Kang Sun

Associate Professor
Department of Civil, Structural and Environmental Engineering

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EDUCATION

Ph.D., Environmental Engineering, Princeton University   Jun 2015
Advisor: Prof. Mark A. Zondlo
Dissertation: Constraining atmospheric ammonia emissions through new observations
with an open-path, laser-based sensor

B.S., Environmental Sciences, Peking University   Jul 2009
Advisor: Prof. Min Hu
Thesis: Estimation of ambient particle density in the winter and summer of Beijing

B.A., Economics, Peking University   Jul 2009

RESEARCH EXPERIENCE

Associate Professor   Mar 2025 – present
Department of Civil, Structural and Environmental Engineering
University at Buffalo, Buffalo, NY

Assistant Professor   Jan 2020 – Mar 2025
Department of Civil, Structural and Environmental Engineering
University at Buffalo, Buffalo, NY

Research Assistant Professor   Jan 2018 – Jan 2020
Research and Education in eNergy, Environment and Water (RENEW) Institute
University at Buffalo, Buffalo, NY

Atmospheric Physicist   Jul 2017 – Jan 2018
Smithsonian Astrophysical Observatory
Harvard-Smithsonian Center for Astrophysics, Cambridge, MA

Postdoctoral Research Fellow   Aug 2015 – Jul 2017
Smithsonian Astrophysical Observatory
Harvard-Smithsonian Center for Astrophysics, Cambridge, MA

Research Assistant   Sep 2009 – Jun 2015
Department of Civil and Environmental Engineering
Princeton University, Princeton, NJ

Research Intern   Oct 2013 – Aug 2014
NEC Labs America
Princeton, NJ

HONORS AND AWARDS

CAREER Award, National Science Foundation (NSF)   2024

Individual Development Award, United University Professions Union   2019–2020

2018 Pecora Team Award, National Land Imaging Program   2018
Received as a member of Ozone Monitoring Instrument (OMI) International Team

ACCESS XIV, Atmospheric Chemistry Colloquium for Emerging Senior Scientists   2017

Graduate Student Fellowship in Earth Systems Science, NASA   2012–2015

Gordon Wu Prize for excellence, Princeton University   2013

May 4th Scholarship, Peking University   2007

Founder Scholarship, Peking University   2006

Samsung Scholarship, Peking University   2005

TEACHING EXPERIENCE

Spring 2022–2025	**Instructor**, Department of Civil, Structural & Environmental Engineering, University at Buffalo CIE 461/563–Air Pollution
Spring 2020–2021, Fall 2024–2025	**Instructor**, Department of Civil, Structural & Environmental Engineering, University at Buffalo CIE 532–Statistical methods in Environmental and Water Resources Engineering
Fall 2018–2023	**Instructor**, Department of Civil, Structural & Environmental Engineering, University at Buffalo CIE 546–Environmental Fluid Mechanics
Spring 2012	**Assistant in Instruction**, Department of Civil and Environmental Engineering, Princeton University CEE 311–Global Air Pollution

GRANTS AND CONTRACTS

Summary of Research Funding:

Funding Category	Total	My Share
External sources	$8,897,709	$2,848,420
Internal sources	$45,000	$10,000
Total Funded Research	$8,942,709	$2,858,420

Funded, submitted at UB

"High-Resolution NOx Emission Estimation From TEMPO Observations: Advancing Air Pollution Monitoring and Public Health Analysis", PI: Kang Sun, Future Investigator (FI): Jobaer Ahmed

Saju, 11/1/2025 – 10/31/2028, NASA ROSES-2024 FINESST, $147,697 (100% share)

"Dual-Band N_2O Retrieval From GOSAT-2", PI: Kang Sun, 10/1/2025 – 9/30/2026, Environmental Defense Fund, $60,000 (100% share)

"CAREER: Timely Estimation of Nitrogen Oxides Emissions for Improved Monitoring and Simulation of Atmospheric Chemical Processes", PI: Kang Sun, 5/1/2024 – 4/30/2029, NSF CAREER, $643,562 (100% share)

"N_2O remote sensing sensitivity study", PI: Kang Sun, 10/1/2023 – 6/30/2025, Environmental Defense Fund, $124,926 (100% share)

"Integrating satellite data, in-situ measurements, and process-based models to quantify and attribute agricultural emissions of NH_3 and NO_x for the US Midwest", PI: Kaiyu Guan, Co-Is: Bin Peng, Wendy Yang, Steven Hall, Mark Zondlo, and Kang Sun, 12/7/2023 – 12/6/2026, NASA, $1,504,063 (17% share)

