

PELEG KREMER

Department of Geography and the Environment, Villanova University

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EDUCATION

- 2011** Ph.D. in Energy and Environmental Policy, Center for Energy and Environmental Policy (CEEP), University of Delaware, Newark, DE.
- 2005** M.A. in Geography and the Human Environment (Magna Cum Laude), Tel Aviv University, Tel Aviv, Israel.
- 2000** B.Sc. (Agr.) in Agricultural Economics and Management; Major: Agriculture & Environmental Quality. The Hebrew University of Jerusalem, Rehovot, Israel.

ACADEMIC APPOINTMENTS

- Associate Professor (Tenured) August 2022–Present
Department of Geography and the Environment, Villanova University
- Program Director, Environmental Studies Program August 2021–Present
Villanova University
- Assistant Professor (Tenure-Track) August 2016–August 2022
Department of Geography and the Environment, Villanova University
- Visiting Assistant Professor August 2015–August 2016
Department of Geography and the Environment, Villanova University
- Visiting Research Fellow, Landscape Ecology 2015
Humboldt University, Berlin
- Post-Doctoral Fellow 2011–2014
Tishman Environment and Design Center, The New School, New York, NY

RESEARCH AND SCHOLARSHIP

Legend: *bold* = Kremer, P. **Student mentee tags:** ^{UP} = undergraduate, primary mentor; ^{US} = undergraduate, secondary mentor; ^{GP} = graduate, primary mentor; ^{GS} = graduate, secondary mentor.

Research Awards

WRA Innovation & Collaboration Research Award, Water Resources Association of the Delaware River Basin, September 2024.

Edited Books

Piselli, C., Altan, H., **Kremer, P.** & Balaban, O. (Eds.). (2022). *Innovating Strategies and Solutions for Urban Performance and Regeneration*. Springer Nature.

Book Chapters

Stewart, J. D.^{GP}, & **Kremer, P.** (2021). The Urban Atmospheric Microbiome. In R. C. Brears (Ed.), *The Palgrave Encyclopedia of Urban and Regional Futures* (pp. 1956–1961). Palgrave MacMillan.

- McPhearson, T., Karki, M., Herzog, C., Abbadie, L., Karki, M., **Kremer, P.** Perini, K., Santiago Fink, H., & Sutto, P. (2018). Urban Ecosystems and Biodiversity. In *Climate Change and Cities: Second Assessment Report of the Urban Climate Change Research Network* (pp. 257–318). Cambridge University Press.
- Gómez-Baggethun, E., Gren, Å., Barton, D. N., Langemeyer, J., McPhearson, T., O'Farrell, P., Andersson, E., Hamstead, Z., & **Kremer, P.** (2013). Urban Ecosystem Services. In *Urbanization, Biodiversity and Ecosystem Services: Challenges and Opportunities* (pp. 175–251). Springer Netherlands.
- Kremer, P.** DeLiberty, T., & Schreuder, Y. (2012). Defining Local Food Systems. In N. Reid, J. D. Gatrell, & P. S. Ross (Eds.), *Local Food Systems in Old Industrial Regions: Concepts, Spatial Context, and Local Practices*. Vermont: Ashgate Publishing.

Articles in Peer-Reviewed Journals

- Rahman, M.^{GS}, Smith, V. B., **Kremer, P.** Wadzuk, B. M., Jiao, X., Amur, A., & Arabi, S. (2026). Incorporating Artificial Intelligence into the future of Stormwater Management. *Discover Water*.
- Ermagun, A., Janatabadi, F., Safarloo, Z., **Kremer, P.** & Lindley, S. (2026). Urban Flooding Restructures Mobility Through Coupled Behavioral and Network Disruption: A Systematic Review of Evidence. *Sustainable Cities and Society*, 107285.
- Kremer, P.** Weaver, D.^{GS}, & Stewart, J. D.^{GP} (2026). Sensitivity of urban structure–temperature relationships to grid parameterization. *Ecological Informatics*, 93, 103587.
- Hassebrock, J. M.^{GS}, **Kremer, P.** Seng, K. E., & Goldsmith, S. T. (2025). Long-term impacts of land cover change on nitrate export in mixed-use exurban and suburban watersheds. *Science of The Total Environment*, 1002, 180612.
- Al Mehedi, M. A.^{GS}, Smith, V., & **Kremer, P.** (2025). A comparative analysis of urban and peri-urban flood identification using SAR imagery. *PLOS Water*, 4(9), e0000269.
- Scolio, M.^{GP}, Amur, A., Olson, E.^{US}, Smith, V., Wadzuk, B., Homet, K.^{GP}, Devlin, E.^{US}, & **Kremer, P.** (2025). Reconceptualizing urban flood modeling: Toward intersectional and equitable urban flood risk planning. *Sustainable Cities and Society*, 130, 106578.
- Good, K., Robert, E.^{GS}, **Kremer, P.** Wang, Y., & Wilson, J. M. (2025). Subbasin-level discharge–intake flow index to assess potential iodine point source discharges upstream of surface drinking water sources. *Discover Water*, 5(34).
- Scolio, M.^{GP}, **Kremer, P.** Smith, V., Amur, A., Wadzuk, B., Homet, K.^{GP}, Devlin, E.^{US}, Al Mehedi, M. A.^{GS}, & Moore, L. (2025). Delineating urban flooding when incorporating community stormwater knowledge. *Environmental Research: Infrastructure and Sustainability*, 5(1), 015008.
- Terry, B.^{GS}, **Kremer, P.** Goldsmith, S. T., & Shakya, K. M. (2025). Land use regression model to predict nitrogen dioxide in the greater Philadelphia area. *Atmospheric Pollution Research*, 16(1), 102339.
- Joo, H. E.^{GS}, Clark, J. A., **Kremer, P.** & Aronson, M. F. (2024). Socio-environmental drivers of human–nature interactions in urban green spaces. *Urban Ecosystems*, 27(6), 2397–2413.
- Winkler, R. L., Clark, J. A., Locke, D. H., **Kremer, P.** Aronson, M. F., Hoover, F.-A., Joo, H. E.^{GS}, La Rosa, D., Lee, K. J., Lerman, S. B., Pearsall, H., Vargo, T. L., Nilon, C. H., & Lepczyk, C. A. (2024). Unequal access to social, environmental and health amenities in US urban parks. *Nature Cities*, 1(12), 861–870.
- Marks, N. K.^{GS}, Cravotta, C. A., Rossi, M. L.^{GS}, Silva, C., **Kremer, P.** & Goldsmith, S. T. (2024). Exploring spatial and temporal symptoms of the freshwater salinization syndrome in a rural to urban watershed. *Science of The Total Environment*, 947, 174266.

