


Melanie M. Spillane, MPH

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CONNECT

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EDUCATION

MPH in Epidemiology and Biostatistics

National University of Ireland, Cork
2017-2019

BS in Biology and Chemistry

Rivier University
Member of Eta Delta Chapter of
TriBeta National Biological Honor
Society
2013-2017

LEADERSHIP

- Director of Women Who Code, Fort Collins Chapter
- Lead of Data Visualization for a Data Science & Analytics team
- Executive board member for CDC's Data visualization, Statistical Advisory Group

HIGHLIGHTED SKILLS

Programming: Fluent in R and have a working skill level in SQL, Javascript, HTML, CSS, and Python

Data visualization tools: R Shiny, Microsoft Power BI

DBMS: Azure, Microsoft SQL Server, REDCap

OS proficiency: Windows, Mac

Version control: Github, GitLab

IDEs: R Studio, Visual Studio Code

Design: Figma, Canva, and a working knowledge in Adobe

Other: Creative, analytical, effective communicator, compassionate, life-long learner, and emotionally intelligent

RESEARCH INTERESTS

- Data visualization
- Design principles
- Bioinformatics
- Antimicrobial stewardship
- Infectious, zoonotic diseases
- Closing the gaps to global health disparities and inequities

WORK EXPERIENCE

Health Data Scientist - Centers for Disease Control and Prevention 5/2022-current

- I lead data visualization for a data science and analytics team and serve as a dashboard, web application design, and development subject matter expert
- Manage time-sensitive and high-priority data analytics requests that our team frequently receives and responds to for senior leadership
- Support the DataMosaic program and aid in guiding the activities and mentoring of several research fellows
- Provide consultation and technical support to the areas of data science, analytics, statistical modeling, and UI design
- Support COVID-19, MPX, and Ebola emergency responses by providing epidemiological and analytical support
- Serve as an integral member of the DataViz SAG/Data Modernization Initiative (DMI) data science podcast initiative development
- Manage databases and monitor data quality at each of the data pipeline stages
- Design and implement machine learning, statistical modeling, AI algorithms, and advanced visualizations that supplement and support epidemiological analyses
- Develop creative, interactive, human-centered design focused, 508-compliant dashboards and web applications
- Manage and maintain stakeholder relationships
- Develop training curriculum and host workshops for data visualization-related topics such as data storytelling, UI/UX design, and user accessibility/ 508 compliance
- Deliver technical presentations and analytical demonstrations
- Use data mining techniques and incorporate large datasets (from CDC, propriety sources, government data, and open source) into analyses coherently
- Communicate data insights to diverse audiences and guide the direction of public health decisions and guidelines
- Design and conduct major scientific surveys/studies to identify and solve public health problems
- Prepare publishable reports and meta-analyses of surveillance data, literature reviews, and other data sources
- Optimize and automate code and develop resources to streamline data analytics processes

Scientist II. - Contracted to CDC - Cherokee Federal, Kapili Services 3/2021-5/2022

- Manage quality of both quantitative and qualitative data and analytics products
- Ensure analytics requests meet the needs and standards of the requestor
- Guide the data flow process from partnership development, data collection, linkage, coding, classification, analysis, and effective communication of results
- Advances knowledge of data science methods and tools in public health to identify and create solutions to public health challenges
- Conducts surveys and studies using data from public health systems, survey data, healthcare facility data, syndromic surveillance data, electronic health records data, vitals data, and social media and unstructured web scraped data
- Develop research proposals that align with data and policy priorities and goals
- Develop user-friendly, audience-tailored public health communication tools
- Create and innovate new data science and analytics methods to streamline and optimize processes

Epidemiologist Fellow - Oak Ridge Institute for Science & Education 3/2019-3/2021

- Analyzed data from epidemiological studies carried out by the CDC and state health department partners
- Designed both public-facing and internal, interactive data visualization tools using syndromic surveillance data for vector-borne diseases
- Conducted major scientific surveys/studies or projects to identify and solve public health problems
- Contributed to writing manuscripts, protocols, and public health guidelines
- Developed and analyzed public health surveys
- Collected, analyzed, modeled, and visualized data to communicate actionable public health insights

