

Mariah Danielle Caballero

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EDUCATION

Doctor of Philosophy, Community Research and Action Expected May 2025
Department of Human and Organizational Development
Vanderbilt University, Peabody College of Education

Master of Science, Community Research and Action Conferred August 2023
Department of Human and Organizational Development
Vanderbilt University, Peabody College of Education

Bachelor of Arts, Biology and Geography Graduated May 2019
Vassar College
Thesis: The Role of Agricultural Science in the Washington State Apple Industry: Extension, Education, and its Environmental Health Consequences
Thesis: The Health and Social Implications of Nitrate-Contaminated Drinking Water in Washington State

RESEARCH INTERESTS

Environmental justice; Energy justice; Food-Water-Energy nexus; Drinking water; Energy sovereignty; Deep decarbonization; Rural and Latinx community health and wellbeing

RESEARCH EXPERIENCE

Graduate Research Fellow Jan 2022- Nov 2022
Clean Energy Transition Institute, Seattle WA
Provide qualitative research assistance and data analyses for the Community-Defined Decarbonization Project.

Executive Director: Eileen Quigley, CETI

Lead Research Assistant May 2020- Present
Drinking Water Justice Lab, Nashville, TN
Spatial analysis of drinking water quality across the United States utilizing the U.S. Community Water System Estimated Service Area Boundary Database.

Assisted in the development of a U.S. Community Water System Estimated Service Area Boundary Database using GIS software.

Collaborated with the Tennessee Department of Health and the National Environmental Health Association to conduct the Tennessee Private Wells Project, a multi-state effort for developing methodological approaches to estimate populations reliant on private wells.

PI: Dr. Yolanda McDonald, Vanderbilt University

Graduate Research & Development Intern Apr 2020- Present
Sandia National Laboratories, Albuquerque, NM

Provide data science and visualization support to the Energy Water Systems Integration Department.

Mentor: Dr. Thushara Gunda, Sandia National Laboratories

ORAU Data Analyst

Aug 2019- Jun 2020

Environmental Protection Agency, Cincinnati, OH

Managed drinking water quality data and sampling profiles from homes being monitored for particulate matter, prepared reports for the Drinking Water Management Branch (DWMB).

Mentor: Mike Schock, USEPA

Project IMHOTEP Intern

May 2019- Aug 2019

Center for Disease Control, Atlanta, GA

Conducted occupational health research for Morehouse College's Public Health Sciences Institute (PHSI) and the United States Center for Disease Control (CDC) at the National Institute for Occupational Safety and Health.

Mentor: Dr. Maria Lioce, NIOSH

Undergraduate Research Fellow

Jun 2018- Aug 2018

Community Health and Spatial Epidemiology Lab, Spokane, WA

Conducted research on agricultural chemicals and Parkinson's disease in Washington State using land-use data and ArcGIS software to estimate residential exposure and risk of premature mortality.

Mentor: Dr. Ofer Amram, Washington State University Medical School

GRANTS

Received

Vassar College Environmental Research Initiative (2019)

Vassar College Engaged Pluralism Initiative (2019)

Asprey Center for Collaborative Approaches to Science (CCAS) Student Research Fund (2018)

Vassar College Academic Enrichment Fund (2018)

Applied

Pre-Doctoral Fellowship, Ford Foundation, 2023

Health Policy Research Fellowship, Robert Wood Johnson Foundation, 2021

Pre-Doctoral Fellowship, Ford Foundation, 2021

HONORS

Graduate Student Mentor, Climate Leaders Academy (2023)

Honorable Mention, Ford Pre-Doctoral Fellowship (2023)

Finalist, Vanderbilt University Three Minute Thesis Competition (2022)

Awardee, Doctoral Student Poster Competition, Yale New Horizons in Conservation Conference (2022)

Semi-Finalist, Health Policy Research Fellowship (2021)

Honorable Mention, Ford Pre-Doctoral Fellowship (2021)