- Lee, K., Aronson, M. F. J., Clark, J. A. G., Hoover, F.-A., Joo, H. E.^{GS}, **Kremer, P.** La Rosa, D., Larson, K. L., Lepczyk, C. A., Lerman, S. B., Locke, D. H., Nilon, C. H., Pearsall, H., & Vargo, T. L. V. (2024). Limitations of existing park quality instruments and suggestions for future research. *Landscape and Urban Planning*, 249, 105127.
- Scolio, M.^{UP}, Bohra, C.^{UP}, **Kremer, P.** & Shakya, K. M. (2024). Spatial Analysis of Intra-Urban Air Pollution Disparities through an Environmental Justice Lens: A Case Study of Philadelphia, PA. *Atmosphere*, 15(7), 755.
- Scolio, M.^{UP}, **Kremer, P.** Zhang, Y., & Shakya, K. M. (2024). Spatial-temporal modeling of the relationship between surface temperature and air temperature in metropolitan urban systems. *Urban Climate*, 55, 101921.
- Jezycki, K. E.^{GS}, Rodriguez, E., Craft, C. B., Neubauer, S. C., Morris, J. T., Goldsmith, S. T., **Kremer, P.** & Weston, N. B. (2024). Metal accumulation in salt marsh soils along the East Coast of the United States. *Science of The Total Environment*, 922, 171025.
- Cook, L. M., Good, K. D., Moretti, M., **Kremer, P.** Wadzuk, B., Traver, R., & Smith, V. (2024). Towards the intentional multifunctionality of urban green infrastructure: a paradox of choice? *npj Urban Sustainability*, 4(1).
- Rossi, M. L.^{GS}, **Kremer, P.** Cravotta, C. A., Seng, K. E., & Goldsmith, S. T. (2023). Land development and road salt usage drive long-term changes in major-ion chemistry of streamwater in six exurban and suburban watersheds, southeastern Pennsylvania, 1999–2019. *Frontiers in Environmental Science*, 11.
- Henderson, A. F.^{US}, Santoro, J. A., & **Kremer, P.** (2023). Impacts of Spatial Scale and Resolution on Species Distribution Models of American Chestnuts. *Forest Ecology and Management*.
- Rossi, M. L.^{GS}, **Kremer, P.** Cravotta, C. A., Scheirer, K. E., & Goldsmith, S. T. (2022). Long-term impacts of impervious surface cover change and roadway deicing agent application on chloride concentrations in exurban and suburban watersheds. *Science of The Total Environment*, 851, 157933.
- Marks, N. K.^{GP}, Hosseiny, H.^{GS}, Bill, V. P.^{UP}, Ahn, K. L.^{UP}, Crimmins, M. C.^{GS}, **Kremer, P.** & Smith, V. B. (2022). Spatial Integration of Urban Runoff Modeling, Heat, and Social Vulnerability for Blue-Green Infrastructure Planning and Management. *Journal of Water Resources Planning and Management*, 148(11).
- Stewart, J. D.^{GP}, & **Kremer, P.** (2022). Temporal change in relationships between urban structure and surface temperature. *Environment and Planning B: Urban Analytics and City Science*, 49(9), 2297–2311.
- Henderson, A. F.^{US}, Santoro, J. A., & **Kremer, P.** (2022). Ensemble Modeling for American Chestnut Distribution: Locating Potential Restoration Sites in Pennsylvania. *Frontiers in Ecology and Evolution*.
- Homet, K.^{GP}, **Kremer, P.** Smith, V., & Strader, S. (2022). Multi-variable assessment of green stormwater infrastructure planning across a city landscape: Incorporating social, environmental, built-environment, and maintenance vulnerabilities. *Frontiers in Environmental Science*, 10.
- Homet, K.^{GP}, **Kremer, P.** Smith, V., Ampomah, R., & Strader, S. M. (2022). Mapping Predicted Areas of Common Maintenance Impacts to Green Stormwater Infrastructure in Philadelphia, Pennsylvania. *Journal of Sustainable Water in the Built Environment*, 8(3).
- Cummings, L. E.^{GP}, Stewart, J. D.^{GP}, **Kremer, P.** & Shakya, K. (2022). Predicting citywide distribution of air pollution using mobile monitoring and three-dimensional urban structure. *Sustainable Cities and Society*, 76, 103510.
- Crimmins, M.^{GS}, Park, S., Smith, V., & **Kremer, P.** (2021). A spatial assessment of high-resolution drainage characteristics and roadway safety during wet conditions. *Applied Geography*, 133, 102477.

- Cummings, L. E.^{GP}, Stewart, J. D.^{GP}, Reist, R.^{GP}, Shakya, K. M., & **Kremer, P.** (2021). Mobile Monitoring of Air Pollution Reveals Spatial and Temporal Variation in an Urban Landscape. *Frontiers in Built Environment*, 7.
- Mitz, E.^{UP}, **Kremer, P.** Larondelle, N., & Stewart, J. D.^{GP} (2021). Structure of Urban Landscape and Surface Temperature: A Case Study in Philadelphia, PA. *Frontiers in Environmental Science*, 9.
- Stewart, J. D.^{GP}, **Kremer, P.** Shakya, K. M., Conway, M.^{UP}, & Saad, A.^{US} (2021). Outdoor Atmospheric Microbial Diversity Is Associated With Urban Landscape Structure and Differs From Indoor-Transit Systems as Revealed by Mobile Monitoring and Three-Dimensional Spatial Analysis. *Frontiers in Ecology and Evolution*, 9.
- Wellmann, T., Lausch, A., Andersson, E., Knapp, S., Cortinovis, C., Jache, J., Scheuer, S., **Kremer, P.** Mascarenhas, A., Kraemer, R., Haase, A., Schug, F., & Haase, D. (2020). Remote sensing in urban planning: Contributions towards ecologically sound policies? *Landscape and Urban Planning*, 204, 103921.
- Shade, C.^{GP}, **Kremer, P.** Rockwell, J. S., & Henderson, K. G.^{UP} (2020). The effects of urban development and current green infrastructure policy on future climate change resilience. *Ecology and Society*, 25(4).
- Godschall, S.^{GS}, Smith, V., Hubler, J., & **Kremer, P.** (2020). A Decision Process for Optimizing Multi-Hazard Shelter Location Using Global Data. *Sustainability*, 12(15), 6252.
- Hosseiny, H.^{GS}, Crimmins, M.^{GS}, Smith, V. B., & **Kremer, P.** (2020). A Generalized Automated Framework for Urban Runoff Modeling and Its Application at a Citywide Landscape. *Water*, 12(2), 357.
- Shakya, K. M., **Kremer, P.** Henderson, K.^{UP}, McMahan, M.^{US}, Peltier, R. E., Bromberg, S.^{UP}, & Stewart, J.^{GP} (2019). Mobile monitoring of air and noise pollution in Philadelphia neighborhoods during summer 2017. *Environmental Pollution*, 255, 113195.
- Shade, C.^{GP}, & **Kremer, P.** (2019). Predicting Land Use Changes in Philadelphia Following Green Infrastructure Policies. *Land*, 8(2), 28.
- Hamstead, Z. A., Fisher, D., Ilieva, R. T., Wood, S. A., McPhearson, T., & **Kremer, P.** (2018). Geolocated social media as a rapid indicator of park visitation and equitable park access. *Computers, Environment and Urban Systems*, 72, 38–50.
- Kremer, P.** Larondelle, N., Zhang, Y., Pasles, E. B., & Haase, D. (2018). Within-class and neighborhood effects on the relationship between composite urban classes and surface temperature. *Sustainability*, 10(3), 645.
- Haase, D., Kabisch, S., Haase, A., Andersson, E., Banzhaf, E., Baró, F., Brenck, M., Fischer, L. K., Frantzeskaki, N., Kabisch, N., Krellenberg, K., **Kremer, P.** Kronenberg, J., Larondelle, N., Mathey, J., Pauleit, S., Ring, I., Rink, D., Schwarz, N., & Wolff, M. (2017). Greening cities – To be socially inclusive? About the alleged paradox of society and ecology in cities. *Habitat International*, 64, 41–48.
- Gittleman, M., Farmer, C. J., **Kremer, P.** & McPhearson, T. (2017). Estimating stormwater runoff for community gardens in New York City. *Urban Ecosystems*, 20(1), 129–139.
- Kremer, P.** Hamstead, Z., Haase, D., McPhearson, T., Frantzeskaki, N., Andersson, E., Kabisch, N., Larondelle, N., Rall, E. L., Voigt, A., Baró, F., Bertram, C., Gómez-Baggethun, E., Hansen, R., Kaczorowska, A., Kain, J.-H., Kronenberg, J., Langemeyer, J., Pauleit, S., Rehdanz, K., Schewenius, M., van Ham, C., Wurster, D., & Elmqvist, T. (2016). Key insights for the future of urban ecosystem services research. *Ecology and Society*, 21(2).
- Hamstead, Z. A., **Kremer, P.** Larondelle, N., McPhearson, T., & Haase, D. (2016). Classification of the heterogeneous structure of urban landscapes (STURLA) as an indicator of landscape function applied to surface temperature in New York City. *Ecological Indicators*, 70, 574–585.

