

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

Margaret A. Davidson Graduate Fellow

August 2024 – Present

Wells National Estuarine Research Reserve,

National Oceanic Atmospheric Administration, Wells, ME

- > **Project:** Developing an information flow and prioritization model to analyze how local, state, federal, and non-profit governance and planning structures integrate reserve science to enhance coastal resilience policies and decision-making.
 - Community engagement and coalition building through focus groups, semi-structured interviews, and surveys.

Environmental Justice Fellow

April 2024 – Present

Virginia Working Landscapes,

Smithsonian Institution, Washington, DC

- > **Project:** Investigating socio-demographic and environmental footprint of photovoltaics among underserved farming communities in Virginia, managing \$140,000 in funding for quantitative modeling, survey research, and policy analysis.
 - Designing and distributing a statewide, statistically representative survey of Virginia farmers.
 - Employing probit models to assess equity gaps in state/federal subsidies for solar installation.
 - Conducted study to determine if underserved farming communities are predictive of restrictive renewable energy ordinances, with a focus on identifying equity implications.
 - Creating a first-of-its-kind agricultural producer equity index (APEI), mapping to every county in the U.S.
 - 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

- > **Project:** 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.
- > **Project:** 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.
- > **Project:** 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.

DOE Scholars Fellow

June 2024 – August 2024

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

- > **Project:** Mapped locations of schools, businesses, and residences using ArcGIS Pro.
 - Identified climate and economic justice (CJEST) disadvantaged status.
 - Analyzed proximity to EPA-regulated facilities to support negotiations on community benefit plans (CBPs) for the Industrial Demonstrations Program (IDP).
- > **Project:** Designed HTML code to automate an Excel document tracker used across multiple DOE divisions, streamlining and building efficiencies into a \$20 billion negotiations process.
- > **Project:** Examined CBP workforce and funding metrics to ascertain diverging trends by industry type.

Catalyst Leadership Circle Fellow

May 2023 – August 2023

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

- > **Project:** 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.
- > Grading students and instructing them in self-reflection and peer-review.
- > Helping to direct classroom discussion, develop engaging course activities.

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.
- > Building an advisory system to facilitate 1-1 check-ins between myself and undergraduate staff.

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. (2024). Evaluating local climate policy: Municipal action plans through the lens of resilience and environmental justice. *PLoS Climate* 3 (1): e0000395. <https://doi.org/10.1371/journal.pclm.0000395>.

Diedrich, G. (2024). Evaluating Community Benefits: Trends in Job Creation and Funding Metrics for the Industrial Demonstrations Program. Office of Clean Energy Demonstrations, U.S. Department of Energy. Washington, D.C.

Diedrich, G. & Clay, K. (2024). Navigating dual enrollment: Assessing compatibility between forest carbon offset projects and preferential property tax programs across nine states. (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. (2024). The Race for Renewables: Modeling Renewable Energy Productivity Amid Local Siting Restrictions in Michigan. Presentation at the *Michigan State University*

Environmental Science and Policy Program Fall Research Symposium (October 11, 2024). East Lansing, MI.

Diedrich, G. (2024). Charting Climate Confidence through Institutional Trust in European Governments. Presentation at the *5th International European Social Survey Conference* (July 8-10, 2024). Lisbon, Portugal.

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, Tableau, MongoDB, MySQL

Fellowships, Grants, & Awards

Margaret A. Davidson Graduate Fellowship National Oceanic and Atmospheric Administration, U.S. Department of Commerce	August 2024
DOE Scholars Program Fellowship Office of Clean Energy Demonstrations, U.S. Department of Energy	June 2024
2024 NatSci Awesome Graduate Student Award College of Natural Science, Michigan State University	May 2024
Life on a Sustainable Planet Environmental Justice Fellowship Center for Environmental Justice, Smithsonian Institution	April 2024
Bailey Scholars Program Fellowship College of Agriculture and Natural Resources, Michigan State University	April 2024
US Fulbright Scholars Research Award Institute of International Education	March 2024
Competitive Student Research Grant Environmental Science and Policy Program, Michigan State University	March 2024
Student Research Symposium Best Presentation Award (Runner-Up) Environmental Science and Policy Program, Michigan State University	December 2023
National Science Foundation STEM Ambassador Program Michigan State University	September 2023
MSU Cloud Computing Fellowship Institute for Cyber-Enabled Research, Michigan State University	August 2023
Catalyst Leadership Circle Fellowship Graham Sustainability Institute, University of Michigan	May 2023
Public Policy Learning Assistant Scholarship Department of Political Science, Michigan State University	January 2022, January 2023
Tom Schneider Peace Award Peace Education Center	May 2019

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