Vanderbilt University Provost's Graduate Fellowship (2020)

Vassar College Kate Roberts Prize for excellence in biology (2019)

Geography and Earth Sciences departmental honors for distinguished research (2018)

PUBLICATIONS

Peer-Reviewed Articles

- Caballero, M.D.**, Gunda, T., McDonald, Y.J., (2023). Energy Justice & Coastal Communities: The Case for Meaningful Marine Renewable Energy Development. *Renewable and Sustainable Energy Reviews*, 184. <https://doi.org/10.1016/j.rser.2023.113491>
- Caballero, M.D.**, Gunda, T., McDonald, Y.J. (2022). Pollution in the Press: Employing Text Analytics to Understand Regional Water Quality Narratives. *Frontiers in Environmental Science*, 10. <https://doi.org/10.3389/fenvs.2022.770812>
- McDonald, Y.J., Anderson, K.M., **Caballero, M.D.**, Ding, K.J., Fisher, D, Hill, E., and Morkel, C. (2021). Where are the community water systems? A systematic review of geospatial representation of United States community water system service areas. *American Water Works Association Water Science*, e1266. <https://doi.org/10.1002/avs2.1266>
- Caballero M.D.**, Amiri S, Denney JT, Monsivais P, Hystad P, Amram O (2018). Estimated Residential Exposure to Agricultural Chemicals and Premature Mortality by Parkinson's Disease in Washington State. *International Journal of Environmental Research and Public Health*. 2018; 15(12):2885.

Under Review

- Caballero, M.D.**, Gilligan J.M., Vandenberg, M.P., (2023). Incentivizing Individual Action: Behavioral Plasticity and the 2022 Inflation Reduction Act. *Submitted to Nature Climate Change*.

Manuscripts in Preparation

- Anderson, K.M., **Caballero, M.D.**, Caola, M.A., Ding, J.K., McDonald, Y.J., (2023). Spatializing Water Justice: Using Community Water System Estimated Service Area Boundaries to Understand Drinking Water Violations. *Target Journal: Environmental Justice*
- Caballero M.D.**, Mott, J.M., Jackson N.D., Staid, A., (2023). Risks of Reductionism: Comparing Climate and Equity Methodologies for Interdisciplinary Energy Justice. *Target Journal: Risk Analysis*

Technical Reports

- Caballero M.D.**, Bansal, A., Moore-Bloom, R., Quigley, E.V., *Community-Defined Decarbonization: Reflecting Rural Desires for an Equitable Clean Energy Transition in Washington* (2022). Clean Energy Transition Institute, Seattle, WA.
- Tidwell, V., Gunda, T., **Caballero, M.D.**, Xu, P., Xu, X., Bernknopf, R., ... & Jacobson, J. (2022). *Produced Water-Economic, Socio, Environmental Simulation Model (PW-ESEim) Model: Proof-of-Concept for Southeastern New Mexico*. Sandia National Lab. Albuquerque, NM.

PRESENTATIONS

Conference Presentations

- Caballero, M.D.**, *Community-Defined Decarbonization: Reflecting Rural and Tribal Desires for an Equitable Clean Energy Transition in Washington State* (panel: presenter). American Association of Geographers, March 2023, Denver, CO.
- Caballero, M.D.**, Gunda, T., McDonald, Y.J., *Marine Renewable Energy: Identifying Opportunities to Promote Energy Justice and Community Buy-in* (panel: co-presenter). American Association of Geographers, March 2023, Denver, CO.
- Haapanen, K.A., Wiley, K., **Caballero, M.D.**, *An Empowerment Framework for Community-Engaged Research* (panel: co-presenter). All-in: Co-Creating Knowledge for Justice, October 2022, Santa Barbara, CA.

Caballero, M.D., Gunda, T., McDonald, Y.J., *Marine Renewable Energy: Identifying Opportunities to Promote Energy Justice and Community Buy-in* (panel: presenter). Behavior, Energy, and Climate Change, November 2022, Washington, DC.

