

Education:

- 2021, PhD, Chemistry, University of Wisconsin – Madison
- 2017, MS, Chemistry, University of Wisconsin – Madison
- 2015, BS, Chemistry, The College on New Jersey

Research Interests:

Our group studies reactive gases near the Earth's surface that impact air quality, climate, and natural ecosystems. Through a combination of field observations, chemical transport modeling, and laboratory studies, we aim to enhance our understanding of the sources and fates of both well-known and newly discovered atmospheric chemicals. Our tools include chemical ionization mass spectrometry to detect volatile organic compounds, reactive nitrogen, and ozone, along with micrometeorological techniques for direct observations of trace gas exchange between the surface and the atmosphere.

Selected Honors:

- AGU James R. Holton Award (2024)

Professional Experience:

- 2024 – present, Assistant Professor, Earth, Atmospheric, and Planetary Sciences, Purdue University
- 2023 – 2024, Postdoctoral Associate, Dept. of Chemistry, Colorado State University
- 2021 – 2024, Postdoctoral Associate, Dept. of Soil, Water, and Climate, University of Minnesota

Selected Publications:

- **Vermeuel, M. P.**, Millet, D. B., Farmer, D. K., Ganzeveld, L. N., Visser, A. J., Alwe, H. D., Bertram, T. H., Cleary, P. A., Desai, A. R., Helmig, D., Kavassalis, S. C., Link, M. F., Pothier, M. A., Riches, M., Wang, W., & Williams, S., A Vertically Resolved Canopy Improves Chemical Transport Model Predictions of Ozone Deposition to North Temperate Forests, <https://doi.org/10.1029/2024JD042092>, 2024.
- **Vermeuel, M.P.**, Millet, D.B., Farmer, D.K., Link, M.F., Pothier, M.A., Riches, M., Williams, S., Garofalo, L.A., Closing the reactive carbon flux budget: Observations from dual mass spectrometers over a coniferous forest, *J. Geophys. Res. Atmos.*, <https://doi.org/10.1029/2023JD038753>, 2023.
- **Vermeuel, M.P.**, Novak, G.A., Kilgour, D.B., Claflin, M.S., Lerner, B.M., Thom, J., Cleary, P.A., Desai, A.R., Bertram, T.H., Observations of biogenic volatile organic compounds over a mixed temperate forest during the summer to autumn transition, *Atmos. Chem. Phys.*, <https://doi.org/10.5194/acp-23-4123-2023>, 2023.
- **Vermeuel, M.P.**, Cleary, P.A., Desai, A.R., Bertram, T.H., Simultaneous measurements of O₃ and HCOOH vertical fluxes indicate rapid in-canopy terpene chemistry enhances O₃ removal over mixed temperate forests, *Geophys. Res. Lett.*, 48, <https://doi.org/10.1029/2020GL090996>, 2021.

- **Vermeuel, M.P.**, Novak, G.A., Jernigan, C.J., Bertram, T.H., The Diel Profile of Hydroperoxymethyl Thioformate: Evidence for Surface Deposition and Multiphase Chemistry, *Environ. Sci. Technol.*, 54, 12521-12529, <https://doi.org/10.1021/acs.est.0c04323>, 2020.
- **Vermeuel, M. P.**, Novak, G.A., Alwe, H.D., Hughes, D.D., Kaleel, R., Dickens, A.F., et al. Sensitivity of Ozone Production to NO_x and VOC Along the Lake Michigan Coastline. *J. Geophys. Res. Atmos.*, 124, 10989-11006, <https://doi.org/10.1029/2019JD030842>, 2019.