- Kremer, P.** Hamstead, Z. A., & McPhearson, T. (2016). The value of urban ecosystem services in New York City: A spatially explicit multicriteria analysis of landscape scale valuation scenarios. *Environmental Science & Policy*, 62, 57–68.
- Andersson, E., Tengö, M., McPhearson, T., & **Kremer, P.** (2015). Cultural ecosystem services as a gateway for improving urban sustainability. *Ecosystem Services*, 12, 165–168.
- Andersson, E., McPhearson, T., **Kremer, P.** Gomez-Baggethun, E., Haase, D., Tuvendal, M., & Wurster, D. (2015). Scale and context dependence of ecosystem service providing units. *Ecosystem Services*, 12, 157–164.
- Larondelle, N., Hamstead, Z. A., **Kremer, P.** Haase, D., & McPhearson, T. (2014). Applying a novel urban structure classification to compare the relationships of urban structure and surface temperature in Berlin and New York City. *Applied Geography*, 53, 427–437.
- Haase, D., Larondelle, N., Andersson, E., Artmann, M., Borgström, S., Breuste, J., Gomez-Baggethun, E., Gren, Å., Hamstead, Z., Hansen, R., Kabisch, N., **Kremer, P.** Langemeyer, J., Rall, E. L., McPhearson, T., Pauleit, S., Qureshi, S., Schwarz, N., Voigt, A., Wurster, D., & Elmqvist, T. (2014). A Quantitative Review of Urban Ecosystem Service Assessments: Concepts, Models, and Implementation. *AMBIO*, 43(4), 413–433.
- McPhearson, T., Hamstead, Z. A., & **Kremer, P.** (2014). Urban Ecosystem Services for Resilience Planning and Management in New York City. *AMBIO*, 43(4), 502–515.
- Kremer, P.** Hamstead, Z. A., & McPhearson, T. (2013). A social–ecological assessment of vacant lots in New York City. *Landscape and Urban Planning*, 120, 218–233.
- McPhearson, T., **Kremer, P.** & Hamstead, Z. A. (2013). Mapping ecosystem services in New York City: Applying a social–ecological approach in urban vacant land. *Ecosystem Services*, 5, 11–26.
- Kremer, P.** & Schreuder, Y. (2012). The Feasibility of Regional Food Systems in Metropolitan Areas: An Investigation of Philadelphia's Foodshed. *Journal of Agriculture, Food Systems, and Community Development*, 171–191.
- Kremer, P.** & DeLiberty, T. L. (2011). Local food practices and growing potential: Mapping the case of Philadelphia. *Applied Geography*, 31(4), 1252–1261.

Other Scholarly Contributions

- Winkler, R. L., Clark, J. A. G., Locke, D. H., **Kremer, P.** Aronson, M. F. J., Hoover, F.-A., Joo, H. E.^{GS}, La Rosa, D., Lee, K. J., Lerman, S. B., Pearsall, H., Vargo, T. L. V., Nilon, C. H., & Lepczyk, C. A. (2025). Data and code for analyzing unequal access to social, environmental, and health amenities in United States urban parks. Forest Service Research Data Archive. USDA Forest Service.
- Godelnik, R., & **Kremer, P.** (2024). 1.5°C Lifestyles and the City. *The Nature of Cities*.
- Conway, M.^{UP}, Shakya, K., & **Kremer, P.** (2020). Mapping Social Vulnerability to Air Pollution in Philadelphia, PA. *Veritas: Villanova Research Journal*, 2, 122–130. (Undergraduate research journal.)
- Temple, A.^{UP}, & **Kremer, P.** (2020). Spatial and Temporal Analysis of Farmers Markets and Their Regional Farms in Philadelphia, PA. *Veritas: Villanova Research Journal*, 2, 116–121. (Undergraduate research journal.)
- Kremer, P.** Haase, A., & Haase, D. (2020). Placing Equity at the Center of the Urban Greening Agenda. *The Nature of Cities*.
- Kremer, P.** Haase, A., & Haase, D. (2019). The future of urban sustainability: Smart, efficient, green or just? Introduction to the special issue. *Sustainable Cities and Society*, 51, 101761.
- Kremer, P.** & Godelnik, R. (2019). Can Cities be Greta? *The Nature of Cities*.

Kremer, P. & Hamstead, Z. (2015). Transformation of Urban Vacant Lots for the Common Good: an Introduction to the Special Issue. *Cities and the Environment*, 8(2).

Kremer, P. Andersson, E., McPhearson, T., & Elmqvist, T. (2015). Advancing the frontier of urban ecosystem services research. *Ecosystem Services*, 12, 149–151.

Published Conference Proceedings

Zhang, S., Amur, A., Olson, E.^{US}, **Kremer, P.** Jiao, X., Smith, V., & Wadzuk, B. (2023). Leveraging Machine Learning to Understand Green Stormwater Infrastructure Performance Risks. 2023 IEEE Global Humanitarian Technology Conference (GHTC), pp. 302–303.

Goldsmith, S. T., Marks, N. J.^{GS}, Cravotta, C., Rossi, M.^{GS}, Silva, C., & **Kremer, P.** (2023). Exploring Temporal and Spatial Symptoms of the Freshwater Salinization Syndrome in a Rural to Urban Watershed. *Geological Society of America Abstracts with Programs*.

Goldsmith, S. T., Smith, D. F., Rodrigues, L. J., Wagner, E. J., **Kremer, P.** & Moyer, R. P. (2016). Evaluating the Relationship Among Land Use Change, Sediment and Nutrient Export, with Nearshore Coral Health in Southwestern Puerto Rico. *Geological Society of America Abstracts with Programs*.

Funded External Research Grants

Total external funding as PI or Co-PI since 2018: > \$4.4 million.

William Penn Foundation: Beyond Land Precarity — Building a Garden Database and Platform to Support Philadelphia Growers. Role: PI. Amount: \$268,979. Period: May 2025–May 2027.