Caballero, M.D., Mott, J.R., Jackson, N., Staid, A., *Risks of Reductionism: Comparing Climate & Equity Methodologies for Interdisciplinary Energy Justice Research* (panel: presenter). Society for Risk Analysis Annual Conference, December 2022, Tampa, FL.

Caballero, M.D., Fernandez, A., Manners, J., Roark, E., McDonald, Y.J., *Tennessee Private Well Project: Estimating Alternative Water Sources, Reliant Populations, and Contaminant Risk in Rural Tennessee* (poster: co-presenter). Yale New Horizons in Conservation Conference, March 2022, Virtual.

Anderson, K.M., **Caballero, M.D.**, McDonald, Y.J., *Exploring Drinking Water (In)justice at the Community-Level: Methodological Applications to Promote Change* (poster: co-presenter). Yale New Horizons in Conservation Conference, March 2022, Virtual.

Caballero, M.D., McDonald, Y.J., *Crude Oil Production and Regulation of BTEX in Drinking Water in the United States* (panel: presenter). American Association of Geographers (AAG) Annual Conference, April 2021, Virtual.

Caballero, M.D., Gunda, T., McDonald, Y.J., Gilligan, J.M., *Pollution in the Press: Employing Text Analytics to Understand Regional Water Quality Narratives*, (panel: presenter). American Association of Geographers (AAG) Annual Conference, April 2021, Virtual.

Caballero, M.D., Gunda, T., McDonald, Y.J., Gilligan, J.M., *Pollution in the Press: Employing Text Analytics to Understand Regional Water Quality Narratives*, (poster: presenter). American Geophysical Union (AGU) Fall Conference, December 2020, Virtual.

Caballero, M.D., Lioce, M., Williams, D., *Assessing Active Extramural Awards at NIOSH: An Overview of Research Outputs by the Top 7 States Receiving the Greatest Number of Grants, FY2018*, (poster: presenter). Annual CDC Undergraduate Public Health Scholars (CUPS) Conference, August 2019, Atlanta, GA.

Caballero, M.D., Amiri S., Denney JT., Monsivais P., Hystad P., Amram O., *Estimated Residential Exposure to Agricultural Chemicals and Premature Mortality by Parkinson's Disease in Washington State*, (poster: presenter). American Association of Geographers (AAG) Annual Conference, April 2019, Washington, DC.

INVITED PRESENTATIONS

Caballero, M.D., Fernandez, A., Manners, J., Roark, E., McDonald, Y.J., *Tennessee Private Well Project: Estimating Alternative Water Sources, Reliant Populations, and Contaminant Risk in Rural Tennessee* (webinar: co-presenter). National Environmental Health Association, March 2022, Virtual.

McDonald, Y.J., Anderson, K.M., and **Caballero, M.D.**, *GIS and Drinking Water Justice*. Special Topics: Computing and the Environment (CS 3891), School of Engineering, Vanderbilt University. Instructor: Doug Fisher, PhD., October 2021.

Zepeda-Bendito, T., **Caballero, M.D.**, *Essential Workers Advocacy: Acts of Resistance and Organizing to Build Healthier Communities in the Wenatchee Valley, WA*, Social Determinants of Health (HODH-3650), Vanderbilt University. Instructor: Dr. Yolanda McDonald, PhD., October 2020.

UNIVERSITY SERVICE

CRA Admissions Committee

Committee Member

Department of Human and Organizational Development, Peabody College
Vanderbilt University

December 2021- May 2022

Community Research and Action Student Association

Treasurer

Department of Human and Organizational Development, Peabody College
Vanderbilt University

September 2021- May 2023

SKILLS

Experience with a range of data management, analysis, and visualization software, including ArcGIS Pro, RStudio, Stata, SPSS, Adobe Illustrator, and Canva.