

ALLISON E. (BAER) BREDDER

Ph.D. Candidate | Graduate Assistant

Department of Geographical Sciences, University of Maryland

2181 LeFrak Hall, College Park, MD 20740, USA

bredder@umd.edu

EDUCATION

2018–Present Ph.D., Geographical Sciences, University of Maryland

2012–2015 B.S., Environmental Science and Policy, University of Maryland
Minor in Geographic Information Sciences, *summa cum laude*

PUBLICATIONS

1. Mullen, A., Watts, J., Rogers, B., Carroll, M., Elder, C., Noomah, J., Williams, Z., Caraballo-Vega, J., **Bredder, A.** et al. Using High-resolution Satellite Imagery and Deep Learning to Track Dynamic Seasonality in Small Water Bodies. (In review). *Geophysical Research Letters*.
1. 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*.
2. Chen, D., Billmire, M., **Bredder, A.**, French, N.H.F., & Loboda, T.V. (In review). Simulating spatio-temporal dynamics of surface PM_{2.5} emitted from Alaskan wildfires. *Science of the Total Environment*.
3. 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>.
4. **Bredder, A.** (accepted). 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. <https://doi.org/10.1002/essoar.10512200.1>
5. 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>
6. 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>
7. 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. 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>
2. 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>
3. 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>

SELECT 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 PM_{2.5} in Alaska."
3. **Baer, A.E.**, Loboda, T.V. (December 2020). University of Alaska Fairbanks Alaska Center for Climate Assessment and Policy. *Estimating daily PM_{2.5} and PM₁₀ concentrations in Alaska using a random forest model*. E-Lighting poster presented at the American Geophysical Union Annual Meeting, virtual.
4. Hoffman-Hall, A., **Baer, A.E.**, Loboda, V. (December 2019). *Assessing occupational exposure risk factors for subclinical malaria as a function of land cover and land use in Myanmar*. E-Lighting poster presented at the American Geophysical Union Annual Meeting, San Francisco, CA.
5. **Baer, A.E.**, Kenney, M.A.; and M. D. Gerst *Diagnosing Understandability Challenges in NOAA Climate Prediction Center's Temperature and Precipitation Outlooks*. (November 2017). Oral presentation presented at the Cooperative Institute for Climate and Satellites Science Conference, College Park, MD.

RESEARCH EXPERIENCE

08/2021–Present	Undergraduate Advising Coordinator - Graduate Assistant <i>Department of Geographical Sciences, University of Maryland</i>
06/2021–09/2021	Intern <i>National Aeronautics and Space Administration (NASA) Office of STEM Engagement</i>
08/2018–06/2021	Graduate Research Assistant <i>Department of Geographical Sciences, University of Maryland</i>

07/2016–08/2018	Faculty Assistant <i>Earth System Science Interdisciplinary Center, University of Maryland</i>
01/ 2016–07/2016	Research Analyst I <i>Optimal Solutions Group, LLC, College Park, MD</i>
06/2015–12/2015	General GIS Intern <i>National Consortium for the Study of Terrorism and Responses to Terrorism, University of Maryland</i>
06/ 2015–12/2015	Research Assistant <i>Earth System Science Interdisciplinary Center, University of Maryland</i>
01/2014–06/2015	Intern <i>U.S. Global Change Research Program, Washington, DC</i>

TEACHING EXPERIENCE

Fall 2022	Instructor of Record Geography of Environmental Systems (GEGO201), <i>University of Maryland</i>
Fall 2019	Instructor of Record Developing Countries (GEOG130), <i>University of Maryland</i>
Spring 2017	Teaching Assistant <i>Capstone in Environmental Science and Policy (ENSP400), University of Maryland</i>

HONORS & AWARDS

Grants and Fellowships

2022	Jingli Yang Fellowship (\$5,000)
2020	Honorable Mention: National Science Foundation Graduate Research Fellowship Program
2019	Jacob K. Goldhaber Travel Grant, University of Maryland (\$400)
2018	College of Behavioral and Social Sciences Dean's Fellowship, University of Maryland (\$10,000)

University Awards

2020	Outstanding Graduate Research Assistant, Department of Geographical Sciences, UMD
2015	Senior Marshal; nominated by faculty, staff, and administration to assist with leading the student processional at the University of Maryland commencement ceremony

SERVICE

- 2022–Present **Co-Chair, American Geophysical Union GeoHealth Early Career Committee**
Support Section leadership programming, organize monthly webinars featuring early career scientists' research and topics of interest for early career scientist including grant proposal writing and postdoc search.
- 2021-2022 **President, Department of Geographical Sciences, UMD Graduate Student Organization**
Serve as a voting member for Departmental motions. Advocate for graduate student needs.
- 2020-2021 **Co-lead, Unlearning Racism in Geosciences (URGE) Pod, Department of Geographical Sciences, UMD**
Organized journal readings and deliverable completing of a dozen pod members. Managed deliverable submission to URGE leadership.
- 2019, 2020, 2021 **Convener and Session Chair**
American Geophysical Union Annual Meeting, San Francisco, California
Served as the session co-convener for sessions on monitoring, modeling, and forecasting health impacts of fire emissions.
- 2019, 2020 **Orientation Committee Member**
Department of Geographical Sciences, University of Maryland
Organized three days of orientation activities for newly admitted master's and PhD students with two colleagues and the Assistant Director of Graduate Studies.

PROFESSIONAL MEMBERSHIPS

- 2019–Present American Geophysical Union