William Penn Foundation: Community Garden and Land Security in Philadelphia — Baseline Research. Role: Co-PI. Amount: \$46,241. Period: December 2024–June 2025. (PI: C. Borowiak)

NSF SCC-IRG Track 1: Integrating Community Dynamics, Environmental Data, and AI to Advance Green Stormwater Infrastructure Sustainability in Urban Environments. Role: Co-PI. Amount: \$1,500,000. Period: August 2024–Present. (PI: V. B. Smith)

NSF DISES: Abating Mobility Equity Gaps Induced by Nuisance Flooding in Underserved Communities. Role: Co-PI. Amount: \$1,800,000. Period: August 2024–September 2028. (PI: A. Ermagun)

NSF CDS&E: Revolutionizing Sustainable and Fair GSI through AI. Role: Co-PI. Amount: \$499,364. Period: June 2022–June 2025. (PI: V. B. Smith)

NSF SCC-PG: Smart, Sustainable, and Equitable Green Stormwater Systems in Urban Communities (Planning Grant). Role: Co-PI. Amount: \$150,000. Period: September 2022–September 2023. (PI: V. B. Smith)

NSF Supplementary Award: Multi-Dimensional Structure of Urban Landscape and the Supply and Distribution of Ecosystem Services. Role: PI. Amount: \$6,000. Period: August 2022–February 2024.

NSF GSS: Multi-Dimensional Structure of Urban Landscape and the Supply and Distribution of Ecosystem Services. Role: PI. Amount: \$200,013. Period: September 2018–September 2023. (Co-PI: K. Shakya)

NIH: High Heat and Human Health — The Impacts of Heatwaves on Kidney Disease and Data Driven Solutions (4H Proposal). Role: Supporting. Amount: \$485,798. Period: August 2024–June 2027. (PI: D. Smith)

NSF Global Centers Track 2: Nature-based Urban Hydrology Center. Role: Supporting. Amount: \$249,977. Period: January 2024–December 2025. (PI: B. Wadzuk)

Minerva: Urban Structure and Ecological Function. Role: PI. Amount: \$4,000. Period: June 2015–August 2015.

Pending External Research Grants

NFWF: Unveiling the Prevalence and Ecological Risk of Microplastic and Metal Co-Contamination in Green Stormwater Infrastructure. Role: Co-PI. Amount: \$499,201.34. Period: September 2026–August 2029. (PI: K. Good; Co-PIs: V. B. Smith, S. T. Goldsmith). Submitted March 2026; under review.

RWJF Local Data for Equitable Communities 2026: Understanding Garden Security in Philadelphia through Data — Assessment of Access, Capacity, and Intentionality Across Diverse Community Gardens. Role: Research Consultant (Data Analysis Lead). Amount: \$50,000. Period: July 2026–March 2027. (Lead Applicant: Pennsylvania Horticultural Society; Co-Consultant: C. Borowiak.) Submitted March 2026; under review.

Funded Internal Research Grants

Villanova GRASP: Heavy Metal Transport and Bioavailability Across Grain Sizes in Highway-Derived Sediments Deposited in Green Stormwater Infrastructure. Role: PI. Amount: \$15,000. Period: June 2026–May 2027. (Co-PI: S. T. Goldsmith)

Villanova FRDG: Computer Workstation Replacement for Computational Research. Role: PI. Amount: \$5,000. Period: 2025.

Villanova FRDG: OpenGeoHub Summer School — Processing and Visualizing Large Geospatial Data using R, Python and Julia. Role: PI. Amount: \$2,978. Period: August–September 2023.

Villanova RCG: Evaluating the Prevalence and Environmental Implications of Microplastics and Metals Co-Contamination at GSI Sites. Role: Co-PI. Amount: \$35,000. Period: March 2023–May 2025. (PI: K. Good)

Villanova University: Grid-Based Aggregations in Social-Ecological Research — Theory and Applications. Role: PI. Amount: \$4,000. Period: June 2022–June 2023.

Villanova University: Spatio-temporal Modeling of the Relationship between Surface Temperature, Ambient Temperature and Urban Structure. Role: PI. Amount: \$4,000. Period: June 2022–June 2023. (Co-PI: Y. Zhang)

Villanova VITAL: Learning Centered Approach in Graduate Instruction of Spatial Techniques. Role: PI. Amount: \$6,900. Period: June 2021–June 2022.

Villanova VERITAS: Integration of Stormwater, Environmental, and Social Data to Mitigate Social Inequity Associated with Flooding. Role: Co-PI. Amount: \$10,000. Period: June 2021–May 2022. (Co-PIs: V. B. Smith, B. Wadzuk)

Villanova College of Engineering: Urban Ecosystem Services and Urban Structure — A Multifunctional, Multidisciplinary Approach. Role: Co-PI. Amount: \$25,000. Period: May 2019–May 2020. (Co-PI: V. B. Smith)

Villanova CLAS: Social–Ecological and Infrastructural Complexity Behind Urban Green–Blue Infrastructure Performance in European Cities (Travel Grant). Role: PI. Amount: \$1,300. Period: November 2018.

Villanova University: Spatial Variability of Air Pollution in Philadelphia During Summer 2017. Role: Co-PI. Amount: \$4,000. Period: June 2017–April 2018. (PI: K. Shakya)

Villanova University Conference Travel Grant Program. Role: PI. Amount: \$2,624. Period: March 2017–August 2017.

Villanova University Library SOAR (Scholarship Open Access Reserve): Multiple awards for open access publication fees. Role: PI. Periodic from 2018–present.

Invited Talks and Keynotes

Kremer, P. & Borowiak, C. "Roots at Risk: How Secure are Philadelphia Urban Gardens?" William Penn Foundation Webinar Series. October 21, 2025.

Kremer, P. & Borowiak, C. "Roots at Risk." William Penn Foundation Webinar. October 7, 2025.

Kremer, P. "Pathways to Sustainable Urban Planning: Relating Urban Structure to Environmental and Ecological Indicators." Invited seminar, Department of Town and Urban Planning, Technion, Haifa, Israel. July 9, 2024.

Kremer, P. "Pathways to Sustainable Urban Planning: Environmental Justice in Urban Social-Ecological Systems." Invited seminar, Geographic Institute, Humboldt University, Berlin, Germany. June 25, 2024.

Kremer, P. "Pathways to Urban Sustainability." Department of Geography Seminar, University of Delaware, Newark, DE. November 4, 2022.

Conference Presentations (Since Tenure, August 2022)

Shibeshi, T.^{GS}, Smith, V. B., **Kremer, P.** & Roy, P.^{GP} (2026). Spatiotemporal Modeling of Nuisance Flood Risk: A Critical Review of Urban Scale Approaches. EWRI 2026, World Environmental & Water Resources Congress, Mobile, AL, April 26, 2026.

Shibeshi, T.^{GS}, Roy, P.^{GP}, Smith, V. B., & **Kremer, P.** (2026). Spatiotemporal Modeling of Nuisance Flood Risk: A Critical Review of Urban Scale Approaches. Global Water Alliance, Philadelphia, PA, March 26, 2026.

Myers, E.^{GP}, **Kremer, P.** Zhang, Y., Shakya, K., & Henderson, B. (2026). An Exploration of the Intersection of PM2.5 Air Pollution, Social Vulnerability, and Chronic Disease Across 500 US Cities. AAG Annual Meeting, San Francisco, CA, March 17, 2026.

Kremer, P. Borowiak, C., & Scolio, M.^{GP} (2026). Cultivating Data: The Philadelphia Garden Data Collaborative's Approach to Urban Garden Preservation. AAG Annual Meeting, San Francisco, CA, March 20, 2026 (poster).

Scolio, M.^{GP}, **Kremer, P.** & Borowiak, C. (2026). Measuring Community Garden Security: A Study of Philadelphia's Community Gardens. AAG Annual Meeting, San Francisco, CA, March 20, 2026 (poster).

