

VICTORIA LANG

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RESEARCH INTEREST

Air pollution meteorology, chemical transport modeling, vehicle emission model development, air pollution mitigation co-benefits

EDUCATION

Ph.D.	Earth, Environmental, and Planetary Science, Northwestern University	Sept.2022-Present
MS	Atmospheric Science, University of Wisconsin-Milwaukee	2022
BS	Meteorology, Northern Illinois University	2020
BS	Business Administration, Illinois State University	2009

HONORS AND AWARDS

Presidential Fellowship (Northwestern University)	2025
Marion Sloss Award for Outstanding Graduate Teaching Assistant (Northwestern University)	2024
First Place Student New Researcher Poster Competition (ISES Annual Meeting)	2023
Data Science Fellowship (Northwestern University)	2022
Dhirenda Sikdar Scholarship (University of Wisconsin-Milwaukee)	2021
Chancellor's Graduate Award (University of Wisconsin-Milwaukee)	2020 & 2021
College of Liberal Arts and Sciences Dean's Award (Northern Illinois University)	2020
Lake County Women's Coalition Scholarship (College of Lake County)	2017

MANUSCRIPTS IN PREPARATION

[2] K. Shlipak, S.F. Camilleri, **V.A. Lang**, A. Montgomery, J.L. Schnell & D.E. Horton (*In review*). Despite limited usage residential wood combustion PM_{2.5} has profound impact on U.S. health, *Science Advances*

[1] **V.A. Lang**, S.F. Camilleri, A. Montgomery, J.L. Schnell, Z. Adelman, M. Janssen, E.A. Grubert, S.C. Anenberg & D.E. Horton (*In review*). Watts-to-Wheel Comparison of Light- v. Heavy-Duty Vehicle Electrification in the U.S. Midwest on air quality, public health, and equity, *Environmental Research: Health*.

PEER-REVIEWED PUBLICATIONS

[6] **Lang, V.A.**, Camilleri, S., van der Lee, S., Rowangould, G., Atonczak, B., Thompson, T., Harris, M., Harkins, C., Tong, D., Janssen, M., Adelman, Z., Horton, D (2025). Intercomparison of modeled urban-scale vehicle NO_x and PM_{2.5} emissions – implications for equity assessments. *Environmental Science and Technology*. <https://doi.org/10.1021/acs.est.4c09777>

[5] **Lang, V.A.**, Camilleri, S., Deylami, N., Harris, M., Koehler, L., Urbaszewski, B., Horton, D. (2025). Assessing the air quality, public health, and equity implications of the Advanced Clean Trucks policy for Illinois, *Special Issue of Frontiers of Earth Science Commemorating the Contributions of Prof. Donald James Wuebbles*. <https://doi.org/10.1007/s11707-024-1144-8>

- [4] Kahl, J. D, Zaprzalka, K. J., Brezovar, D. S., **Lang, V.A.**, Selbig, B.R., Harris, A.R. (2024). Investigating the potential of using mixdown altitudes to forecast peak wind gusts, *Weather and Forecasting*. <https://doi.org/10.1175/WAF-D-23-0092.1>
- [3] **Lang, V. A.**, & Kahl, J. D. (2023). Minimal PM_{2.5} Impact Observed in Communities Near Large, Recurring, Non-Independence Day Festivals with Fireworks Displays. *Air*, 1(1), 1-13. DOI: <https://doi.org/10.3390/air1010001>
- [2] **Lang, V. A.**, Turner, T. J., Selbig, B. R., Harris, A. R., & Kahl, J. D. W. (2022). Predicting Peak Wind Gusts during Specific Weather Types with the Meteorologically Stratified Gust Factor Model, *Weather and Forecasting*, 37(8), 1435-1446. DOI: <https://doi.org/10.1175/WAF-D-21-0201.1>
- [1] Fritzen, R., **Lang, V.**, & Gensini, V. A. (2021). Trends and Variability of North American Cool-Season Extratropical Cyclones: 1979–2019, *Journal of Applied Meteorology and Climatology*, 60(9), 1319-1331. DOI: <https://doi.org/10.1175/JAMC-D-20-0276.1>

