# Graham Diedrich, MPP, MS

Ph.D. in Political Science Student,
University of Michigan

☐ +1 517-974-6046
✉ diedgr@umich.edu
⟨⟩ www.grahamdiedrich.com

## Education

| | |
|---|---|
| **Doctor of Philosophy in Political Science** | Aug 2025 – May 2031 |

Department of Political Science,
University of Michigan, Ann Arbor, MI

> ICPSR Summer Program, 2025

| | |
|---|---|
| **Master of Science in Data Science** | Aug 2023 – May 2025 |

Department of Statistics and Probability,
Michigan State University, East Lansing, MI

> **Captone:** *Shining Insights: Examining the Equity Implications of Renewable Energy Restrictions for Disadvantaged Farmers*—created three time-lagged logistic regression models, found a strong positive relationship between the proportion of non-white farm operators and the likelihood of restrictions.
> Graduate Certificate: Environmental and Social Systems Modeling
> Graduate Certificate: Community Engagement

| | |
|---|---|
| **Master of Public Policy** | Aug 2021 – May 2023 |

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

> **Capstone:** *Who's Paying the Price? The Effects of Loosening Environmental Cleanup in Michigan*—evaluated 1990–2018 statutory changes to Michigan's cleanup program, finding 67% of legislative components restricted
> Graduate Specialization: Environmental Science and Policy
> Graduate Certificate: College Teaching

| | |
|---|---|
| **Bachelor of Arts in International Relations** | Aug 2019 – Aug 2021 |

James Madison College,
Michigan State University, East Lansing, MI
> Focus Area: International Environmental Law

## Research Experience

| | |
|---|---|
| **Margaret A. Davidson Graduate Fellow** | Aug 2024 – Present |

Wells National Estuarine Research Reserve,
National Oceanic and Atmospheric Administration, Wells, ME

> **Project:** Developing an information flow and prioritization model to analyze how 11 local governments, state and federal agencies, and non-profits in southern Maine integrate reserve science to enhance coastal resilience decision-making
>   • Creating a stakeholder engagement database of 340 contacts to support upcoming focus groups, and semi-structured interviews, and surveys
>   • Planning participatory modeling sessions to facilitate collaborative decision-making and incorporate diverse stakeholder perspectives into the prioritization process
>   • Analyzing data from stakeholder engagement to refine the model, ensuring it aligns with local needs and scientific recommendations for coastal resilience

**Community and Environment Fellow**                                      Apr 2024 – Present
Virginia Working Landscapes,
Smithsonian Conservation Biology Institute, Washington, DC

> **Project:** Designing and distributing a statewide representative mail survey to 3,050 Virginia farmers
> • Met with 10-15 organizations, including state agencies, nonprofits, and farming interest groups, to iteratively develop the questionnaire
> • Conducted an initial pilot survey online to inform the full survey, achieving a strong 54% response rate
> • Planning to develop reports for partners and a peer-reviewed publication based on survey findings

> **Project:** Creating a first-of-its-kind underserved farmers index (UFI), consisting of 7 variables from the Census of Agriculture, to document underserved farming communities nationwide
> • Utilizing data from the 2022 Census of Agriculture (COA), which includes detailed information on farm operators, land use, operator demographics, and financial conditions
> • Applied PCA to reduce dimensionality and extract dominant patterns from the data, with loadings used to calculate normalized weights for each variable to creating the composite index
> • Pursuing USDA collaboration and launching a publicly available data repository and web map viewer alongside a peer-reviewed publication in early 2025

> **Project:** Determining whether underserved farming communities are predictive of restrictive renewable energy ordinances, with a focus on identifying equity implications
> • Using the UFI as a key independent variable, assessed the relationship between county-level renewable energy ordinances (controlling for demographic and political factors at local and state levels)
> • Developed time-lagged logistic regression models, with two specialized to focus on wind and solar restrictions to capture differences
> • Preliminary results indicate that counties with a higher presence of underserved farmers are less likely to impose restrictions, particularly for wind energy (peer-reviewed paper incoming)