LANGUAGES

English: Expert, Mother-tongue
Spanish: Intermediate level

PUBLICATIONS

- Marx G, Spillane M, Beck A, Stein Z, Kite Powell A, Hinckley A. Syndromic surveillance of emergency department visits for tick bites – United States, January 2017 – December 2019 MMWR
- Marshall K, Vahey GM, McDonald E, Tate JE, Herlihy R, Midgley CM, Kawasaki B, Killerby ME, Alden NB, Staples JE; Colorado Investigation Team. Exposures Before Issuance of Stay-at-Home Orders Among Persons with Laboratory-Confirmed COVID-19 – Colorado, March 2020. MMWR Morb Mortal Wkly Rep. 2020 Jul 3;69(26):847-849. doi: 10.15585/mmwr.mm6926e4. PMID: 32614809; PMCID: PMC7332095

VOLUNTEERING

- 2022-present Director of Women Who Code, Fort Collins
- 2020-2021 Secretary and leadership board member of the JLFC, a women-led, nonprofit organization located in Fort Collins, Colorado
- 2020 Served as an emergency response volunteer at COVID-19 Recovery Center (CRC) in Boulder, Colorado
- 2014-2017 Member of the Eta Delta Chapter of TriBeta National Biological Honor Society
- 2018-2019 Served as a student mentor and university tour guide to underprivileged youth at UCC PLUS School Outreach Organization
- 2018-2019 Fundraised through UCC's Friends of MSF Society Friends of Médecins Sans Frontières/Doctors without Borders (MSF)
- 2016 Serviced as a volunteer at Ann Marie House, a program supporting and providing resources to families experiencing homelessness in Hudson, New Hampshire
- 2015-2017 Served as an Events planner/volunteer American Cancer Society
- 2013-2015 Volunteered to provide animal care at the Humane Society of Greater Nashua, New Hampshire

- Performed epidemiological statistical analyses
- Interviewed ill patients to gather data for a Case-Control Study
- Applied infectious disease metabolomics techniques to develop a biosignature for Lyme disease
- Synthesized genomics, proteomics, and metabolomics data using statistical software
- Presented a poster describing project methods and results at the 2019 Advanced Molecular Diagnostics conference at CDC Atlanta, GA
- Developed prevention interventions for vector-borne diseases
- Utilized knowledge in bioinformatics and analytical chemistry while learning lab instrument sample analysis software to disseminate and interpret pathology data
- Database management
- Served in 3 deployments to CDC's emergency operational response to COVID-19
- Generate descriptive analyses of surveillance systems
- Use known techniques for analyzing epidemiologic investigation data
- Perform statistical analyses related to analytical investigations involving highly specialized scientific data
- Collaborate with scientists in the survey or investigation design process, including conducting a search or review of existing literature and data in a scientific area, and designing questionnaires and other data collection instruments

Analytical Chemistry Lab Leader - National University of Ireland, Cork
1/2018-5/2019

- Guided analytical chemistry students through their lab procedures and calculations
- Answered students' queries regarding course subject matter
- Graded student reports
- Provided leadership and mentorship to students

Biopharma Chemical Engineering Intern - Lonza Biologics 5/2017-8/2017

- Assisted with the validation/qualification stages of new facility equipment and technology
- Operated equipment and instrument interfaces
- Edited and reviewed cGMP documentation, performing laboratory and utility chemical sampling
- Updated SOP work instructions
- Generated a visual process flow for customer presentation
- Assisted with buffer and optimization studies in the MSAT laboratory

Health Scientist/Epi Intern - Nashua Public Health Department 1/2017-5/2018

- Collaborated with environmental health scientists and epidemiologists at the local and state public health departments
- Collected and analyzed data aiming to improve the efficacy of the food safety inspection process which is routinely performed at all local food-selling establishments
- Formally presented the analysis of my findings to the department via PowerPoint presentation
- Search, synthesize, and interpret information to find solutions to public health problems
- Used knowledge in infectious disease, immunology, microbiology, and pathology

Veterinary Technician - Amherst Animal Hospital 2/2013-6/2016

- Worked in the wards, reception, and lab areas of the animal hospital
- Fed, walked and provided care to animals
- Monitored IV fluid pumps and administered medications as directed by Veterinarians
- Assisted clients and answered incoming phone calls
- Assisted with handling, examining, and interpreting patient samples
- Supported the Veterinarians and Veterinary Technicians for more efficient, streamlined operations and to heighten standards and delivery of care to animals

Organic Chemistry Lab Assistant - River University 8/2015-12/2015

- Prepared the laboratory environment for students by measuring and weighing out materials for lab activities
- Set up all necessary apparatuses, prepared solutions, and cleaned equipment
- Obtained IR and NMR spectrums of samples for interpretation
- Guided and answered student's questions regarding course material

