



Lynne P. Marshall, Ph.D., M.S.

Supervising Health Scientist

Summary of Experience

Dr. Marshall is a health scientist and data strategist with over 25 years of experience with expertise in epidemiology, environmental science, and applied analytics. With a foundation in chemical engineering and advanced training in environmental science and epidemiology, she has led multidisciplinary teams in designing and executing complex research projects. She applies advanced expertise in epidemiology and public health to assess and manage risks associated with environmental, occupational, and consumer product exposures. She specializes in statistical and geospatial analyses to evaluate health outcomes and exposure patterns across diverse populations and settings. Dr. Marshall also brings extensive experience in survey design, literature synthesis, and data visualization, translating complex datasets into actionable insights. She collaborates with stakeholders across sectors—including healthcare, regulatory, environmental consulting, and nonprofit organizations—to address community health concerns and product safety. Her systems-thinking approach, grounded in innovation, equity, and measurable impact, supports the development of data-driven tools and strategies that inform policy, improve public health, and guide strategic planning.

Education

Bachelor of Sciences (B.S.), Chemical Engineering, 1990, Penn State University, University Park, PA

Master of Science (M.S.), Environmental Science & Management, 1997, Duquesne University, Pittsburgh, PA

Doctor of Philosophy (Ph.D.), Epidemiology, 2014, Pitt Public Health, University of Pittsburgh, Pittsburgh, PA

Project Experience

Community Health & Risk Communication

Developed an innovative online tool aimed at improving food access and security in local communities. This tool is designed to assist local health departments in fostering partnerships across their communities to effectively address food insecurity and transform food systems. Gathered and organized a wide array of resources to provide valuable insights and best practices for enhancing food security and promoting healthier communities.

Conducted qualitative data analysis and visualization for ten focus groups conducted by a local health department. Developed a comprehensive data management and analysis plan, utilizing deductive and inductive thematic coding with Qualtrics TextIQ. The specific analyses and visualizations from the focus groups were integrated with additional primary data collection efforts, resulting in a robust Community Health Assessment (CHA) for Denver, Colorado.

Developed a Community Health Assessment (CHA) data dashboard for a local health department. Directed a systematic search of secondary data sources, identifying key public health indicators such as demographics, health outcomes, social and economic factors, and health behaviors. The interdisciplinary team created data visualizations in PowerBI to benchmark Denver against Colorado, evaluate health disparities, and assess temporal trends. The project delivered an accessible and updatable dashboard, informing priority areas for the CHA cycle and future evidence-based interventions.

Developed and executed an analysis of the 11-county service area of a Southwestern Pennsylvania non-profit organization. Evaluation assessed access to food in high need communities. Access to food services was differentiated by whether the community was urban or rural. High need communities were defined using a composite index that incorporated socioeconomic and household characteristics. This analysis allowed the client to make data-driven decisions on future programming.

Assessed health risks posed by industrial activities to nearby communities using a combination of literature review and cancer incidence and mortality analysis. Fence line air monitor data was used to develop conservative exposure estimates for the nearby communities. The integration of these methods provided a robust assessment of risk, enabling the team to report on any potential health hazards to the community.

Supported disease surveillance for two county health departments. Consulted, analyzed data, and reported on infectious diseases and behavioral health conditions to inform public health communication and policies.

Created online content to effectively communicate the increased risks of cancer and asthma exacerbations due to air pollution for the Allegheny County Health Department. Developed content to ensure it was accessible and informative for the general public. Actively engaged with the community by presenting this information at various community meetings, addressing concerns, answering questions, and providing valuable insights into the health impacts of air pollution. This contributed to raising awareness and promoting public health initiatives within the community.

Designed, installed, and maintained a passive air monitoring network to measure VOC (benzene, toluene, ethylbenzene, xylene, and n-hexane) exposure in a community downwind from a large coking facility. The facility closed one year after installing monitors, which enabled a before and after analysis of VOC levels and acute respiratory health outcomes.

Conducted an analysis of excess cancer risk due to air pollution in Allegheny County, PA. Utilized the National Air Toxics Assessment (NATA) dataset to estimate the potential health impacts on the local population. Analyzed the data to identify key pollutants and their associated risks, providing a clear picture of the cancer risk attributable to air pollution in the region. Presented her findings to the Allegheny County Board of Health, effectively communicating the significance of her results and their implications for public health policy highlighting the need for targeted interventions to mitigate air pollution and protect community health.

Created data visualizations of air sampling and weather data in an industrial building. These maps allowed for a clear understanding of employee potential risk in various locations.