Roy, P.^{GP}, **Kremer, P.** Shibeshi, T.^{GS}, & Smith, V. B. (2025). Identifying Methodological Opportunities in Computational Modeling of Neighborhood-Scale Shallow Inundations. Middle States Division of AAG, Villanova, PA, November 15, 2025 (poster).

Myers, E.^{GP}, **Kremer, P.** Shakya, K., Henderson, B., & Zhang, Y. (2025). The Intersection of PM2.5 Air Pollution, Social Vulnerability, and Chronic Disease Across 500 U.S. Cities. Middle States Division of AAG, Villanova, PA, November 15, 2025 (poster).

Roy, P.^{GP}, **Kremer, P.** Shibeshi, T.^{GS}, & Smith, V. B. (2025). Identifying Methodological Opportunities in Computational Modeling of Neighborhood-Scale Shallow Inundations. Graduate Research Symposium, Villanova University, November 14, 2025 (poster).

Myers, E.^{GP}, **Kremer, P.** Shakya, K., Henderson, B., & Zhang, Y. (2025). The Intersection of PM2.5 Air Pollution, Social Vulnerability, and Chronic Disease Across 500 U.S. Cities. Graduate Research Symposium, Villanova University, November 14, 2025 (poster).

Robert, E.^{GS}, **Kremer, P.** Wang, Y., Wilson, J. M., & Good, K. (2025). Assessing Effects of Upstream Iodine Discharges on Downstream Drinking Water Facilities at the Watershed Level. PA-AWWA Annual Conference, Pocono Manor, PA, May 14, 2025 (poster).

Rahman, M.^{GS}, Smith, V. B., Wadzuk, B. M., Jiao, X., **Kremer, P.** & Amur, A. (2025). Utilizing Extensive Monitoring Data to Evaluate Green Stormwater Infrastructure Performance. EWRI Congress, Anchorage, AK, May 2025.

- Amur, A., Scolio, M.^{GP}, Wang, R., **Kremer, P.** Jiao, X., Smith, V. B., & Wadzuk, B. M. (2025). Utilizing Machine Learning to Explore Trends in Green Stormwater Infrastructure (GSI) Inspection Data for Enhanced Sustainable Operations. Philadelphia AWRA Meeting, March 2025.
- Hassebrock, J.^{GS}, **Kremer, P.** Seng, K., & Goldsmith, S. T. (2024). Impact of Land Management Practices on Long-term Nitrate Export in Exurban and Suburban Watersheds. AGU 2024, Washington, DC, December 12, 2024.
- Goldsmith, S. T., Cassell, M., **Kremer, P.** Cravotta, C., Seng, K., & Marks, N.^{GS} (2024). Impact of Land Development and Roadway Deicing Practices on Solute Export in Exurban and Suburban Watersheds. AGU 2024, Washington, DC, December 11, 2024.
- Good, K., Robert, E.^{GS}, **Kremer, P.** Wang, Y., & Wilson, J. M. (2024). Assessing Watershed-Level Potential Risk of Surface Water Sources to Upstream Iodine Discharges Using Flow Path Tracing. AGU 2024, Washington, DC, December 9, 2024.
- Smith, V. B., Good, K., Cook, L., Moretti, M., **Kremer, P.** Wadzuk, B. M., & Traver, R. G. (2024). Intentional Multifunctionality of Urban Green Infrastructure Across Stakeholders. AGU 2024, Washington, DC, December 9, 2024 (poster).
- Jenkins, B.^{UP}, **Kremer, P.** & Zhang, Y. (2024). Local Scale Spatiotemporal Modeling of Air Temperature Using Remotely Sensed Surface Temperature in a Peri-Urban Environment. AGU 2024, Washington, DC, December 9, 2024 (poster).
- Kremer, P.** Winkler, R. L., Clark, J. A., & Locke, D. (2024). Unequal Access to Social, Environmental, and Health Amenities in US Urban Parks. AGU 2024, Washington, DC, December 9, 2024 (poster).
- Kremer, P.** Smith, V. B., Rahman, M.^{GS}, Jiao, X., & Wadzuk, B. M. (2024). Utilizing Extensive Monitoring Data to Evaluate Green Stormwater Infrastructure Performance. AGU 2024, Washington, DC, December 9, 2024 (poster).
- Rahman, M.^{GS}, Wang, R., Amur, A., Scolio, M.^{GP}, Smith, V. B., **Kremer, P.** Jiao, X., & Wadzuk, B. M. (2024). Data-Driven Approach to Assess Green Stormwater Infrastructure (GSI) Performance. ASME 2024 International Mechanical Engineering Congress and Exposition, Portland, OR, November 17, 2024.
- Scolio, M.^{GP}, **Kremer, P.** Amur, A., Smith, V. B., & Wadzuk, B. M. (2024). The Need for Holistic and Intersectional Flood Risk Modeling: Leveraging Human-Driven Data Sources. Villanova 2024 International Sustainability Conference, October 2024.
- Amur, A., Scolio, M.^{GP}, Wang, R., **Kremer, P.** Jiao, X., Smith, V. B., & Wadzuk, B. M. (2024). Understanding Trends Within GSI Inspection Data Using Machine Learning to Enhance Sustainable Functionality. Villanova 2024 International Sustainability Conference, October 2024.
- Good, K., Robert, E.^{GS}, **Kremer, P.** Wang, Y., & Wilson, J. M. (2024). Assessing Potential Risk of Surface Waters to Iodine Discharges at the Watershed Level. WaterSciCon, AGU, St. Paul, MN, June 27, 2024.
- Wadzuk, B. M., Cook, L. M., Good, K., Moretti, M., **Kremer, P.** Traver, R. G., & Smith, V. B. (2024). Intentional Multifunctionality of Urban Green Infrastructure. World Biodiversity Forum, Davos, Switzerland, June 16, 2024.
- Cook, L. M., Good, K., Moretti, M., **Kremer, P.** Wadzuk, B. M., Traver, R. G., & Smith, V. B. (2024). Designing Green Infrastructure for Multifunctionality. 16th International Conference on Urban Drainage (ICUD), Delft University of Technology, Netherlands, June 9, 2024.