"Improving air quality monitoring for Buffalo African-American community", PI: Eun-Hye Yoo, Co-PIs: Margaret Grinslade, Kang Sun, and Meng Wang, 12/29/2023 – 12/28/2026, US EPA, $499,963 (10% share)

"Wildfires in natural ecosystem and urban community", PI: Kang Sun, Co-PIs: Negar Elhami Khorasani and Adam Wilson, 7/1/2021 – 6/30/2023, Buffalo Blue Sky, $15,000 (33% share)

"Evaluating Gaps between Perceived and Objective Risks of Fire in Wildland Urban Interface Communities", PI: Negar Elhami Khorasani, Co-PIs: Janet Yang, Kevin Smiley, Sayanti Mukherjee, and Kang Sun, 10/15/2020 – 10/14/2022, SUNY Research Seed Grant Program, $30,000 (17% share)

"The 'System of Systems' Solutions for Commercial Field-Level Quantification of Soil Organic Carbon and Nitrous Oxide Emission for Scalable Applications (SYMFONI)", PI: Kaiyu Guan, Co-PIs: Evan DeLucia, Wendy Yang, Jian Peng, DoKyoung Lee, Zhenong Jin, and Kang Sun, 1/1/2021 – 8/31/2024, DOE ARPA-E, $4,500,000 (8% share)

"A Satellite Data-Driven Framework to Quantify Sources and Lifetimes of Atmospheric Pollutants and Their Responses to the COVID-19 Pandemic", PI: Kang Sun, 7/7/2020 – 7/6/2022, NASA ROSES-2020 RRNES, $100,000 (100% share)

"MethaneSAT/MethaneAIR Science and Algorithms at UB", PI: Kang Sun, 1/1/2020 – 7/31/2024, MethaneSAT LLC, $238,942 (100% share)

"Participation in MEaSUREs: The Long-Term and Consistent Earth System Data Records of H_2CO, CHOCHO and H_2O from Multi-Satellite UV/Visible Spectra", PI: Kang Sun, 9/1/2019 – 6/7/2024, Smithsonian Institution, $381,839 (100% share)

"Observational Data-driven Surface Concentrations Derived from Satellite Columns and Aircraft Profiles", PI: Kang Sun, Co-I: Dan Li, 5/2/2019 – 5/1/2023, NASA ROSES-2018 ACMAP, $528,471 (69% share)

"A Satellite to Measure Emissions of CH_4 from Gas and Oil Production Regions - Phase A1 Study", PI: Kang Sun, 4/1/2018 – 3/31/2019, Smithsonian Institution, $52,195 (100% share)

PUBLICATIONS

71 peer-reviewed publications, 5532 citations, H-index 35 according to Google Scholar: `https://scholar.google.com/citations?user=nYe7oFIAAAAJ&hl=en&oi=ao`

Corresponding author indicated by *

Graduate students or postdoc advised at UB are labelled with <u>underline</u>

<u>Peer-reviewed Publications at UB</u>

71. [JGR'25b] **K. Sun***, <u>J. A. Saju</u>, C. R. Nowlan, G. González Abad, and X. Liu, Hourly nitrogen oxides emissions estimated from TEMPO and comparison with facility-level monitoring data. ***Journal of Geophysical Research: Atmospheres***, 130, e2025JD044565, doi:10.1029/2025JD044565, 2025.

70. [GeoHealth'25] X. Jin, Z. Merchant, and **K. Sun**, Physics-based spatial oversampling of TROPOMI NO_2 observations to US neighborhoods reveals the disparities of air pollution. ***GeoHealth***, 9, e2025GH001423, doi:10.1029/2025GH001423, 2025.

69. [JGR'25a] <u>Z. Ayazpour</u>, **K. Sun***, R. Zhang, and H. Shen, Evaluation of the Directional Derivative Approach for Timely and Accurate Satellite-Based Emission Estimation Using Chemical Transport Model Simulation of Nitrogen Oxides, ***Journal of Geophysical Research-Atmospheres***, 130, e2024JD042817, doi:10.1029/2024JD04281712, 2025.

68. [EST'25] A. Epps, I. M. Dressel, X. Guo, M. Odanibe, K. P. Fields, A. M. G. Carlton, **K. Sun** and Pusede, S.E., Satellite Observations of Atmospheric Ammonia Inequalities Associated with Industrialized Swine Facilities in Eastern North Carolina. ***Environmental Science & Technology***, doi:10.1021/acs.est.4c11922, 2025.

