ALLISON E. (BAER) BREDDER

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EDUCATION

2018—Present	Ph.D. Candidate, Geographical Sciences, University of Maryland (UMD)
2012—2015	B.S., Environmental Science and Policy, University of Maryland Minor in Geographic Information Sciences, summa cum laude

PUBLICATIONS

1. Romm, M., Boyd, M., **Bredder, A.**, Doody, S., Leslie, T. Rethinking Urban Security: Prioritizing Climate Resilience in a Changing World. (In Review). *Statistics, Politics and Policy.*
2. Chen, D., Fu, C., Jenkins, L. K., He, J., Jandt, R.R., Frost, G.V., **Bredder, A.**, & Loboda, T.V. Spatial variability of fire-vegetation interactions in Arctic tundra. (In review). *Nature Plants*.
3. **Bredder, A.** 2024. Surface Monitoring of Wildfire Pollution. In Fire, Smoke, and Health: Tracking the Modeling Chain from Flames to Health and Wellbeing. Eds., Loboda, T.V., French, N.H., Puett, R. John Wiley & Sons.
4. Chen, D., Billmire, M., Loughner, C. P., **Bredder, A.**, French, N. H., Kim, H. C., & Loboda, T. V. (2023). Simulating spatio-temporal dynamics of surface PM2. 5 emitted from Alaskan wildfires. *Science of The Total Environment*, 898, 165594. https://doi.org/10.1016/j.scitotenv.2023.165594
5. Mullen, A., Watts, J., Rogers, B., Carroll, M., Elder, C., Noomah, J., Williams, Z., Caraballo-Vega, J. **Bredder, A.** et al. 2023. Using High-resolution Satellite Imagery and Deep Learning to Track Dynamic Seasonality in Small Water Bodies. *Geophysical Research Letters*. https://doi.org/10.1029/2022GL102327
6. Hoffman-Hall, A., Gorris, M.E., Anenberg, S., **Bredder, A.E.**, Dhaliwal, J.K., Diaz, M.A., Fortner, S.K., McAdoo, B.G., Reano, D., Rehr, R.C. and Roop, H.A., 2022. A GeoHealth Call to Action: Moving Beyond Identifying Environmental Injustices to Co-Creating Solutions. *GeoHealth*, 6(11), https://doi.org/10.1029/2022GH000706.
7. Chen, D., Shevade, V., **Baer, A. E.**, & Loboda, T. V. (2021). Missing Burns in the High Northern Latitudes: The Case for Regionally Focused Burned Area Products. *Remote Sensing*, 13(20), 4145. https://doi.org/10.3390/rs13204145
8. Hoffman-Hall, A., Puett, R., Silva, J. A., Chen, D., **Baer, A.**, Han, K. T., ... & Loboda, T. V. (2020). Malaria exposure in Ann Township, Myanmar, as a function of land cover and land use: Combining satellite earth observations and field surveys. *GeoHealth*, 4(12). https://doi.org/10.1029/2020GH000299
9. Gerst, M. D., Kenney, M. A., **Baer, A. E.**, Speciale, A., Wolfinger, J. F., Gottschalck, J., ... & Dewitt, D. (2020). Using Visualization Science to Improve Expert and Public Understanding of Probabilistic Temperature and Precipitation Outlooks. Weather, Climate, and Society, 12(1), 117-133. https://doi.org/10.1175/WCAS-D-18-0094.1

PUBLISHED DATASETS

1. Chen, D., M. Billmire, N.H.F. French, T.V. Loboda, and **A.E. Bredder**. 2023. Simulated Fine Particulate Matter (PM2.5) Estimates over Alaska, 2001-2015. ORNL DAAC, Oak Ridge, Tennessee, USA. https://doi.org/10.3334/ORNLDAAC/2157
2. Loboda, T.V., L.K. Jenkins, D. Chen, J. He, and **A. Baer.** 2022. Burned and Unburned Field Site Data, Noatak, Seward, and North Slope, AK, 2016-2018. ORNL DAAC, Oak Ridge, Tennessee, USA. https://doi.org/10.3334/ORNLDAAC/1919
3. Chen, D., **Baer, A.**, He, J., Hoffman-Hall, A., Shevade, V., Ying, Q., & Loboda, T.V. (2020). Land cover land use map for Myanmar at 30-m resolution for 2016. PANGAEA, https://doi.org/10.1594/PANGAEA.921
4. Loboda, T.V., J.V. Hall, and **A. Baer.** 2017. ABoVE: Wildfire Date of Burning within Fire Scars across Alaska and Canada, 2001-2019. ORNL DAAC, Oak Ridge, Tennessee, USA. https://doi.org/10.3334/ORNLDAAC/1559

SELECTED PRESENTATIONS (as presenter)

Invited

1. Baer, A.E., Kenney, M.A., Gerst, M.G. (February 2018). *Diagnosing Understandability Challenges in NOAA Climate Prediction Center's Temperature and Precipitation Outlooks*. Invited webinar hosted by the Earth Science Information Partners.

Accepted

1. Baer, A.E., Loboda, T.V. (June 2022). *Emergency department visits and wildfire emissions in Alaska, 2015-2019.* (June 2022). Oral presentation presented at the Arctic Boreal Vulnerability Experiment (ABoVE) Science Team Meeting. Fairbanks, Alaska.
2. Baer, A.E., Loboda, T.V. (July 2021). University of Alaska Fairbanks Alaska Center for Climate Assessment and Policy. "Using a random forest model to predict historical PM2.5 in Alaska."
3. Baer, A.E., Loboda, T.V. (December 2020). University of Alaska Fairbanks Alaska Center for Climate Assessment and Policy. *Estimating daily PM2.5 and PM10 concentrations in Alaska using a random forest mode*l. E-Lightning poster presented at the American Geophysical Union Annual Meeting, virtual.

RESEARCH EXPERIENCE

08/2018—Present	**Graduate Assistant** *Department of Geographical Sciences, UMD*
06/2023—09/2023	**Research Assistant** *National Consortium for the Study of Terrorism and Responses to Terrorism, UMD*
08/2021—06/2023	**Undergraduate Advising Coordinator - Graduate Assistant** *Department of Geographical Sciences, UMD*
06/2021—09/2021	**Intern** *National Aeronautics and Space Administration (NASA) Office of STEM Engagement*

TEACHING EXPERIENCE

Fall 2023	**Teaching Assistant** Geography of Environmental Systems (GEOG201), UMD
Fall 2022	**Instructor of Record** Geography of Environmental Systems (GEOG201), UMD
Fall 2019	**Instructor of Record** Developing Countries (GEOG130), UMD

PUBLISHED DATASETS

Grants and Fellowships

2024	Anne G. Wylie Dissertation Fellowship ($15,000)
2022	Jingli Yang Fellowship ($5,000)
2020	Honorable Mention: National Science Foundation Graduate Research Fellowship Program
2018	College of Behavioral and Social Sciences Dean's Fellowship, University of Maryland ($10,000)

University and Departmental Awards

2024	Outstanding Graduate Student Service, Department of Geographical Sciences, UMD
2023	AY2023/2024 UMD Graduate School Outstanding Graduate Assistant Award
2020	Outstanding Graduate Research Assistant, Department of Geographical Sciences, UMD

SERVICE

2023	Reviewer, *GeoHealth* Journal
2022—2023	Co-Chair, American Geophysical Union GeoHealth Early Career Committee
2020—2021	Co-lead, Unlearning Racism in Geosciences (URGE) Pod, Department of Geographical Sciences, UMD.