Marisa A.P. Donnelly, PhD

Epidemiologist

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New York City, NY

PROFILE

- Over 10 years of experience in infectious disease epidemiology, specializing in outbreak investigation and analytics, public health communication, and health statistics and modeling.
- Proven record of leading high-impact projects and teams across federal, state, and local government, as well as the private sector, including the Centers for Disease Control and Prevention, the State of California, and Biobot Analytics.
- Authored 11 peer-reviewed articles, 30+ blogs and white papers; delivered numerous webinars; and featured in major media outlets. Published in high-impact journals on mpox, COVID-19, and coccidioidomycosis.

PROFESSIONAL EXPERIENCE

Senior Principal Epidemiologist (December 2023-Present)

Biobot Analytics

- Science Communication - Wrote over 30 blogs and white papers, spoke at over eight webinars, delivered multiple university graduate-level lectures, and engaged with various journalists, including features in the WIRED, Washington Post, Boston 25, Tennessee 3, and others.
- Technical Leadership - Led data science projects analyzing and interpreting infectious disease and opioid wastewater data, led and co-wrote multiple RFP applications, defined scientific and analytic priorities, and collaborated with company executives and leadership to develop scientific roadmaps and product features.
- People Management - Managed an epidemiologist responsible for producing blogs, white papers, and epidemiological analyses.

Public Health Partnerships Epidemiologist (May 2023-December 2023)

Biobot Analytics

- Data Science - Analyzed infectious diseases (e.g., SARS-CoV-2, influenza, RSV, mpox, norovirus, etc.) and opioid wastewater data to understand population health trends and outbreaks. Developed visualizations and metrics (e.g., risk tiers, thresholds, trends) to communicate wastewater data and improve actionability.
- Client Relationship Development and Customer Success - Communicated wastewater data and metrics to customers in government, health systems, and enterprise.
- Subject Matter Expertise - Provided expertise in government public health, infectious disease epidemiology, data interpretation, and science communication internally to company executives and across teams, and externally to customers, the media, and the public.

Contributing Epidemiologist (August 2024-Present)

Your Local Epidemiologist & Healthbeat News

- Public Health Communication - Published a weekly newsletter with over 3,000 subscribers, translating complex epidemiological topics relevant to New Yorkers into

clear, actionable information for both professional and public audiences. Covered a wide range of public health issues, including respiratory viruses, mosquito-borne diseases, wastewater epidemiology, maternal mortality, childhood vaccinations, and more.
- Epidemiological Interpretation - Analyzed and interpreted surveillance data, offering timely insights to inform public health practices and community response strategies.

Senior Epidemiologist, Wastewater Epidemiology Team (June 2022 - May 2023)
California Department of Public Health
- Public Health Data Science - Identified mpox virus transmission in California communities using wastewater epidemiology (publication in New England Journal of Medicine); assessed wastewater surveillance utility for influenza and RSV through analyzing non-parametric associations with clinical data.
- Relationship Development - Managed relationships across academic, private institutions, and local, state, and federal government to integrate wastewater epidemiology into reporting and applied public health action.

CDC Epidemic Intelligence Service Officer and Lieutenant, US Public Health Service (July 2020– June 2022)
Centers for Disease Control and Prevention
- Project Management - Led the California Department of Public Health's emergency epidemiological response to the mpox virus outbreak. Detailed findings are published in the CDC MMWR journal, available here and here.
- Advanced Analytics - Led and designed the statistical analysis of a 3-month household transmission investigation of SARS-CoV-2 Alpha variant of concern
    - Project managed > 45 CDC staff
    - Built Generalized Estimation Equation models
    - Publications available at Clinical Infectious Disease, JAMA Internal Medicine, and The Journal of Pediatrics.
- Outbreak Investigation - Led investigations into the sources of major outbreaks, including Legionnaires' disease, a coccidioidomycosis outbreak affecting wildland firefighters, and multiple foodborne illnesses such as *Salmonella*, *E. coli*, and *Cronobacter*, providing actionable public health responses.
- Genomic Epidemiology - Interpreted whole genome sequencing data from NCBI and CDC PulseNet to investigate foodborne outbreaks (*Salmonella*, *E. coli*, *Cronobacter*, etc.).
- Surveillance Systems Evaluation - Evaluated the California Department of Public Health's COVID-19 surveillance system (containing millions of records).
- Communications - Provided counsel to the California Department of Justice and Governor's Office on a large SARS-CoV-2 outbreak (covered by SF Chronicle and CNN).

Technical skills: R ▪ SQL ▪ Snowflake ▪ GitHub ▪ Science Communication ▪ Data visualization
Language skills: English (fluent) ▪ Spanish (fluent - written and verbal)

EDUCATION

Ph.D. Epidemiology (2020), *UC Davis, advised by Christopher M. Barker*
B.S. Environmental Systems, Minor in International Studies (2013), *UC San Diego*