67. [ESS'25] <u>Z. Ayazpour</u>, G. González Abad, C. R. Nowlan, **K. Sun**, H-A Kwon, C. Chan Miller, H. Chong, H. Wang, X. Liu, K. Chance, E. O'Sullivan, L. Zhu, C. Vigouroux, I. De Smedt, W. Stremme, J. W. Hannigan, J. Notholt, X. Sun, M. Palm, C. Petri, K. Strong, A. N. Rohling, E. Mahieu, D. Smale, Y. Té, I. Morino, I. Murata, T. Nagahama, R. Kivi, M. Makarova, N. B. Jones, R. Sussmann, Aura Ozone Monitoring Instrument (OMI) Collection 4 Formaldehyde Product, ***Earth and Space Science***, 12, e2024EA003792, doi:10.1029/2024EA003792, 2025.

66. [AMT'24c] C. Chan Miller, S. Roche, J. Wilzewski, X. Liu, K. Chance, A. Souri, E. Conway, B. Luo, J. Samra, J. Hawthorne, **K. Sun**, <u>C. Staebell</u>, A. Chulakadabba, M. Sargent, J. Benmergui, J. Franklin, B. Daube, Y. Li, J. Laughner, B. Baier, R. Gautam, M. Omara, S. Wofsy, Methane retrieval from MethaneAIR using the CO_2 Proxy Approach: A demonstration for the upcoming MethaneSAT mission, ***Atmospheric Measurement Techniques***, 17, 5429–5454, doi:10.5194/amt-17-5429-2024, 2024.

65. [ESTair'24] I. Dressel, S. Zhang, M. A. Demetillo, S. Yu, K. Fields, L. Judd, C. Nowlan, **K. Sun**, A. Kotsakis, A. Turner, and S. Pusede, Neighborhood-Level Nitrogen Dioxide Inequalities Contribute to Surface Ozone Variability in Houston, Texas, ***ACS ES&T Air***, doi:10.1021/acsestair.4c00009, 2024.

64. [ACP'24] Z. Lu, J. Wang, Y. Wang, D. Henze, X. Chen, T. Sha, and **K. Sun**, Aggravated surface O_3 pollution primarily driven by meteorological variation in China during the early COVID-19 pandemic lockdown period, ***Atmospheric Chemistry and Physics***, 24, 7793–7813, doi:10.5194/acp-24-7793-2024, 2024.

63. [AMT'24b] E. Conway, A. Souri, J. Benmergui, **K. Sun**, X. Liu, <u>C. Staebell</u>, C. Chan Miller, J. Franklin, J. Samra, J. Wilzewski, S. Roche, B. Luo, A. Chulakadabba, M. Sargent, J. Hohl, B. Daube, I. Gordon, K. Chance, and S. Wofsy, Level0-to-Level1B processor for MethaneAIR, ***Atmospheric Measurement Techniques***, 17, 1347–1362, doi:`10.5194/amt-17-1347-2024`, 2024.

62. [AMT'24a] K. Cady-Pereira, X. Guo, R. Wang, A. Leytem, C. Calkins, E. Berry, **K. Sun**, M. Müller, A. Wisthaler, V. Payne, M. Shephard, M. Zondlo, and V. Kantchev, Validation of NH_3 observations from AIRS and CrIS against aircraft measurements from DISCOVER-AQ and a surface network in the Magic Valley, ***Atmospheric Measurement Techniques***, 17, 15–36, doi:`10.5194/amt-17-15-2024`, 2024.

61. [AMT'23b] A. Chulakadabba, M. Sargent, T. Lauvaux, J. Benmergui, J. Franklin, C. Chan Miller, J. Wilzewski, S. Roche, E. Conway, A. Souri, **K. Sun**, B. Luo, J. Hawthrone, J. Samra, B. Daube, X. Liu, , K. Chance, Y. Li, R. Gautam, M. Omara, J. Rutherford, E. Sherwin, A. Brandt, and S. Wofsy, Methane point source quantification using MethaneAIR: a new airborne imaging spectrometer, ***Atmospheric Measurement Techniques***, 16, 5771–5785, doi:`10.5194/amt-16-5771-2023`, 2023.

60. [ACP'23b] R. Wang, D. Pan, X. Guo, **K. Sun**, L. Clarisse, M. Van Damme, P.-F. Coheur, C. Clerbaux, M. Puchalski, and M. Zondlo, Bridging the spatial gaps of the Ammonia Monitoring Network using satellite ammonia measurements, ***Atmospheric Chemistry and Physics***, 23, 13217–13234, doi:`10.5194/acp-23-13217-2023`, 2023.

