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**RESEARCH EXPERIENCE**

<b>Research Scientist III</b> Department of Atmospheric Science, Colorado State University	2022-
<b>Research Scientist II</b> Department of Atmospheric Science, Colorado State University	2018-2022
<b>Research Scientist I</b> Department of Atmospheric Science, Colorado State University	2017-2018
<b>Postdoctoral Research Assistant</b> Department of Atmospheric Science, Colorado State University Advisors: Dr. Jeffrey R. Pierce and Dr. Emily V. Fischer	2015-2016
<b>Graduate Research Assistant</b> Department of Atmospheric Science, Colorado State University Advisor: Dr. Colette L. Heald	2008-2014
<b>Undergraduate Research Assistant</b> Department of Geography and Meteorology, Valparaiso University Advisor: Dr. Gary Morris	2007-2008

**EDUCATION**

<b>Colorado State University</b> (Fort Collins, CO), <i>Ph.D. Atmospheric Science</i>	2014
<b>Colorado State University</b> (Fort Collins, CO), <i>M.S. Atmospheric Science</i>	2010
<b>Valparaiso University</b> (Valparaiso, IN), <i>B.Sc. Meteorology</i>	2008

**AWARDS AND HONORS**

CSU Department of Atmospheric Science Exceptional Service Award	2023
CSU Walter Scott, Jr. CoE Outstanding Researcher – Rising Star Award	2019
David L. Dietrich Honorary Scholarship, Colorado State University	2013
Outstanding Student Paper Award, AGU Fall Meeting	2012
Ball Aerospace Graduate Fellowship, Colorado State University	2008-2010
Eugene M. Rasmusson Award, Valparaiso University	2008
Phi Beta Kappa	2008
Chi Epsilon Pi Meteorology Honor Society	2007-2008
Kappa Delta Pi Educational Honor Society	2005-2006

**PROFESSIONAL ASSOCIATIONS AND SERVICE**

American Geophysical Union, American Association of Aerosol Research, American Meteorological Society

Reviewer for *Atmospheric Environment*, *Journal of Geophysical Research*, *Atmospheric Chemistry and Physics*, *Elementa*, *Atmospheric Pollution Research*, *Environmental Health Perspectives*, *International Journal of Wildland Fire*, *Environment International*, *Atmosphere*, *Nature Communications*, *Environmental Research Letters*, *GeoHealth*, *Lancet Planetary Health*  
Session Chair, 24<sup>th</sup> Conference on Atmospheric Chemistry, AMS 102<sup>nd</sup> Annual Meeting, 2022.  
Session Chair, 25<sup>th</sup> Conference on Atmospheric Chemistry, AMS 103<sup>rd</sup> Annual Meeting, 2023.  
Staff Representative on Department Awards Committee (2021-2023) and Faculty Meetings (2023)

#### TECHNICAL SKILLS:

Computer Programming: proficient with Python, IDL, Unix/Linux shell scripting, experience with R and Fortran (77 and 90)  
Chemical Transport Modeling: GEOS-Chem, WRF-Chem  
Experience with processing and managing large datasets (model output and satellite observations)  
Experience with low-cost sensors (deployments, validation, QA/QC, API data streaming): PurpleAirs, AMODv1/v2, 2BTech AQLites

#### PUBLICATIONS

Wendt, E. and **B. Ford**, M. Cheeseman, Z. Rosen, J. R. Pierce, S. H. Jathar, C. L'Orange, C. Quinn, M. Long, J. Mehaffy, D. D. Miller-Lionberg, D. H. Hagan, and J. Volckens: A national crowdsourced network of low-cost fine particulate matter and aerosol optical depth monitors: Results from the 2021 wildfire season in the United States, submitted to *Environmental Science: Atmosphere*, 2023.

Hill, A. E., J. Burkhardt, J. Bayham, K. O'Dell, **B. Ford**, E. V. Fischer, J. R. Pierce: Air Pollution, Weather, and Agricultural Worker Productivity, submitted to *American Journal of Agricultural Economics*, 2023.