Investigated cardiovascular and respiratory health effects in coal mining communities of West Virginia. Used Poisson regression to compare hospitalization rates between coal mining and non-coal mining counties, considering the effects of underground and surface coal production.

Created heat maps of socioeconomic risk factors (ex. housing insecurity, food insecurity) from publicly available data and geocoded member residences to discern high concentrations of individuals in need, informing community-level intervention planning.

Survey Design, Implementation, and Analysis

Designed and conducted evaluation for an experimental initiative to address food insecurity at the community level. This initiative engaged stakeholders in three rural counties in southwestern Pennsylvania to assess community assets, needs, and potential barriers to food service access.

Developed, deployed, and analyzed a community health survey for a rural county in California. The survey instrument collected data on community members' opinions of health risks and barriers to healthcare as well as current individual and community health status. The results of the survey were communicated through a community health assessment report.

Served as the Principal Investigator for multiple surveys to assess e-cigarette use, perceptions, and label comprehension for new tobacco products. These projects included designing the survey instrument, specifying the statistical analysis plan, deploying the survey, and interpreting survey results as well as preparing and submitting documentation for human subject research approval from the Institutional Review Board (IRB).

Analyzed data from the National Youth Tobacco Survey (NYTS) and the Tobacco Use Supplement to the Current Population Survey (TUS-CPS) to report on trends in tobacco product use in US adult and youth populations.

Conducted research on the environmental risk factors for autism spectrum disorder. Performed statistical analyses on the association between air pollutants and this birth outcome in six Western Pennsylvania counties, created a data collection tool for telephonic surveys, and co-authored a manuscript. This case-control study was funded by the Heinz Endowments.

Regulatory Interaction

Conducted a supplementary literature review to identify studies addressing the key health effects of two chemicals anticipated for TSCA review. Identified relevant literature and evaluated the quality of each study using the EPA Draft Systematic Review Protocol Supporting TSCA Risk Evaluations for Chemical Substances Version 1.0, which assesses the strength of evidence for human health hazard assessment. The findings were summarized, highlighting the strengths and weaknesses of the underlying studies where appropriate, and areas for additional research were identified based on the comprehensive literature review.

Investigated whether proposed cancer potency estimates for cobalt substances align with existing epidemiology literature. Using data from the published literature, Monte Carlo methods were employed to estimate the sample size and cobalt exposure distribution of the highest exposure group. A comparison of predicted excess cancer deaths to observed deaths found that regulatory estimates likely overstate the cancer risk from cobalt inhalation exposure.

Reviewed literature and wrote synthesis text on behavioral health outcomes for a large state of the science white paper for nicotine products. Conducted two literature review processes, which involved search, screen, and summarizing steps that were conducted using DistillerSR systematic review software. One literature review involved a review of approximately 400 peer-reviewed manuscripts on all clinical and behavioral topics for oral nicotine products. A second project involved an updated review of approximately 170 peer-reviewed manuscripts on behavioral topics for electronic nicotine delivery systems (ENDS). Was contributing author to multiple client PMTA submissions.

Conducted a literature search and review to investigate the factors that affect the pharmacokinetics of modern oral tobacco products. Created data extraction tables and figures to visualize associations identified and presented findings to relevant stakeholders.

Designed and implemented a comprehensive Chronic Condition Improvement Plan aimed at enhancing the quality of care for patients with chronic conditions. Developed the plan to address key areas such as patient management, intervention protocols, and health outcomes. Wrote and submitted all required documentation to the Centers for Medicare and Medicaid Services (CMS), ensuring compliance with federal guidelines and securing necessary approvals. Advanced commitment to improving patient care and achieving better health outcomes for individuals with chronic conditions.

Organized and prepared the Integrated Contingency Plan and issued updated versions of auxiliary environmental documents for a local chemical company.

Other Research

Designed and implemented risk stratification strategy for a Managed Care Organization in Delaware. This project entailed analyzing and classifying members' risk within a healthcare system as well as producing all relevant programming to route members to their applicable intervention team.

Designed a model to target and intervene upon members with asthma and COPD exacerbations due to air pollution. Members with respiratory conditions who live in areas with higher exposure to particulate matter (PM2.5), ozone, and closer to higher volumes of vehicular exposures were targeted for an environmental intervention.

Coordinated efforts to reduce chemical waste volume and disposal costs. Used Design of Experiments to achieve the optimal process conditions while reducing the use of phosphoric acid. Ran all trials, analyzed results, and made recommendations to the management team based on findings.

Professional Experience

Supervising Health Scientist, Valeo Sciences LLC, Apr 2025 – present

Apply advanced expertise in epidemiology and public health to assess and manage risks associated with environmental, occupational, and consumer product exposures. Conduct statistical and geospatial analyses to evaluate exposure patterns and health outcomes. Support

risk management decisions by interpreting complex data, preparing technical reports, and collaborating with inter-disciplinary teams to address public and occupational health concerns.