CONFERENCE PRESENTATIONS

- [9] **Lang, V.A.**, Camilleri, S., van der Lee, S., Rowangould, G., Atonczak, B., Thompson, T., Harris, M., Harkins, C., Tong, D., Janssen, M., Adelman, Z., Horton, D. (2025, January 5-9) *Intercomparison of modeled urban-scale vehicle NO_x and PM_{2.5} emissions – implications for equity assessments* [Poster Presentation]. Transportation Research Board Annual Meeting, Washington, DC, United States.
- [8] Chirino-Segura A., **Lang V.A.**, Horton, D.E. (2025, January 12-16) Investigating Lake Breeze Arrival Delays in the Weather Research and Forecasting-Community Multiscale Air Quality Model: Implications for Ozone Regulation and Public Health. American Astronomical Society Meeting, Anchorage, AK, United States.
- [7] **Lang, V.A.**, Camilleri, S., Janssen, M., Horton, D. (2024, December 9-13). *Leveraging machine learning to improve the characterization of heavy-duty vehicle idling activity for emission modeling applications* [Poster Presentation]. American Geophysical Union Fall Meeting, Washington, DC, United States.
- [6] **Lang, V.A.**, Camilleri, S., Deylami, N., Harris, M., Koehler, L., Urbaszewski, B., Horton, D. (2024, December 4-5). *Assessing the air quality, public health, and equity implications of the Advanced Clean Trucks policy for Illinois* [Oral Presentation]. Air & Waste Management Environmental Justice Policy, Practice, Progress Conference, Rosemont, IL United States
- [5] **Lang, V.A.**, Camilleri, S., Harkins, C., Rowangould, G., Antonczak, B., Ma, S., Tong, D., van de Lee, S., Horton, D. (2023, December 11-15). *Modeled Vehicle NO_x Emission Intercomparison: FIVE v. NEMO v. NU CCRG v. UVM*. [Poster Presentation]. American Geophysical Union Fall Meeting, San Francisco, CA, United States.
- [4] **Lang, V.A.**, Camilleri, S., Montgomery, A., Adelman, Z., Janssen, M., Harris, M., Horton, D. (2023, August 27-31). *Characterizing air quality and health impacts of heavy-duty vehicle idling in warehouse settings using neighborhood-scale WRF-CMAQ simulations* [Poster Presentation]. International Society of Exposure Sciences Annual Meeting, Chicago, IL, United States.
- [3] **Lang, V.A.**, Reid, J., Peng, X., Chen, G., Ziemba, L., Shook, M., Ferrare, R., Holz, R., Eck, T. (2022, December 5-9). *Navy Aerosol Analysis Prediction System Reanalysis Error Propagation for Anthropogenic Air*

Pollution in Boundary Layer Environments Using Global NASA Airborne Campaign Observations [Poster Presentation]. American Geophysical Union Fall Meeting, Chicago, IL, United States.

[2] **Lang, V. A.**, Turner, T. J., Selbig, B. R., Harris, A. R., & Kahl, J. D. W. (2021, January 10-15). *Predicting peak wind gusts during specific weather types with the meteorologically stratified gust factor model* [Oral presentation]. 31st Conference on Weather Analysis and Forecasting, American Meteorological Society, Houston, TX, United States.

[1] Fritzen, R., **Lang, V.A.**, & Gensini, V. A. (2019, October 1-2). *Trends and Variability of North American Extratropical Cyclones 1979—2019* [Poster presentation]. Midwest Student Conference on Atmospheric Research, Champaign, IL, United States.

GRANTS AND FUNDING

[2] D.E. Horton (PI) & **V.A. Lang** (FI) (2024) Enhanced air pollution characterization from heavy-duty diesel vehicle idling using NASA TEMPO and neighborhood-scale WRF-CMAQ simulations, NASA FINESST, \$150k (declined).

[1] D.E. Horton (PI) & **V.A. Lang** (FI) (2023) Characterizing air quality and health impacts of heavy-duty vehicle idling in warehouse settings using NASA TEMPO and neighborhood-scale WRF-CMAQ simulations, NASA FINESST, \$150k (declined).

RESEARCH EXPERIENCE

ASP Colloquium AEROPOLIS, *National Center for Atmospheric Research*, Boulder, CO (July 2024)
Student Intern, *U.S. Naval Research Laboratory*, NREIP administered by Saxman One Monterey, CA (Summer 2022)

Summer Research Intern, *Lake Michigan Air Directors Consortium*, Rosmont, IL (Summer 2021)

Graduate Research Assistant, *University of Wisconsin-Milwaukee*, Milwaukee, WI (2021-2022)

Student Research Intern, *University of North Dakota*, Grand Forks, ND (Summer 2019)

Visiting Research Scientist, *National Center for Atmospheric Research* (January-March 2019)