Rosen, Z., G. Henery, K. D. Slater, O. Sablan, **B. Ford**, J. R. Pierce, E. V. Fischer, and S. Magzamen (2023): A culture of fire: Identifying community risk perceptions surrounding prescribed burning in the Flint Hills, Kansas. *Journal of Applied Communications*, 106(4), <https://doi.org/10.4148/1051-0834.2455>.

Cheeseman, M. J., **B. Ford**, S. C. Anenberg, M. J. Cooper, E. V. Fischer, M. S. Hammer, S. Magzamen, R. V. Martin, A. van Donkelaar, J. Volckens, and J. R. Pierce (2022): Disparities in air pollutants across racial, ethnic, and poverty groups at US public schools. *GeoHealth*, 6, e2022GH000672, <https://doi.org/10.1029/2022GH000672>.

O'Dell, K., **B. Ford**, J. Burkhardt, S. Magzamen, S. Anenberg, J. Bayham, E. V. Fischer, and J. R. Pierce (2022): Outside in: The relationship between indoor and outdoor particulate air quality during wildfire smoke events in western US cities, *Environmental Research: Health*, <https://doi.org/10.1088/2752-5309/ac7d69>.

Juncosa Calahorrano, J., V. H. Payne, S. S. Kulawik, **B. Ford**, F. M. Flocke, T. Campos, and E. V. Fischer (2021): Evolution of Peroxyacetyl Nitrate (PAN) in wildfire smoke plumes detected by the Cross-Track Infrared Sounder (CrIS) over the western U.S. during summer 2018, *Geophysical Research Letters*, 14, 6023-6038, <https://doi.org/10.5194/amt-14-6023-2021>.

Wendt, E. A., C. Quinn, C. L'Orange, D. D. Miller-Lionberg, **B. Ford**, J. R. Pierce, J. Mehaffy, M. J. Cheeseman, S. Jathar, D. H. Hagan, Z. Rosen, M. Long, and J. Volckens (2021): A low-cost monitor for simultaneous measurement of fine particulate matter and aerosol optical