Senior Supervising Health Scientist, Stantec (ChemRisk) (Formerly Cardno ChemRisk and ChemRisk), Aug 2019 – Apr 2025.

Specialized in areas of epidemiology, public health, human health risk assessments, statistical and geospatial analyses involving community and occupational exposures and consumer product safety.

Adjunct Professor, Pitt Public Health, Aug 2021-Dec 2022.

Taught a graduate class introducing students to the methods of applied epidemiology used in applied epidemiology settings such as federal, state, local and tribal government agencies. Prepared students to conduct urgent public health field investigations and write reports for public consumption. This course also introduced students to applied epidemiology topic areas and their respective analytic methods.

Research Statistician, Population Health Strategies, Gateway Health Plan, Jan 2017-Aug 2019.

Investigated how environmental and social issues contribute to health inequities within the managed health care system, working extensively with large healthcare datasets. Developed an environmental index and designed an intervention strategy to identify and support individuals at increased risk of respiratory exacerbations. Constructed predictive models to inform care management and outreach efforts. Active participation in county-level workgroups alongside stakeholders from both private and public sectors and chaired the Data and Research Committee of Lead Safe Allegheny. Designed and evaluated interventions, delivered training sessions for my research team, and mentored summer interns to support future professionals.

Epidemiologist, Air Quality Program, Allegheny County Health Department, Jul 2013-Dec 2017.

Conducted health investigations in Allegheny County, collaborating and communicating with various stakeholders to address environmental health concerns. Analyzed and interpreted health data, managed databases of health outcomes, and oversaw laboratory analyses of air quality measures. To further support public health, designed the Healthy Homes study, aimed at assessing and addressing high asthma prevalence in an environmental justice area of Allegheny County. Designed and managed passive air monitoring networks, ensuring effective data collection and analysis to inform policy and intervention strategies.

Graduate Student Researcher, University of Pittsburgh, Jan 2012-Jul 2013.

Supported research across multiple projects, including analyses of environmental risk factors for autism spectrum disorder (ASD) and investigations into the health effects in coal mining communities of West Virginia. Coordinated data collection efforts for the Pittsburgh Aerosol Research and Inhalation Epidemiology Study (PARIES), including the collection of hospitalization and emergency room data from area hospitals. Developed a data collection tool for use in telephonic interviews as part of these research initiatives.

Graduate Student Researcher, Center for Healthy Environments and Communities, Nov 2010-Dec 2011.

Participated in the design and analysis of a longitudinal study of community perceptions of unconventional shale gas development. Used Atlas.ti software to identify physical and psychological themes in participant interviews and co-authored a manuscript on results.

Math & Science Department Chair, The Neighborhood Academy, Jun 2003-Oct 2010.

Founding member of the team that designed the vision for science and math education at this private urban high school. Wrote curriculum and led monthly department meetings. Taught math and science courses and created and taught a senior-level Environmental Science seminar course. Mentored students to facilitate social and academic growth.

Process Engineer, S/D Engineers, Inc., Jan 1998-Mar 2001.

Contributed to a range of client projects by defining design specifications for chemical processes and determining emissions projections for proposed systems. Oversaw vendor timelines to ensure alignment with construction project milestones and supported cross-functional coordination to meet client objectives across various accounts.

Development Engineer, Ethicon Inc., Feb 1991-Jun 1995.

Supported cross-functional project teams from concept to completion. Managed production for two product lines, including training, scheduling, supervision, and expediting. Defined experimentation and validation requirements for new processes and implemented improvements to enhance efficiency and reduce chemical waste. Authored and executed protocols leading to process and documentation changes. Performed routine maintenance and troubleshooting of machinery.

Professional Membership

- International Society of Environmental Epidemiology (ISEE)
- American Public Health Association (APHA)

Peer-Reviewed Publications

Brink, L.L., L.P. Marshall, K.A. Hacker, and E.O. Talbott. 2019. Changes in emergency department visits for respiratory and cardiovascular disease after closure of a coking operation near Pittsburgh, PA. *J Air Pollution Health* 4(4):209-220.

Talbott, E.O., L.P. Marshall, J.R. Rager, V.C. Arena, R.K. Sharma, and S.L. Stacy. 2015. Air toxics and the risk of autism spectrum disorder: the results of a population based case-control study in southwestern Pennsylvania. *Environ Health* 14(1):80.