- Berrios, L.^{GP}, **Kremer, P.** Goldsmith, S. T., & Egan, C. (2024). Spatial Distribution of Arbuscular Mycorrhizal Fungal Diversity and Heavy Metal Soil Concentrations as a Function of Urban Structure in Philadelphia, PA. Mid-Atlantic Chapter Ecological Society of America Annual Conference, Kutztown, PA, April 2024 (poster).
- Amur, A., Wang, R., Scolio, M.^{UP}, Smith, V. B., **Kremer, P.** Wadzuk, B. M., & Jiao, X. (2024). Leveraging Machine Learning to Understand Green Stormwater Infrastructure Performance Risks. EWRI Operation and Maintenance of Stormwater Control Systems, Austin, TX, April 2024.
- Scolio, M.^{UP}, **Kremer, P.** Shakya, K., & Zhang, Y. (2023). Spatial-Temporal Modeling of the Relationship Between Surface Temperature and Air Temperature in Metropolitan Urban Systems. AAG Middle States, Philadelphia, PA, October 2023.
- Kremer, P.** Smith, V. B., Wadzuk, B. M., Amur, A., Homet, K.^{GP}, Olson, E.^{US}, Devlin, E.^{US}, & Mehedi, A.^{GS} (2023). Challenges of Defining Urban Flood Impacts When Considering Equity. AAG Middle States, Philadelphia, PA, October 2023 (poster).
- Berrios, L.^{GP}, **Kremer, P.** Goldsmith, S. T., & Egan, C. (2023). Spatial Distribution of Arbuscular Mycorrhizal Fungal Diversity and Heavy Metal Soil Concentrations as a Function of Urban Structure in Philadelphia, PA. Graduate Research Symposium, Villanova University, October 2023 (poster).
- Berrios, L.^{GP}, **Kremer, P.** Goldsmith, S. T., & Egan, C. (2023). Spatial Distribution of Arbuscular Mycorrhizal Fungal Diversity and Heavy Metal Soil Concentrations as a Function of Urban Structure in Philadelphia, PA. Middle States Division of AAG Annual Conference, Philadelphia, PA, October 2023 (poster).
- Brown, J. A., Winkler, R. L., Locke, D. H., **Kremer, P.** Aronson, M. F., Hoover, F.-A., Pearsall, H., Lepczyk, C., Nilon, C., & Vargo, T. (2023). Beyond Accessibility: Inequity Among Socio-demographic Groups in Park Access, Amenities, and Ecosystem Service Benefits. Ecological Society of America, Portland, OR, August 6, 2023.
- Cook, L. M., Good, K., Moretti, M., **Kremer, P.** Wadzuk, B. M., Traver, R. G., & Smith, V. B. (2023). Towards the Intentional, Multifunctional Design of Green Infrastructure. EGU General Assembly 2023, Vienna, Austria, April 24, 2023 (poster).
- Shakya, K., **Kremer, P.** Cummings, L.^{GP}, Bohra, C.^{UP}, & Gaughan, M.^{UP} (2023). Mobile Monitoring of Air Pollution Along Urban-Suburban Corridor in the Philadelphia Metro Region. AAG Annual Meeting, Denver, CO, March 26, 2023.
- Kremer, P.** Scolio, M.^{UP}, Shakya, K., & Zhang, Y. (2023). Spatial-Temporal Modeling of the Relationship Between Surface Temperature and Air Temperature in Metropolitan Urban Systems. AAG Annual Meeting, Denver, CO, March 24, 2023.
- Kremer, P. & Shakya, K. (2023). Pathways to Urban Sustainability: Challenges and Opportunities. AAG Annual Meeting, Denver, CO, March 24, 2023 (organized interactive poster session).
- Kremer, P.** Smith, V. B., Wadzuk, B. M., Amur, A., Homet, K.^{GP}, Olson, E.^{US}, Devlin, E.^{US}, & Mehedi, A.^{GS} (2023). Challenges of Defining Urban Flood Impacts When Considering Equity. AAG Annual Meeting, Denver, CO, March 2023 (poster).
- Gaughan, M.^{UP}, **Kremer, P.** & Shakya, K. (2023). Air Pollution, Land Use and Land Cover Along a Major Urban Artery. AAG Annual Meeting, Denver, CO, March 24, 2023 (poster).
- Smith, V. B., Wadzuk, B. M., **Kremer, P.** Homet, K.^{GP}, Mehedi, A.^{GS}, Devlin, E.^{US}, & Moore, L. (2022). Challenges in Accounting for Equity in Urban Stormwater Management. AGU 2022, Chicago, IL, December 2022 (poster).
- Mehedi, A.^{GS}, Smith, V. B., & **Kremer, P.** (2022). Comparing Urban Flood Dynamics Using SAR Imagery and Google Earth Engine: Case Studies in Dhaka and Houston. AGU 2022, Chicago, IL, December 2022.

Amur, A., Homet, K.^{GP}, Mehedi, A.^{GS}, Devlin, E.^{US}, Moore, L., **Kremer, P.** Smith, V. B., & Wadzuk, B. M. (2022). Accounting for Equity in Urban Stormwater Management. Pennsylvania Stormwater Symposium, Villanova University, October 2022 (poster).

TEACHING

Teaching Awards

Outstanding Faculty Mentor Teaching Award, Villanova University, May 2023.

Courses Taught at Villanova (†New course developed)

Undergraduate Courses

- GEV 1002 Geography of a Globalizing World (3 cr.; Spring 2021) (redeveloped for remote learning)
- GEV 3000† Topics: Ecosystem Service Learning (3 cr.; Spring 2020, Fall 2020)
- GEV 3521† GIS for Urban Sustainability (3 cr.; Spring 2018, Spring 2019, Fall 2020, Fall 2022, Spring 2025) [previously GEV 4510 in Spring 2016]
- GEV 4301 Topics: Drones (1 cr.; Fall 2024)
- GEV 4301† Topics: Google Earth Engine (1 cr.; Fall 2024, Fall 2025)
- GEV 4700† Geographic Information Systems (4 cr.; Fall 2015, Spring 2016, Fall 2016, Fall 2017, Fall 2018, Fall 2021, Spring 2023)
- GEV 6005 Senior Research Seminar (1 cr.; Fall 2022, Fall 2024)
- VIA 1131† Intro Building What Matters (1.5 cr.; Fall 2018)
- VIA 3050† Building What Matters (3 cr.; Fall 2021)

Graduate Environmental Science Courses

- GEV 7000 Research Methods in Environmental Science (2 cr.; Fall 2022)
- GEV 7010 Environmental Colloquium (1 cr.; Fall 2022)
- GEV 7040† Intro to GIS (4 cr.; Fall 2015 (as BIO 9104), Fall 2016, Fall 2017) (graduate section of GEV 4700)
- GEV 7041† GIS for Environmental Systems (4 cr.; Spring 2017, Spring 2018, Spring 2019, Spring 2020, Spring 2021, Spring 2022, Spring 2023, Spring 2024, Spring 2025, Spring 2026)
- GEV 8300† Topics: Google Earth Engine (1 cr.; Fall 2024, Fall 2025) (graduate section of GEV 4301)

Independent Study sections (GEV 6200) listed individually under Student Mentorship.

Guest Lectures and Workshops

Regular guest lecturer in GEV 7000: Research Methods in the Environmental Sciences (2016, 2017, 2018, 2020, 2021, 2022, 2023, 2024, 2026) on "Spatially Explicit Approaches to the Study of Urban Social-Ecological Systems, Ecosystem Services and Urban Sustainability."

Guest Lecturer, CEE 7211: Water Resources Planning & Management (2026) on remote sensing in water resource management.

Guest Lecturer, RES 4150: Real Estate Development (2018, 2020) on GIS in real estate and development.

Guest Lecturer, GEV 8300: Public Health (2020) on GIS in public health.

Guest Lecturer, GEV 3001: Intro to Sustainability Study (2016, 2017) on Urban Sustainability.

Guest Lecturer, GEV 3002: Ecosystem Services (2017) on Ecosystem Services Valuation.

Guest Lecturer, University Race and Justice Course (October 2021) on environmental racism and environmental justice.

Student Research Mentorship

Doctoral Dissertation Committee Member

Shibeshi, Tefera. "Spatio-temporal Modeling of Urban Nuisance Flooding." Villanova University, Department of Civil and Environmental Engineering. August 2025–present.

Rahman, Musfiqur. "Advancing Green Stormwater Infrastructure Performance Assessment through Data-Driven Predictive Modeling." Villanova University, Department of Civil and Environmental Engineering. August 2023–present.