- depth - Part 3: Automation and design improvements, *Atmos. Meas. Tech.*, 14, 6023-6038, <https://doi.org/10.5194/amt-14-6023-2021>.
- O'Dell, K., K. Bilsback, **B. Ford**, S. E. Martenies, S. Magzamen, E. V. Fischer, J. R. Pierce (2021): Estimated Mortality and Morbidity Attributable to Smoke Plumes in the US: Not Just a Western US Problem, *GeoHealth*, 5, e2021GH000457. <https://doi.org/10.1029/2021GH000457>.
- Magzamen, S., R. W. Gan, J. Liu, K. O'Dell, **B. Ford**, K. Berg, K. Bol, A. Wilson, E. V. Fischer, J. R. Pierce (2021): Differential cardiopulmonary health impacts of local and long-range transport of wildfire smoke, *GeoHealth*, 5, e2020GH000330, <https://doi.org/10.1029/2020GH000330>.
- Sorensen, C., J. A. House, K. O'Dell, S. J. Brey, **B. Ford**, J. R. Pierce, E. V. Fischer, J. Lemery, and J. L. Crooks (2021): Associations between wildfire-related PM<sub>2.5</sub> and Intensive Care Unit Admissions in the United States, 2006-2015, *GeoHealth*, 5, e2021GH000385, <https://doi.org/10.1029/2021GH000385>.
- Bilsback, K.R., D. Kerry, B. Croft, **B. Ford**, E. Carter, R. Martin, and J. R. Pierce (2020): Beyond SO<sub>x</sub> reductions from shipping: Assessing the impact of NO<sub>x</sub> and carbonaceous-particle controls on human health and climate, *Env. Res. Lett.*, 15, 124046, <https://doi.org/10.1088/1748-9326/abc718>.
- Bilsback, K.R., J. Baumgartner, M. Cheeseman, **B. Ford**, J.K. Kodros, X. Li, E. Ramnarine, S. Tao, Y. Zhang, E. Carter, and J. R. Pierce (2020): Estimated Aerosol Health and Radiative Effects of the Residential Coal Ban in the Beijing-Tianjin-Hebei Region of China, *Aerosol Air Qual. Res.*, 20, 2332-2346, <https://doi.org/10.4209/aaqr.2019.11.0565>.
- O'Dell, K., R. Hornbrook, W. Permar, E. Levin, L. Garofalo, E. Apel, N. Blake, A. Jarnot, M. Pothier, D. Farmer, L. Hu, T. Campos, **B. Ford**, J. R. Pierce, and E. Fischer (2020): Hazardous Air Pollutants in Fresh and Aged Western US Wildfire Smoke and Implications for Long-Term Exposure, *Env. Sci. Tech.*, 54, 19, 11838-11847, <https://doi.org/10.1021/acs.est.0c04497>.
- Cheeseman, M., **B. Ford**, J. Volckens, A. Lyapustin, and J. R. Pierce (2020): The Relationship Between MAIAC Smoke Plume Heights and Surface PM, *Geophys. Res. Lett.*, 47, e2020GL088949, <https://doi.org/10.1029/2020GL088949>.
- Lassman, W., J. R. Pierce, E. Bangs, A. P. Sullivan, **B. Ford**, G. Mengistu Tsidu, J. P. Sherman, J. L. Collett, S. Bililign (2020): Using low-cost measurement systems to investigate air quality: a case study in Palapye, Botswana, *Atmosphere*, <https://doi.org/10.3390/atmos11060583>.
- Hammer, M. S., A. van Donkelaar, C. Li, A. Lyapustin, A. M. Sayer, N. C. Hsu, R. C. Levy, M. Garay, O. Kalashnikova, R. A. Kahn, M. Brauer, J. S. Apte, D. K. Henze, L. Zhang, Q. Zhang, **B. Ford**, J. R. Pierce, R. V. Martin (2020): Global Estimates and Long-Term Trends of Fine Particulate Matter Concentrations (1998-2018), *Env. Sci. Tech.*, <https://doi.org/10.1021/acs.est.0c01764>, 2020.
- Gan, R. W., J. Liu, **B. Ford**, K. O'Dell, A. Vaidyanathan, A. Wilson, J. Volckens, G. Pfister, E. V. Fischer, J. R. Pierce, S. Magzamen (2020): The association between wildfire smoke exposure and asthma-specific medical care utilization in Oregon during the 2013 wildfire season, *Journal Of Exposure Science And Environmental Epidemiology*, <https://doi.org/10.1038/s41370-020-0210-x>.