> **Project:** Conducting a geospatial analysis in ArcGIS with Landsat and Sentinel imagery to assess land-use and biodiversity impacts associated with utility-scale solar projects
> • Planning to use spatial joins and regression analyses to examine the relationships between land use and biodiversity for solar projects across the U.S. and in Virginia
> • Collaborating with staff biologists on a joint publication

**DOE Scholars Fellow**                                                   Jun 2024 – Aug 2024
Office of Clean Energy Demonstrations,
U.S. Department of Energy, Washington, DC

> **Project:** Plotted locations of schools, businesses, and residences using ArcGIS Pro, layering these with climate and economic justice screening tool (CEJST) data
> • Identified census tracks with disadvantaged status and measured proximity to EPA-regulated facilities to evaluate environmental justice risks and opportunities for mitigation
> • Created maps utilized to supported negotiations for community benefit plans (CBPs) for 33 industrial demonstrations projects across the U.S.

> **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
> • Developed and tested automation scripts to integrate dynamic updates from Excel into the HTML interface

- Implemented the system across DOE divisions, reducing manual input and improving transparency in negotiation workflows

> **Project:** Examined ongoing CBP proposals influencing workforce development and funding allocations to determine diverging trends by industry type.
  - Analyzed key variables, including workforce training initiatives, investment in local infrastructure, and support for disadvantaged communities
  - Results indicated no significant differences across projects or industry types, suggesting a consistent application of CBP principles
  - Authored a report summarizing findings, which informed DOE strategies to standardize CBP expectations and enhance community outcomes

**Graduate Research Assistant**　　　　　　　　　　　　　　　　　　Oct 2021 – May 2024
Forest Carbon and Climate Program,
Michigan State University, East Lansing, MI

> **Project:** Assessed the impact of different forest management and policy scenarios by modeling the carbon sequestration impacts in forest ecosystems and harvested wood products (HWP)
  - Gathered trade data on timber and harvested wood products from USITC to capture imports/exports of HWP across states for emissions analysis
  - Parameterized three base models for California, Wisconsin, Michigan, and Minnesota using data from FIA on commodity production, retirement, and end-use, defining lifecycle flow networks
  - Collaborated with staff from American Forests, the Northern Institute of Applied Climate Science, and the Canadian Forest Service Carbon Accounting Team to write R code integrating ecosystem model results, inputting them into HWP models, and running simulations

> **Project:** Developed and led a state policy-tracking initiative with $50,000 in support from the Environmental Defense Fund
  - Created the conceptual framework, grouping policies into key areas: GHG emissions and energy, direct financial incentives, forest management and land use, and public procurement
  - Systematically reviewed statutory laws, administrative rulings, regulations, and program websites for 16 state-level policies impacting forests' climate role
  - Utilized STATA and R for comparative legislative analyses
  - Developed an interactive, 70 column database and maps for 50 states
  - Produced 8 white papers and a peer-reviewed publication (in progress)

> **Project:** Led a $12,000 funded analysis on the relationship between voluntary carbon markets and preferential tax programs in 9 states
  - Conducted 35 qualitative interviews to assess program compatibility, focusing on harvest requirements
  - Delivered a comprehensive 68-page 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
  - Invited to join a policy round table discussion and working group at the U.S. Forestry Service

**Catalyst Leadership Circle Fellow**　　　　　　　　　　　　　　　　May 2023 – Aug 2023
Graham Sustainability Institute,
University of Michigan, Ann Arbor, MI

> **Project:** Developed 2 community-guided greenhouse gas inventories for Grand Haven, MI, and Rockford, MI

- Led a team consisting of 5 planning staff to gather data on electricity, transportation, water, waste, and other emissions sectors
- Coordinated with utilities, government departments, water facilities, and waste management companies to collect emissions data across sectors
- Modeling emissions for calendar year 2022 using ICLEI ClearPath and the EPA GHG Tool in accordance with the Greenhouse Gas Protocol
- Presented findings on decarbonization and environmental justice to the public and city councils
- Published 2 individualized emission reports for each city to assist in initial sustainability plan development