Brink, L.L., E.O. Talbott, S.L. Stacy, L.P. Marshall, R.K. Sharma, and J. Buchanich. 2014. The association of respiratory hospitalization rates in WV counties, total, underground, and surface coal production and sociodemographic covariates. *J Occup Environ Med* 56(11):1179-1188.

Brink, L.L., S.M. Benson, L.P. Marshall, and E.O. Talbott. 2014. Environmental inequality, adverse birth outcomes, and exposure to ambient air pollution in Allegheny County, PA, USA. *J Racial Ethnic Health Disparities* 1(3):157-162.

Ferrar, K.J., J. Kriesky, C.L. Christen, L.P. Marshall, S.L. Malone, R.K. Sharma, D.R. Michanowicz, and B.D. Goldstein. 2013. Assessment and longitudinal analysis of health impacts and stressors perceived to result from unconventional shale gas development in the Marcellus Shale region. *Intl J Occup Environ Health* 19(2):104-112.

Published Abstracts

- Lauer D., L.A. Wood, D. Steigerwald, L.P. Marshall, K. Keeton, L. Dobyns, B. Finley, and S.M. Benson. 2024. Asbestos and Laryngeal Cancer, a Meta-Analysis stratified by Fiber-Type. Society of Toxicology (SOT) 2024 Annual Meeting and ToxExpo (Salt Lake City, Utah).
- Wood, L.A., D. Lauer, L.P. Marshall, D. Steigerwald, and S.M. Benson. 2024. Meta-Analysis of Asbestos Fiber-Type Specific Associations and Risk of Head and Neck Cancers. Society of Toxicology (SOT) 2024 Annual Meeting and ToxExpo (Salt Lake City, Utah).
- Keeton K.A., L.P. Marshall, A. Hernandez, E. Sutherland, O. Leleck, H. Allen, and S. Benson. 2023. The impact of denominator definitions on measures of electronic nicotine delivery systems (ENDS) use among youth in the U.S. across nationally representative surveys. Society for Research on Nicotine and Tobacco (SRNT) 2023 Annual Meeting (San Antonio, Texas).
- Marshall L.P., M. Kreider, A. Maier, and G.M. Marsh. 2023. Epidemiologic support for challenging the cancer dose-response value for cobalt and inorganic cobalt compounds proposed by the European Chemicals Agency (ECHA). Society of Toxicology (SOT) 2023 Annual Meeting and ToxExpo (Nashville, Tennessee).
- Thornton S.A., L.P. Marshall, K. Chen, E. Chen, S.M. Benson, B. Finley, and M. Maddaloni. 2023. Influence of endogenous exposure on blood lead levels measured in secondary intervention studies. Society of Toxicology (SOT) 2023 Annual Meeting and ToxExpo (Nashville, Tennessee).
- Marshall L.P., G.P. Lucha, N.S. Egnot, O.M. Leleck, and M. Schilken. 2022. Spatial analysis of high need and low access census tracts within the service area of a Southwestern Pennsylvania Food Bank. Society for Epidemiologic Research (SER) 2022 Annual Conference (Chicago, Illinois).
- Marshall, L.P., E.O. Talbott, L.L. Brink, and J.M. Buchanich. 2013. A comparison of circulatory and respiratory hospitalization rates of coal mining and non-coal mining counties in West Virginia: A preliminary analysis. Poster Presentation at the University of Pittsburgh Graduate School of Public Health (Pittsburgh, Pennsylvania).

Presentations

- Marshall L.P. and G.P. Lucha. 2024. Access to food bank services in Allegheny County: Incorporating public transportation and walkability measures. American Public Health Association (APHA) 2024 Annual Conference (Minneapolis, MN).
- Freid R.D., J.K. Frederick, C.K. Stewart, G.P. Lucha, L.P. Marshall, and M.A. Cappello. 2023. Community Epidemiology Experts for Health Departments and Municipalities: Public Messaging, Data Visualization, and Increasing Trust and Awareness. 2023 NACCHO360 Annual Conference (Denver, CO).
- Marshall, L.P. 2016. Cancer risk from air toxics in Allegheny County. Presentation to the Allegheny County Board of Health (Pittsburgh, Pennsylvania).

Professional and Academic Lectures and Courses

- Marshall, L.P. Applied Epidemiology Field Investigation Methods. Graduate course in the Department of Epidemiology, University of Pittsburgh Graduate School of Public Health (Pittsburgh, Pennsylvania), Fall Semester 2021 and 2022.

Marshall, L.P. Using health plan data to implement targeted health interventions. Presentation at the Department of Epidemiology Fall Seminar Series, University of Pittsburgh Graduate School of Public Health (Pittsburgh, Pennsylvania), 2018.