- Bian, Q., **B. Ford**, J. R. Pierce, and S. Kreidenweis (2020): A decadal climatology of chemical, physical, and optical properties of ambient smoke in the western and southeastern U.S., *J. Geophys. Res.*, 125(1), <https://doi.org/10.1029/2019JD031372>.
- Ford, B.**, J. R. Pierce, E. Wendt, M. Long, S. Jathar, J. Mehaffy, J. Tryner, Casey Quinn, L. van Zyl, C. L'Orange, D. Miller-Lionberg, and J. Volckens (2019): A low-cost monitor for measurement of fine particulate matter and aerosol optical depth. Part 2: Citizen science pilot campaign in northern Colorado, *Atmos. Meas. Tech.*, 12, 6385-6399, doi:10.5194/amt-12-6385-2019.
- Wendt, E., C. Quinn, D. Miller-Lionberg, J. Tryner, C. L'Orange, **B. Ford**, A. Yalin, J. R. Pierce, S. Jathar, and J. Volckens (2019): A low-cost monitor for measurement of fine particulate matter and aerosol optical depth. Part 1: Specifications and testing, *Atmos. Meas. Tech. Discuss.*, 12, 5431-5441, doi:10.5194/amt-12-5431-2019.
- Burkhardt, J., J. Bayham, A. Wilson, E. Carter, J. D. Berman, K. O'Dell, **B. Ford**, E. V. Fischer, J. R. Pierce (2019): The effect of pollution on crime: Evidence from data on particulate matter and ozone, *Journal of Environmental Economics and Management*, doi:10.1016/j.jeem.2019.102267.
- Abdo, M., I. Ward, K. O'Dell, **B. Ford**, Jeffrey R. Pierce, E. V. Fischer, and J. Crooks (2019): Impact of Wildfire Smoke on Adverse Pregnancy Outcomes in Colorado, 2007-2015. *International Journal of Environmental Research and Public Health*, 16(19), 3720, doi:10.3390/ijerph16193720
- Burkhardt, J., J. Bayham, A. Wilson, J. D. Berman, K. O'Dell, **B. Ford**, E. V. Fischer, J. R. Pierce (2019): The Relationship Between Air Pollution and Violent Crime Across the United States, *Journal of Environmental Economics and Policy*, pp.1-18, doi:10.1080/21606544.2019.1630014.
- Pratt, J. R., R. W. Gan, **B. Ford**, S. Brey, J. R. Pierce, E. V. Fischer, S. Magzamen (2019): A national burden assessment of estimated pediatric asthma emergency department visits that may be attributed to elevated ozone levels associated with the presence of smoke, *Environmental Monitoring and Assessment*, 191(S2), 269, doi:10.1007/s10661-019-7420-5.
- Lipner, E., K. O'Dell, S. Brey, **B. Ford**, J. R. Pierce, E. V. Fischer, and J. L. Crooks (2019): The Associations between Clinical Respiratory Outcomes and Ambient Wildfire Smoke Exposure among Pediatric Asthma Patients at National Jewish Health, 2012-2015, *GeoHealth*, 3, doi: 10.1029/2018GH000142.
- O'Dell, K., **B. Ford**, E. V. Fischer, and J. R. Pierce (2019): The contribution of wildland-fire smoke to US PM<sub>2.5</sub> and its influence on recent trends, *Environmental Science & Technology*, doi:10.1021/acs.est.8b05430.
- Ford, B.**, M. Val Martin, S. E. Zelasky, E. V. Fischer, S. C. Anenberg, C. L. Heald, and J. R. Pierce (2018): Future Fire Impacts on Smoke Concentrations, Visibility, and Health in the Contiguous United States, *GeoHealth*, 2, doi:10.1029/2018GH000144.
- Ford, B.**, M. Burke, W. Lassman, G. Pfister and J. R. Pierce (2017): Status Update: Is smoke on your mind? Using social media to improve smoke exposure estimates, *Atmos. Chem. Phys.*, 17, 7541-7554, doi:10.5194/acp-17-7451-2017.
- Gan, R. W., **B. Ford**, W. Lassman, G. Pfister, A. Vaidyanathan, E. Fischer, J. Volckens, J. R. Pierce, S. Magzamen (2017): Comparison of wildfire smoke estimation methods and

- associations with cardiopulmonary-related hospital admissions, *GeoHealth*, 1, doi:10.1002/2017GH000073.
- Lassman, W., B. Ford, R. W. Gan, G. Pfister, S. Magzamen, E. V. Fischer, and J. R. Pierce (2017): Spatial and Temporal Estimates of Population Exposure to Wildfire Smoke during the Washington State 2012 Wildfire Season Using Blended Model, Satellite, and In-Situ Data, *GeoHealth*, 1, doi: 10.1002/2017GH000049.
- Ford, B.** and C. L. Heald (2016): Exploring the uncertainty associated with satellite-based estimates of premature mortality due to exposure to fine particulate matter. *Atmos. Chem. Phys.*, 16, 3499-3523, doi: 10.5194/acp-16-3499-2016.
- Kodros, J. K., C. Weidinmyer, **B. Ford**, R. Cucinotta, R. Gan, S. Magzamen, and J. R. Pierce (2016): Global burden of mortalities due to chronic exposure to ambient PM<sub>2.5</sub> from open combustion of domestic waste, *Env. Res. Lett.*, 11 (12), 2016, doi:10.1088/1748-9326/11/12/124022.
- Ford, B.** and C. L. Heald (2013): Aerosol loading in the Southeastern United States: reconciling surface and satellite observations, *Atmos. Chem. Phys.*, 13, 9269-9283, doi:10.5194/acp-13-9269-2013.
- Val Martin, M., C. L. Heald, **B. Ford**, A. J. Prenni, and C. Wiedinmyer (2013): A decadal satellite analysis of the origins and impacts of smoke in Colorado, *Atmos. Chem. Phys.*, 13, 7429-7439, doi:10.5194/acp-13-7429-2013, 2013.
- Ford, B.** and C. L. Heald (2012): An A-Train and model perspective on the vertical distribution of pollution transport in the Northern Hemisphere, *J. Geophys. Res.*, 117, D06211, doi:10.1029/2011JD016977.
- Ridley, D. R., C. L. Heald, and **B. Ford** (2012): North African Dust Export and Impacts: An Integrated Satellite and Model Perspective, *J. Geophys. Res.*, 117, D02202, doi:10.1029/2011JD016794.
- Morris, G. A., **B. Ford**, B. Rappenglück, A.M. Thompson, A. Mefferd, F. Ngan, and B. Lefer (2010): An evaluation of the interaction of morning residual layer and afternoon mixed layer ozone in Houston using ozonesonde data, *Atmospheric Environment*, 44(33), 4024-4034. doi: 10.1016/j.atmosenv.2009.06.057.