## Teaching, Advising, & Engagement

**Community Partnership Graduate Consultant**                    May 2025 – Present
Edward Ginsberg Center,
University of Michigan, Ann Arbor, MI

> Facilitating annual check-in meetings with community organizations to identify priorities and interests, stewarding connection with university students, faculty, and staff to support partnerships

**Bailey Scholars Program Graduate Fellow**                    Apr 2024 – May 2025
College of Agriculture and Natural Resources
Michigan State University, East Lansing, MI

> Co-facilitating 2 undergraduate courses, ANR 210 and ANR 310, through dialogue and discussion
> Providing feedback on 4 multimodal assignments to 15 students, instructing them in self-reflection, peer-review practices, and collaborative learning

**Graduate Coordinator & Consultant**                    Jan 2023 – May 2025
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
> Individualized writing support to 100-200 undergraduate and graduate students, leading to greater confidence in written communication
> Event planning and advisory support for 15-20 undergraduate consultants, resulting in increased engagement and professional development opportunities for staff

**Public Policy Learning Assistant**                    Jan 2022 – May 2023
Department of Political Science,
Michigan State University, East Lansing, MI

> Graded assignments and provided lectures on environmental policy for 4 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 levels

## Publications

**Diedrich, G.** (2025). Mapping historically underserved farmers and ranchers: A national underserved farmer index. (manuscript in submission)

**Diedrich, G.** & Clay, K. (2025). Navigating dual enrollment: Assessing compatibility between improved management carbon offset projects and preferential property tax programs across nine states. *Journal of Sustainable Forestry*, 1–24. https://doi.org/10.1080/10549811.2025.2527756

**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. https://www.grahamdiedrich.com/_files/ugd/e8d0f3_d001e4c0a29d4964bfadcc6783ba26fe.pdf.

**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. https://graham.umich.edu/media/files/CLCF-2023-Diedrich-Report.pdf.

**Diedrich, G.** (2023). Embodied Carbon Policies. MSU Forest Carbon and Climate Program. East Lansing, MI. https://www.canr.msu.edu/resources/embodied-carbon-policies.

**Diedrich, G.** (2023). State Forest Certification. MSU Forest Carbon and Climate Program. East Lansing, MI. https://www.canr.msu.edu/resources/state-forest-certification.

**Diedrich, G.** (2023). State Cap-and-Trade Programs. MSU Forest Carbon and Climate Program. East Lansing, MI. https://www.canr.msu.edu/resources/state-cap-and-trade-programs.

**Diedrich, G.** (2023). State-Level Forest BMPs. MSU Forest Carbon and Climate Program. East Lansing, MI. https://www.canr.msu.edu/resources/state-level-forest-bmps.

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. https://extension.psu.edu/forest-carbon-market-structures-and-mechanisms.

**Diedrich, G.** (2023). Who's Paying the Price? The Legacy of the Part 201 Program in Michigan. East Lansing, MI. https://www.grahamdiedrich.com/_files/ugd/e8d0f3_5db37b22ac4942c1ae64f1954a795c74.pdf.

Halle, B., **Diedrich, G.**, Lee, S. (2022). Willingness to Pay for Renewable Energy in East Lansing. East Lansing, MI. https://www.grahamdiedrich.com/_files/ugd/e8d0f3_83c66fc1e75f4d10b6472834c5364265.pdf.

**Diedrich, G.** (2022). An Impact Evaluation Proposal: Oregon's 'Cap-and-Trade' Climate Protection Program. MSU Forest Carbon and Climate Program. East Lansing, MI. https://www.grahamdiedrich.com/_files/ugd/e8d0f3_0c0f1d476d614ba0934635f4118b2522.pdf.

**Diedrich, G.** (2022). How will the Inflation Reduction Act impact forest and carbon management? MSU Forest Carbon and Climate Program. East Lansing, MI. https://www.canr.msu.edu/news/how-will-the-inflation-reduction-act-impact-forest-and-carbon-management.

**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. https://www.canr.msu.edu/news/how-will-the-2020-infrastructure-investment-and-jobs-act-impact-forests-and-climate.