Al Mehedi, Abdullah. "Leveraging the Data Revolution to Advance Surface Water Hydrology in Built Environments." Villanova University, Department of Civil and Environmental Engineering. September 2022–May 2024.

von Döhren, Peer. "Ecosystem Disservices." Humboldt University, Berlin. May 2020–September 2021.

Master's Thesis Committee Chair

Wildonger, Charles. "Transport and Bioavailability of Cd, Cr, Cu, Ni, Pb, and Zn Across Grain Sizes from Highway Sediments Deposited in Receiving GSI Installations." August 2025–present.

Sanders, Mac. "An Observational Analysis of Human Activity, Physical Conditions, and Social Context Around Green Stormwater Infrastructure Sites in Kensington, Philadelphia." August 2025–present.

Roy, Prottoy. "Spatiotemporal Modeling of Nuisance Flood Risk: A Critical Review of Urban Scale Approaches." August 2025–present.

Myers, Emily. "Relating Air Pollution, Social Vulnerability and Health Outcomes in 500 US Cities." August 2024–present.

Berrios-Hyden, Luis. "Spatial Distribution of AMF Diversity and Heavy Metal Soil Concentrations as a Function of Urban Structure in Philadelphia, PA." August 2022–July 2024.

Cummings, Lucas. "Air Pollution and Urban Structure: A Case Study in Philadelphia, PA." August 2019–September 2021.

Homet, Kate. "Measuring the Impacts of Environmental, Social, and Maintenance Variables on Green Stormwater Infrastructure in Philadelphia." August 2020–May 2022.

Shade, Charlotte. "The Use of Green Infrastructure and its Effect on Climate Resilience in Philadelphia." August 2017–May 2019.

Master's Thesis Committee Member

Salantiri, Nick. "Impact of Land Use/Land Cover Practices and Configuration on Freshwater Salinization Syndrome on Solute and Nutrient Export in Two Suburban Headwater Streams." August 2025–present.

Hassebrock, Jenna. "Impact of Long-Term Land Cover Change on Long-Term Nitrate and Total Suspended Solids Exports in Southeastern Pennsylvania Watersheds." September 2023–May 2025.

Robert, Emma. "Assessing Effects of Upstream Iodine Discharges on Downstream Drinking Water Facilities at the Watershed Level." January 2024–May 2025.

Rossi, Marissa. "Impact of Land Cover and Roadway Deicing Agent Application on the Long-Term Stream Water." August 2020–May 2022.

Marks, Nicole. "Analysis of the Impacts of Point and Non-Point Sources of Contamination on the Biogeochemistry of the East Branch of the Brandywine Creek from a Rural to Urban Gradient." August 2018–May 2020.

McMahon, Julia. "Observed and Projected Changes in United States Drought Exposure 1940–2100." August 2017–May 2020.

Jezycki, Kristen. "Assessing Heavy Metal Pollution in Estuarine Systems Along the Eastern US in Relation to Land Use Changes." August 2017–May 2019.

Jarvis, Teresa. "India as a Model for Environmental Security; The Lynchpin of Southeast Asia." October 2016–November 2019.

Rodriguez, Elise. "Land Use Impacts on Mineral Sediment Delivery and Accretion Rates in Tidal Wetlands." October 2016–May 2018.

Davis, Alec. "Climate Change Effects on Marshland in the Delaware Watershed." September 2016–May 2018.

Wolf, Saskia. "Food Production Potential of Residential Backyards in New York City." April 2015–March 2016.

Graduate Portfolio and Supervised Graduate Research

Scheller, Sarah. "Gentrification Pressures on Community Gardens in Philadelphia, PA." Spring 2026.

Douyon, Kenny. "Land Security Assessment of Community Gardens in Philadelphia." September 2024–May 2025.

Trumbull, Miles. "Site Risk Assessment for Soil Metals." September 2022–May 2023.

Reist, Radley. "Comparative Analysis of Urban Structure and Surface Temperature." May 2019–May 2021.

Kowalski, George. "Supermarket Use and Sociodemographic Distribution." August 2020–May 2021.

Senior Thesis and Undergraduate Honors Thesis

Koisewroski, Anna. "Legacy of Redlining: A GIS-Based Study of Environmental Hazards and Social Vulnerability in Historically Redlined Neighborhoods." August 2025–May 2026.

Scolio, Madeline. "The Relationship Between Surface and Air Temperature." August 2022–May 2023.

Henderson, Alec. "Ensemble Modeling for American Chestnut Distribution: Locating Potential Restoration Sites in Pennsylvania." Undergraduate Honors Thesis. [start–end dates]. Co-advised with Jennifer Santoro.

Bromberg, Samantha. "Ecosystem Services in Philadelphia Community Gardens." Undergraduate Honors Thesis. September 2018–May 2019.

Greenwald, Julie. "Philadelphia's Local Food System: An Environmental Justice Perspective." Senior Thesis. August 2018–May 2019.

Henderson, Kate. "Niche Modeling of Tody Birds in the Greater Antilles." Undergraduate Honors Thesis. August 2017–May 2018.

Directed Independent Study (Undergraduate)

Manganello, Gabi. "Identifying Flooding Impacts of Sea Level Rise Projections on Long Beach Island, NJ." Spring 2025.

Corrigan, Mary. "The Weight of Nature: Analyzing the Impact of Green Space on Obesity Prevalence." Spring 2025.

Donodeo, Michael. "Spatial Analysis of Expected Tourist Demand for SEPTA Stations During the 2026 World Cup." Spring 2025.

Fryberger, Rylie. "Root Causes: Understanding Community Garden Closures in Philadelphia." Spring 2025; supervised summer 2024 field research.

Johnson, Anna. "Mapping Food Swamps: Analyzing the Impact of Unhealthy Food Retail on Obesity in Indianapolis." Fall 2024.

Jenkins, Brent. "Modeling the Relationship Between Surface and Air Temperature with a Stationary Sensor Network." Fall 2024 (Senior Project).

Jenkins, Brent. "Modeling the Relationship Between Surface and Air Temperature with a Stationary Sensor Network." Summer 2024 (supervised summer research).

Lemmons, Sophia. "Philadelphia Community Gardens Census." Summer 2024.

Takahashi, Halina. "Urban Structure and Ecosystem Services." Summer 2022.

Bohra, Charlotte. "Analyzing Air Quality in Philadelphia, PA from an Environmental Justice Lens." Fall 2022.

Smith, Kaitlyn. "The Relationship Between Crime Rates and Temperature in Philadelphia, PA." Fall 2022.

Mullen, Marie. "Wind Farm Site Suitability Study Using Geophysical Factors in Pennsylvania." Fall 2022.

Lomerson, Cameron. "Remote Sensing of Air Pollution in the Philadelphia Metro Area Before and During the COVID-19 Pandemic." Spring 2022–Spring 2023.

Gaughan, Megan. "Air Pollution Across a Gradient of a Main Urban Artery." Spring 2022–Spring 2023.

Pistella, Olivia. "Park Quality and Environmental Justice." Spring 2022–Spring 2023.

De Jesus, Beatriz. "Sustainability Perception Assessment." August 2020–May 2021.

Ahn, Kirsten. "Local Flooding, Heat and Health Outcomes in Philadelphia, PA." January–May 2020.

Temple, Amira. "Spatial Distribution of the Local Food System in Philadelphia." September 2019–May 2020.

Conway, Meghan. "Urban Structure and Ecosystem Services." October 2018–May 2020.