#### MAGAZINE ARTICLES

- Quinn, C., **B. Ford**, and J. Volckens (2019): Mobilizing the Low-Cost Sensor Revolution with Smartphones and Citizen Science, *EM*.

#### CONFERENCE PRESENTATIONS

- Bonne Ford, Sheryl Magzamen, Katelyn O'Dell, Olivia Sablan, Emily V. Fischer, and Jeffrey R. Pierce: "Health Impact Assessments for Landscape Fires", Oral Presentation, NASA HAQAST Team Meeting, St. Louis, MO, 18-19 April 2023.
- Bonne Ford, Eric Wendt, Zoey Rosen, Michael Cheeseman, Casey Quinn, Christian L'Orange, Shantanu Jathar, Marilee Long, Jeffrey R. Pierce, and John Volckens: "Exploring PM<sub>2.5</sub>:AOD Ratios Measured by Citizen Scientists Using Low-Cost Sensors", Poster Presentation, 24th Conference on Atmospheric Chemistry, AMS 102nd Annual Meeting, virtual, 23-27 January 2022.

- Bonne Ford, Eric Wendt, Casey Quinn, Zoey Rosen, Michael J. Cheeseman, Christian L'Orange, John Mehaffy, Marilee Long, Shantanu Jathar, Jeffrey R. Pierce, and John Volckens: "Using lower cost sensors to establish citizen-based monitoring networks in smoke-impacted regions." Oral Presentation, 3<sup>rd</sup> International Smoke Symposium, virtual, 20-23 April 2020.
- Bonne Ford "Population Exposure Assessment for Wildfire Smoke (Invited)." Oral Presentation, British Columbia Lung Association 16th Annual Air Quality and Health Workshop, Vancouver, BC, 6 February 2019.
- Bonne Ford, Katelyn O'Dell, Ryan Gan, Maria Val Martin, Sheryl Magzamen, Emily V. Fischer, Jeffrey R. Pierce: "Current and Future Health Effects Associated with Wildfire Smoke Exposure in the Western United States (Invited)." Oral Presentation, 2018 AGU Fall Meeting, Washington, D. C., 10-14 December 2018. (\*presented by Katelyn O'Dell)
- Bonne Ford, Katelyn O'Dell, Ryan Gan, Jingyang Liu, William Lassman, Moira Burke, Gabriele Pfister, Ambarish Vaidyanathan, John Volckens, Sheryl Magzamen, Emily V. Fischer, Jeffrey R. Pierce. "Smoke exposure and associated health effects across several fire seasons and locations in the western US." Oral Presentation, 2018 AMS Annual Meeting, Austin, TX, 7-11 January 2018.
- Bonne Ford, Will Lassman, Ryan Gan, Moira Burke, Gabriele Pfister, Sheryl Magzamen, Emily V. Fischer, John Volckens, Jeffrey R. Pierce. "Who, what, when, where? Determining the health implications of wildfire smoke exposure." Oral Presentation, 2016 AGU Fall Meeting, San Francisco, CA, 12-16 December 2016.
- Bonne Ford, Will Lassman, Ryan Gan, Moira Burke, Gabriele Pfister, Sheryl Magzamen, Emily V. Fischer, John Volckens, Jeffrey R. Pierce. "Who, what, when, where? Determining the health implications of wildfire smoke exposure." Oral Presentation, 2<sup>nd</sup> International Smoke Symposium, Long Beach, CA, 14-17 November 2016.
- Bonne Ford, Moira Burke, William Lassman, Gabriele Pfister, Jeffrey R. Pierce. "Is smoke on your mind?: Using social media to improve estimates of smoke exposure." Oral Presentation, 35<sup>th</sup> Annual AAAR Conference, Portland, OR, 17-21 October 2016.
