without Warning from 2003-2019: Identifying the Missing Link for Effective Suicide Prevention. *Annual Meeting & Expo, American Public Health Association (APHA)*, November 2022.

AWARD

IDWeek Travel Award for Top Abstracts Submitted in Diagnostics

2024

TEACHING EXPERIENCE

Harvard T.H. Chan School of Public Health

Teaching Fellow: Principles of Clinical Trials

January 2025-March 2025

Tutor: Introduction to Epidemiology; Applied Regression Analysis

September 2024-May 2025

TECHNICAL SKILLS

Adobe Illustrator, Adobe Photoshop, ArcGIS, BEAST2, Covidence, Java, Microsoft Office Suite, NetLogo, Python, R, Tableau