Mitz, Erik. "Urban Structure and Surface Temperature in Philadelphia." January 2016–May 2018.

Seyfried, Ashley. "The Relationship Between Urban Form and Greenspace Distribution: A Nationwide Spatial-Temporal Study." August 2016–May 2017.

Dangler, Joe. "Morphological Impacts of Post-Tropical Cyclone Sandy on Long Beach, NY." August 2016–May 2017.

Henderson, Kate. "Fine Scale Analysis of Philadelphia Air Pollution." June 2016–February 2017.

McMahon, Meghan. "Fine Scale Analysis of Philadelphia Air Pollution." June–August 2016.

Bromberg, Samantha. "Fine Scale Analysis of Philadelphia Air Pollution." June–August 2016.

Henninger, Alexandra. "Food Production in Urban Farms." Fall 2016.

Walsh, Rachel. "Spatial Patterns in Organic Farming and Farm Tenure Across the USA." Spring 2016.

Lewis, Gavin. "A Verification and Analysis of Community Gardens in Philadelphia." Spring 2016.

Kvochak, Natalie. "Nova Nutrition." Spring 2016.

SERVICE

Editorial Roles

Associate Editor, Sustainable Cities and Society, July 2025–Present. Responsible for editorial process of 4–5 papers per week.

Editorial Board Member, Sustainable Cities and Society, 2023–2025.

Special Issues Editor, "Sustaining Cities Under Environmental Extremes," Sustainable Cities and Society, August 2024–August 2026. Reviewed 350+ submissions to select 35 papers for the special issue.

Editorial Review Board Member, Frontiers in Environmental Science: Land Use Dynamics, August 2018–Present.

Special Issues Co-Editor, "The Future of Urban Sustainability: Smart, Efficient, Green or Just," Sustainable Cities and Society, August 2016–March 2019.

Special Issues Editor, "Urban Vacant Land and Community Access," Cities and the Environment, December 2014–October 2016.

Special Issue Co-Editor, Urban Ecosystem Services, Ecosystem Services, 2014–2015.

Peer Reviewer for Academic Journals

Approximate review counts in parentheses where multiple manuscripts have been reviewed.

- Cities (3)
- Ecological Indicators (1)
- Ecosystem Services (4)
- Environment and Planning B: Urban Analytics and City Science (1)
- Environmental Science and Policy (1)
- Frontiers in Environmental Science (Land Use Dynamics) (11)
- Journal of Environmental Planning and Management (1)
- Landscape and Urban Planning (9)
- Sustainable Cities and Society (15)
- Urban Affairs Review (1)
- Urban Transformations (1)
- Eco Summit Conference (200+ abstracts reviewed, 2016)
- Book proposals for Springer (Greening Cities through Gardening, 2019; A Practical Handbook of Sustainability and Resilience, 2016)

Reviewer for Scientific Proposals

- National Science Foundation — Human-Environment and Geographical Sciences (HEGS) Ad Hoc Reviewer (February–March 2026)
- National Science Foundation — Human-Environment and Geographical Sciences (HEGS) Senior Review Panel (November 2024)
- National Science Foundation — Division of Environmental Biology (DEB), RUI program (February 2024)

- Israel Science Foundation (March 2016)

Conference Session and Workshop Organization

Organized session: "Community Green Spaces as Vital Infrastructure: Data, Equity, and Self-Determination" poster session at AAG Annual Meeting, San Francisco, CA, March 2026.

Organized session: "Understanding the Multi-Dimensionality of Nature Based Solutions in the Built Environment" poster session at AGU Annual Meeting, Washington, DC, November 2024.

Workshop Organizer, "Remote Sensing with Google Earth Engine," Geography Awareness Week, November 2024.

Organized session: "Pathways to Urban Sustainability: Challenges and Opportunities," interactive poster session at AAG Annual Meeting, Denver, CO, March 2023.

Institutional Service — Departmental

Member, Faculty Evaluation Committees, August 2025–Present.

Member, GEV Graduate Program Committee, October 2018–Present.

Faculty Adviser, GlobePlotters Student Organization (YouthMappers), December 2018–Present.

Chair, GEV Committee on Diversity and Inclusion, December 2016–October 2023.

Chair, GEV Search Committee (Visiting Assistant Professor of Environmental Studies), February–March 2024.

Member, GEV Search Committee (Visiting Assistant Professor of Environmental Science or GIS), December 2018–May 2019.

Member, GEV Environmental Studies Committee, October 2018–2021.

Member, GEV Geography Program Review Committee, August 2016–May 2017.

Institutional Service — College

Member, CLAS Diversity, Equity and Inclusion Committee, January 2020–Present.

Reviewer, Presidential UNITAS Graduate Fellowship Applications, March 2026.

Institutional Service — University

Member, Strategic Initiative for Climate, Justice, and Sustainability: Research Committee, August 2024–Present.

Ad Hoc: Faculty Senate Policy Review, Research Data Management Policy, February 2026.

Participant, Faculty Leadership Academy, Villanova Center for Faculty Leadership and Success, February–May 2026.

Member, Fulbright Campus Committee, 2020, 2021, 2022, 2023, 2024.

Reviewer (Chair, 2020), Villanova Undergraduate Research Fellowship (VURF) Applications, 2020, 2021, 2022, 2023, 2025.

Panelist, "Using AI for Research: A Multi-Disciplinary Faculty Panel," Villanova University, March 2024.

Panelist, Graduate Student Mentorship Panel, Villanova University, November 2024.

Speaker, Villanova VITAL faculty mentors dinner, "Mentoring Undergraduate and Graduate Students at Villanova", November 2023.

Presenter/Organizer, Teaching and Learning Strategies (TLS) Conference Roundtable, Villanova University, May 2023.

Environmental Justice Module Developer, Villanova Race and Justice Course (60-minute video on environmental racism and environmental justice), 2021–2022.

Member, PESC Faculty Leadership Committee, September 2017–September 2019.

Member, Built Environment Cross-Campus Committee, February 2017–May 2019.

Public and Community Service

Founding Member and Technical Lead, Philadelphia Garden Data Collaborative (PGDC), April 2015–Present.

Co-leads the development, maintenance, and ongoing expansion of an authoritative GIS dataset of active community gardens in Philadelphia, in long-term collaboration with the Public Interest Law Center of Philadelphia, Pennsylvania Horticultural Society, and Neighborhood Gardens Trust. Directs spatial analysis, database curation, and platform development; secured two William Penn Foundation grants totaling over \$315,000 (2024–2027) to build the next-generation garden database and online platform supporting Philadelphia growers ("Beyond Land Precarity" and "Community Garden and Land Security in Philadelphia: Baseline Research"). Provides spatial analysis and mapping in support of policy and advocacy, including Philadelphia City Council hearings on urban agriculture. Maintains weekly monitoring of garden parcels listed in Philadelphia sheriff sales to identify and provide support to gardens at risk of displacement.

Co-Organizer, Vacant Acre Symposium, NYC, NY, April 2014. Organized and hosted a meeting of urban vacant land transformation practitioners with over 300 participants from around the world.

Committee Member, Garden for the Community, Newark, DE, 2009–2011. Volunteer at the university initiative producing fresh food for distribution to Delaware Food Bank recipients.

PROFESSIONAL MEMBERSHIPS

American Association of Geographers (April 2007–Present)

Association for Environmental Studies and Sciences (September 2013–Present)

American Geophysical Union (August 2018–Present)