**Diedrich, G.** (2022). Carbon Pricing: Carbon Markets and Carbon Taxes. MSU Forest Carbon and Climate Program. East Lansing, MI. https://www.canr.msu.edu/fccp/FCCP-ORL/Carbon%20Pricing%20-%20Carbon%20Markets%20and%20Carbon%20Taxes.pdf.

## Datasets

**Diedrich, G.** (2024). Underserved Farmers Index. Self-published. https://www.grahamdiedrich.com/data/ufi.

## Conference Presentations

Ray, M., Van Loh, B., Callahan, M., Petty, D., **Diedrich, G.,** Prior, S., Soltis, B. (2025). What AI Can't Replace: Building Community Through Care and Trust. Presentation at the *Michigan State University Teaching and Learning Knowledge Sharing (TALKS) Conference* (May 8, 2025). East Lansing, MI.

**Diedrich, G.**, Johnson, A., Cooper, N. (2025). Shining Insights: Examining the Equity Implications of Renewable Energy Restrictions for Underserved Farmers. Presentation at the *2025 Midwest Climate Summit* (May 1, 2025). Madison, WI.

**Diedrich, G.** (2024). Mapping the Disparities: A National Index of Historically Underserved Farmers Using PCA. Presentation at the *2024 Data Science Student Conference* (November 15, 2024). East Lansing, MI.

**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.

## Invited Presentations & Talks

"Equity in Local Climate Action Plans: A Just Solution for Michigan" Presentation for Michigan Climate Action Network. May 21, 2025.

## Certifications & Trainings

**ICPSR Summer Program**                                                                              Aug 2025
Inter-university Consortium for Political and Social Research, Ann Arbor, MI

> **Topics:** Regression analysis, empirical modeling for social science, statistical machine learning

**IPU Grid Power School**                                                                 May 2025
Institute of Public Utilities, East Lansing, MI

> **Topics:** Demand-Side forecasting and efficiency, load management, policy evaluation

**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**                                        Apr 2023
Michigan State University, East Lansing, MI

> **Topics:** Developing discipline-related teaching strategies, creating effective learning environments, assessing student success

**Inclusive Teaching Certificate**                                                 Jan 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 & Methods

> **Programming**: Python, R, SQL, C; Libraries/Packages: NumPy, Pandas, Seaborn
> **Data & Analysis Software**: ArcGIS, Stata, Jupyter Notebook, ICLEI ClearPath, Tableau, Low Emissions Analysis Platform (LEAP)
> **Methods**: Time-series data analysis, classification algorithms (logistic regression, KNN, SVM); prediction algorithms (RandomForest, XGBoost), qualitative content analysis (inductive and deductive); survey design (online and mail); geo-spatial modeling

## Fellowships, Grants, & Awards

**Community Engagement Award**                                                      Mar 2025
Environmental Science and Policy Program, Michigan State University

**Margaret A. Davidson Graduate Fellowship**                                        Aug 2024
Office for Coastal Management, National Oceanic and Atmospheric Administration

**DOE Scholars Program Fellowship**                                                 Jun 2024
Office of Clean Energy Demonstrations, U.S. Department of Energy

**2024 NatSci Awesome Graduate Student Award**                                      May 2024
College of Natural Science, Michigan State University

**Life on a Sustainable Planet Community and Environment Fellowship**               Apr 2024
Smithsonian Institution

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

**US Fulbright Scholars Research Award**                                            Mar 2024
Institute of International Education

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

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

**National Science Foundation STEM Ambassador Program**     Sep 2023
Outreach and Engagement Office, Michigan State University

**MSU Cloud Computing Fellowship**     Aug 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**     Jan 2022, Jan 2023
Department of Political Science, Michigan State University

**Tom Schneider Peace Award**     May 2019
Peace Education Center

## Community & University Service

**Environmental Commissioner**     Feb 2023 – Feb 2025
Government of Meridian Township

**Student Committee Lead**     Aug 2023 – Oct 2023
ESPP Fall Research Symposium, Michigan State University

**Conference Reviewer**     April 2023
Engagement Scholarship Consortium