Graham Diedrich, MPP

M.S. Data Science Candidate, Michigan State University

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Education

Master of Science in Data Science
May 2025

Michigan State University, East Lansing, MI
Specializations: Environmental and Social Systems Modeling, Community Engagement

Master of Public Policy
May 2023

Michigan State University, East Lansing, MI
Specialization: Environmental Science and Policy

Bachelor of Arts in International Relations
August 2021

Michigan State University, East Lansing, MI
Focus Area: International Environmental Law

Research Experience

Environmental Justice Fellow
April 2024 – Present

Center for Environmental Justice,
Smithsonian Institution, Washington, DC

> Investigating socio-demographic and environmental footprint of photovoltaics among underserved farming communities in Virginia.
- Managing a total of $140,000 in funding for quantitative modeling, policy analysis, and community-engaged scholarship.
- Employing probit models to assess equity gaps in state/federal subsidies for solar installation.
- Conducting a geospatial analysis in ArcGIS with Landsat and Sentinel imagery to assess land-use impacts associated with solar sites.
- Working with conservation biologists at the Virginia Working Landscapes Program and Smithsonian Migratory Bird Center to evaluate biodiversity and species richness.

Graduate Student Researcher
October 2021 – Present

Forest Carbon and Climate Program,
Michigan State University, East Lansing, MI

> Collaborating alongside American Forests, the Northern Institute of Applied Climate Science, the Canadian Forest Service Carbon Accounting Team, and various state/federal partners model the effects of forest management and conservation on future greenhouse gas emission.
- Defining lifecycle flow networks, parameters, spatial and temporal references, and economic inputs for analyses in Michigan, Minnesota, Wisconsin, and California.

> Spearheading a state policy-tracking initiative with $50,000 in support from the Environmental Defense Fund.
- Analyzed and tracked state-level initiatives impacting forests' climate role.
- Utilized STATA and R for comparative legislative analyses.
- Developed an interactive policy database and maps for 50 states.
- Produced six white papers and a peer-reviewed publication (in progress).

- Provided insights to state policymakers for enhanced decision-making.

> Led a $12,000 funded analysis on the relationship between voluntary carbon markets and preferential tax programs in nine states.
- Conducted qualitative interviews to assessing program compatibility.
- Contributed to multi-institutional policy-adjacent projects, including carbon energy modeling.
- Delivered a comprehensive report detailing results from qualitative interviews and policy analysis.
- Led to an advanced understanding of legal, administrative, and operational contexts affecting carbon offset projects and preferential tax treatment programs.

Catalyst Leadership Circle Fellow   May 2023 – August 2023

Graham Sustainability Institute,
University of Michigan, Ann Arbor, MI

> Developed two community-guided greenhouse gas inventories for Grand Haven, MI, and Rockford, MI.
- Led a team to gather emissions data from dozens of key stakeholders.
- Employed spatial and temporal data with field research methods.
- Conducted modeling using ICLEI ClearPath and EPA GHG Tool in accordance with the Greenhouse Gas Protocol.
- Presented findings on decarbonization and environmental justice to diverse audiences.
- Determined 2022 emissions for both municipalities and empowered local communities with tools for meaningful climate action.

Teaching & Advising

Bailey Scholars Program Graduate Fellow   April 2024 – Present

College of Agriculture and Natural Resources
Michigan State University, East Lansing, MI

> Co-facilitating two undergraduate courses (ANR 210 and ANR 310) through dialogue, discussion, and developing a collaborative learning community.

Graduate Coordinator & Consultant   January 2022 – Present

The Writing Center @ MSU, East Lansing, MI

> Conducting in-person and virtual writing consultations and collaborating with clients to enhance their writing skills and address specific concerns.
> Offering generative feedback, support, and resources aligned with Writing Center pedagogy, fostering an environment that encourages continuous improvement in writing proficiency.

Public Policy Learning Assistant   January 2022 – May 2023

Department of Political Science,
Michigan State University, East Lansing, MI

> Graded assignments and provided lectures on environmental policy for four undergraduate sections (PLS 422 and PLS 494) as part of the Michigan Government Semester Program.
> Improved student comprehension of environmental legislation by 14% compared to pre-testing.

Publications

Diedrich, G. (2023). Climate Resilience and Environmental Justice: A Framework for Evaluating Municipal Climate Action Plans. (manuscript submitted)

Diedrich, G. & Clay, K. (2023). Forest Preferential Property Tax Programs and Carbon Project Compatibility: An assessment of program compatibilities across nine states. MSU Forest Carbon and Climate Program. East Lansing, MI. https://doi.org/10.5281/zenodo.10680874.

Diedrich, G. (2023). From Data to Action: Harnessing GHG Inventories for Local Sustainability Initiatives. U-M Graham Sustainability Institute. Ann Arbor, MI.

Diedrich, G. (2023). Embodied Carbon Policies. MSU Forest Carbon and Climate Program. East Lansing, MI.

Diedrich, G. (2023). State Forest Certification. MSU Forest Carbon and Climate Program. East Lansing, MI.

Diedrich, G. (2023). State Cap-and-Trade Programs. MSU Forest Carbon and Climate Program. East Lansing, MI.

Diedrich, G. (2023). State-Level Forest BMPs. MSU Forest Carbon and Climate Program. East Lansing, MI.