- Bonne Ford, Ryan Gan, William Lassman, Gabriele Pfister, Emily V. Fischer, John Volckens, Sheryl Magzamen, and Jeffrey R. Pierce. "Downwind of the Flames: Assessing and predicting wildfire smoke related morbidity using satellites, in-situ measurements and models." Oral Presentation, American Thoracic Society Conference, San Francisco, CA, 16 May 2016.
- Bonne Ford, Emily V. Fischer, William Lassman, Jeffrey R. Pierce, Gabriele Pfister, John Volckens, Sheryl Magzamen, and Ryan Gan: How wild is your model fire? Constraining WRF-Chem wildfire smoke simulations with satellite observations. Poster Presentation, 2015 AGU Fall Meeting, San Francisco, CA, 14-18 December 2015.
- Bonne Ford, William Lassman, Emily V. Fischer, Gabriele Pfister, and Jeffrey R. Pierce. "Estimating smoke concentrations in Fort Collins, CO from local and transported wildfire plumes." Poster Presentation, 34<sup>th</sup> Annual AAAR Conference, Minneapolis, MN, 14 October 2015.
- Bonne Ford and Colette Heald. "Uncertainties in estimating health effects of PM<sub>2.5</sub> exposure." Oral Presentation, 7<sup>th</sup> International GEOS-Chem User's Meeting, Harvard University, 5 May 2015.

- Bonne Ford and Colette Heald. "Constraining model estimates of PM<sub>2.5</sub> for short term exposure: Considerations for mortality estimates." Poster Presentation, IGAC Conference, Natal, Brazil, 23 September 2014.
- Bonne Ford and Colette Heald. "Aerosol loading in the Southeastern United States: Reconciling surface and satellite observations." Oral Presentation, Young Scientist Symposium on Atmospheric Research, Fort Collins, CO, 20 September 2013.
- Bonne Ford and Colette Heald. "Aerosol loading in the Southeastern United States: Reconciling surface and satellite observations." Oral Presentation, 6<sup>th</sup> International GEOS-Chem User's Meeting, Harvard University, 6-9 May 2013.
- Bonne Ford and Colette Heald. "Aerosol loading in the Southeastern United States: Reconciling surface and satellite observations." Poster Presentation, 2012 AGU Fall Meeting, San Francisco, 9-13 December 2012.
- Bonne J. Ford and Colette Heald. "Vertical Distribution of Pollutants in GEOS-Chem and from Satellite Observations." Poster Presentation, 5<sup>th</sup> International GEOS-Chem User's Meeting, Harvard University, 2-5 May 2011.
- Bonne J. Ford and Colette Heald. "Role of the Vertical Structure of Gas and Aerosol Pollutants During Long Range Transport." Poster Presentation, 2009 AGU Fall Meeting, San Francisco, 14-18 December 2009.
- Bonne Ford, Gary A. Morris, Xiangshang Li, Bernhard Rappenglueck, Daewon Byun, Barry Lefer, Ryan Perna, Renee Boudreaux, Bridget McEvoy-Day, Leonardo Pedemonte, and Elizabeth Thompson. "The impact of residual layer ozone on surface ozone levels in Houston, Texas during TexAQS II." Poster Presentation, 10th Conference on Atmospheric Chemistry, as part of the 88<sup>th</sup> Annual AMS Meeting, New Orleans, 20-24 January 2008.