PROFESSIONAL EXPERIENCE

Meteorologist , Innovative Weather, Milwaukee, WI	2021
Student Volunteer , National Weather Service, Romeoville, IL	2020
Social Media Coordinator , Central Illinois Market	2017- 2023
Assistant Manager , Gap Inc, Gurnee, IL	2016
Visual Merchandising Manager , Target, Lake Bluff, IL	2015-2016
Assistant Manager , Pandora, Anchorage, AK	2011–2014
Manager , Udry Jewelers Inc, Pekin, IL	2009-2011
Help Desk Technician , Illinois State University, Normal, IL	2007–2009

INVITED ACADEMIC LECTURES

1. Northwestern University, Civil Engineering CE 260	2025
2. Northwestern University, Institute for Sustainability and Energy ISEN 422	2025

TEACHING EXPERIENCE

Northwestern University, Evanston, IL

Graduate Teaching Assistant, Earth and Planetary Science

Fall 2024: TA for Earth Systems history for approximately 250, responsible for lecturing, generating exams, holding regular office hours, managing email correspondence, and conducting exam review sessions.
Fall 2023: TA for Ocean, the Atmosphere and Climate lab section for approximately 40 students. Support students during fieldwork. Construct weekly lesson plans to supplement lab assignments and hold weekly office hours. Responsible for grading weekly in-class and lab assignments. Exemplary student evaluations resulted in the Marion Sloss Award for Outstanding Graduate Teaching Assistant.

University of Wisconsin-Milwaukee, Milwaukee, WI (Aug 2020 – May 2022)

Graduate Teaching Assistant, Atmospheric Science

Instructor of Survey of Meteorology lab and lecture with approximately 100 students. Maintained web course on Canvas, a digital instruction platform. Develop and produce online presentations of lectures and lab material. Coordinated grading and assignments with a team of teaching assistants.

STUDENT RESEARCH MENTORSHIP

- [6] Martha Santiago, Senior Thesis (Fall 2024– Spring 2026)
- [5] Samarth Donapati, High School Student (Summer 2025)
- [4] Soren Moore, Independent Research (Summer 2025)
- [3] Damian Dobrowoski, Weinberg Research Grant (Summer 2025)
- [2] Andres Chirino-Segura, CIERA REU (Summer 2024)
- [1] Bela Filstrup, Weinberg Research Grant (Summer 2023)

PROFESSIONAL ORGANIZATIONS

American Meteorological Society	2019 – Present
American Geophysical Union	2022 – Present
International Society of Exposure Sciences	2023 – Present
Air and Waste Management Association	2024 – Present
Transportation Research Board	2024 – Present

TECHNICAL SKILLS

Atmospheric and air quality models: WRF-CMAQ, SMOKE-MOVES, HYSPLIT, Spatial Surrogate Tool
Programming and software: Python, R, MATLAB, C++, Visual Basic, Jupyter Lab, GIS software (QGIS), Machine learning
High-performance computing: Unix/Linux systems, Slurm workload manager, NetCDF Operators (NCO), Climate Data Operators (CDO)
Weather forecasting tools: NWP models (e.g., ECMWF, HRRR, NAM, GFS), GR2 Analyst, GRLevel3, NWS AWIP, BUFKIT
Related graduate courses: Numerical weather prediction, Air pollution modeling, Inverse methods, Air pollution meteorology, Earth system modeling, Micrometeorology, Environmental justice, GIS level 1, Scientific coding in python

PEER REVIEWER

<i>Environmental Research Communications</i>	(1)
<i>Environmental Research Health</i>	(1)
<i>Environmental Science and Technology</i>	(2)
<i>Journal of Geophysical Research: Atmospheres</i>	(1)
<i>Science of the Total Environment</i>	(1)

COMMUNITY INVOLVEMENT AND EDUCATIONAL OUTREACH

Girl Scout Volunteer (2023-Present)
Pen-Pal, Letters to a Pre-Scientist (2021-Present)
Weather unit demonstrations, D46 Prairie View Elementary School (2020-2023)
The Climate Consensus, Milwaukee, WI (2021-2023)
Peer Mentoring University of Wisconsin-Milwaukee (2021-2022)
American Meteorological Society Student Chapter President, Dekalb, IL (2019-2020)
College of Liberal Arts Student Advisory Committee Dekalb, IL (2019-2020)
Northern Illinois University Committee, Dekalb, IL (2019-2020)
Northern Illinois University Stem Festival (2018-2020)
STEM (for Girls) Day, Grayslake, IL (2017)