Kreye, M., Clay, K., Chizmar, S., Cooper, L., **Diedrich, G.**, Gadoth-Goodman, D., Parajuli, R., Sutton, A. (2023). Forest Carbon Market Structures and Mechanism. Forest Owner Carbon and Climate Education Program. East State College, PA.

Diedrich, G. (2023). Who's Paying the Price? The Legacy of the Part 201 Program in Michigan. East Lansing, MI.

Halle, B., **Diedrich, G.**, Lee, S. (2022). Willingness to Pay for Renewable Energy in East Lansing. East Lansing, MI.

Diedrich, G. (2022). An Impact Evaluation Proposal: Oregon's 'Cap-and-Trade' Climate Protection Program. MSU Forest Carbon and Climate Program. East Lansing, MI.

Diedrich, G. (2022). How will the Inflation Reduction Act impact forest and carbon management? MSU Forest Carbon and Climate Program. East Lansing, MI.

Diedrich, G. (2022). How will the 2021 Infrastructure Investment and Jobs Act impact forests and climate? MSU Forest Carbon and Climate Program. East Lansing, MI.

Diedrich, G. (2022). Carbon Pricing: Carbon Markets and Carbon Taxes. MSU Forest Carbon and Climate Program. East Lansing, MI.

Conference Presentations

Diedrich, G. (2023). Assessing the Interplay between State Climate Plans and the SDGs: A Case Study in the Great Lakes Region. Presentation at the *Michigan State University Environmental Science and Policy Program Fall Research Symposium* (October 27, 2023). East Lansing, MI.

Diedrich, G. (2023). Who's Paying the Price? The Legacy of the Part 201 Program in Michigan. Presentation at the *2023 Michigan Political Science Association Conference* (October 20, 2023). Flint, MI.

Diedrich, G. (2023). Building Resilient Communities: The Intersection of Climate Change, Local Governance, and Environmental Justice. Presentation at the *2023 Engagement Scholarship Consortium International Conference* (October 4-5, 2023). East Lansing, MI.

Diedrich, G. (2023). Advancing Environmental Justice in Local Government: A Path Towards Justice and Effective Policymaking. Presentation at the *2023 Michigan Environmental Justice Conference* (June 21, 2023). Detroit, MI.

Diedrich, G. (2022). Forests as a Climate Solution: State Policy Tracking Initiative. Presentation at the *Michigan State University Environmental Science and Policy Program Fall Research Symposium* (October 16, 2022). East Lansing, MI.

Certifications

Graduate Certificate in Environmental and Social Systems Modeling   May 2025
Michigan State University, East Lansing, MI
Topics: Environmental modeling, agent-based modeling, system dynamics modeling, participatory model-building, hierarchical linear modeling, and structural equation modeling

Graduate Certificate in Community Engagement   May 2025
Michigan State University, East Lansing, MI
Topics: Foundations of community engaged scholarship, techniques for community engaged research, evaluation of community partnerships, communicating with publics

Graduate Certificate in College Teaching   April 2023
Michigan State University, East Lansing, MI
Topics: Developing discipline-related teaching strategies, creating effective learning environments, assessing student success

Inclusive Teaching Certificate   January 2022
Columbia University, New York, NY
Topics: Inclusive course climate, setting explicit expectations, promoting diversity and inclusion, course accessibility, cultivating critical self-reflection

Technical Skills

Programming Languages and Packages: Python, R, C, NumPy, Pandas, Sklearn, Seaborn, ggplot2, Spark, Hadoop, NLTK, Beautiful Soup

Software Platforms: ArcGIS, Stata, Microsoft Azure, Jupyter Notebook, LEAP, Tableau, MongoDB, MySQL

Fellowships, Grants, & Awards

Margaret A. Davidson Graduate Fellowship   August 2024
National Oceanic and Atmospheric Administration, U.S. Department of Commerce

DOE Scholars Program Fellowship   June 2024

Office of Clean Energy Demonstrations, U.S. Department of Energy

Life on a Sustainable Planet Environmental Justice Fellowship   April 2024
Center for Environmental Justice, Smithsonian Institution

Bailey Scholars Program Fellowship   April 2024
College of Agriculture and Natural Resources, Michigan State University

Competitive Student Research Grant   March 2024
Environmental Science and Policy Program, Michigan State University

Student Research Symposium Best Presentation Award (Runner-Up)   December 2023
Environmental Science and Policy Program, Michigan State University

National Science Foundation STEM Ambassador Program   September 2023
Michigan State University

MSU Cloud Computing Fellowship   August 2023
Institute for Cyber-Enabled Research, Michigan State University

Catalyst Leadership Circle Fellowship   May 2023
Graham Sustainability Institute, University of Michigan

Public Policy Learning Assistant Scholarship   January 2022, January 2023
Department of Political Science, Michigan State University

Tom Schneider Peace Award   May 2019
Peace Education Center

Community & University Service

Environmental Commissioner   February 2022 – Present
Government of Meridian Township

- Producing a municipal sustainability plan in coordination with other elected broad members and representatives.
- Reviewing grant and other funding requests for local environmental projects.
- Coordinating recycling and reuse events.

Planting Volunteer   April 2019 – Present
ReLeaf Michigan

Student Committee Lead   August 2023 – October 2023
ESPP Fall Research Symposium, Michigan State University

Conference Reviewer   April 2023
Engagement Scholarship Consortium