59. [ACP'23a] <u>C. Lonsdale</u> and **K. Sun***, Nitrogen oxides emissions from selected cities in North America, Europe, and East Asia observed by the TROPOspheric Monitoring Instrument (TROPOMI) before and after the COVID-19 pandemic, ***Atmospheric Chemistry and Physics***, 23, 87278748, doi:`10.5194/acp-23-8727-2023`, 2023

58. [ESS'23b] C. R. Nowlan, G. González Abad, H.-A. Kwon, <u>Z. Ayazpour</u>, C. Chan Miller, K Chance, H. Chong, X. Liu, E. OSullivan, H. Wang, L. Zhu, I. De Smedt, G. Jaross, C. Seftor, and **K. Sun**, Global Formaldehyde Products From the Ozone Mapping and Profiler Suite (OMPS) Nadir Mappers on Suomi NPP and NOAA-20, ***Earth and Space Science***, 10(5), e2022EA002643, doi:`10.1029/2022EA002643`, 2023.

57. [ESS'23a] O. M. Coddington, E. C. Richard, D. Harber, P. Pilewskie, T. N. Woods, M. Snow, K. Chance, X. Liu, and **K. Sun**, Version 2 of the TSIS-1 Hybrid Solar Reference Spectrum and Extension to the Full Spectrum, ***Earth and Space Science***, 10(3), e2022EA002637, doi:`10.1029/2022EA002637`, 2023.

56. [FireTechnol'23] <u>N. Masoudvaziri</u>, N. Elhami-Khorasani, and **K. Sun**, Toward Probabilistic Risk Assessment of WildlandUrban Interface Communities for Wildfires, ***Fire Technology***, doi:`10.1007/s10694-023-01382-y`, 2023.

55. [AMT'23a] <u>Z. Ayazpour</u>, S. Tao, D. Li, A. J. Scarino, R. E. Kuehn, and **K. Sun***, Estimates of spatially complete, observational data-driven planetary boundary layer height over the contiguous United States, ***Atmospheric Measurement Techniques***, 16, 563–580, doi:`10.5194/amt-16-563-2023`, 2023.

54. [GRL'22] **K. Sun***, Derivation of Emissions from Satellite-Observed Column Amounts and Its Application to TROPOMI NO_2 and CO Observations, ***Geophysical Research Letters***, 49, e2022GL101102, doi:`10.1029/2022GL101102`, 2022. (*Top 10% downloads of papers in GRL*)

53. [EST'22] I. Dressel, M. A. Demetillo, L. Judd, S. Janz, K. Fields, **K. Sun**, A. Fiore, B. McDonald, and S. Pusede, Daily Satellite Observations of Nitrogen Dioxide Air Pollution Inequality in New York City, New York and Newark, New Jersey: Evaluation and Application, *Environmental Science & Technology*, doi:10.1021/acs.est.2c02828, 2022.

52. [ESTL'22] T. Lee, Y. Wang, and **K. Sun**, Impact of Hurricane Ida on Nitrogen Oxide Emissions in Southwestern Louisiana Detected from Space, *Environmental Science & Technology Letters*, doi:10.1021/acs.estlett.2c00414, 2022.

51. [RS'22] Z. Cai, **K. Sun**, D. Yang, Y. Liu, L. Yao, C. Lin, and X. Liu, On-Orbit Characterization of TanSat Instrument Line Shape Using Observed Solar Spectra, *Remote Sensing*, 14(14), doi:10.3390/rs14143334, 2022.

50. [AMT'22b] **K. Sun***, M. Yousefi, C. Chan Miller, K. Chance, G. González Abad, G., I. E. Gordon, X. Liu, E. O'Sullivan, C. E. Sioris, and S. C. Wofsy, An optimal estimation-based retrieval of upper atmospheric oxygen airglow and temperature from SCIAMACHY limb observations, *Atmospheric Measurement Techniques*, 15, 3721–3745, doi:10.5194/amt-15-3721-2022, 2022.

49. [JRS'22] C. Li, X. Xu, X. Liu, J. Wang, **K. Sun**, J. van Geffen, Q. Zhu, J. Ma, J. Jin, K. Qin, Q. He, P. Xie, B. Ren, and R. C Cohen, Direct Retrieval of NO_2 Vertical Columns from UV-Vis (390–495nm) Spectral Radiances Using a Neural Network, *Journal of Remote Sensing*, doi:10.34133/2022/9817134, 2022.

48. [GCB'22] D. Pan, I. Gelfand, L. Tao, M. Abraha, **K. Sun**, X. Guo, J. Chen, G. P. Robertson, and M. A. Zondlo, A New Open-Path Eddy Covariance Method for Nitrous Oxide and Other Trace Gases that Minimizes Temperature Corrections, *Global Change Biology*, 28, 1446–1457, doi:10.1111/gcb.15986, 2022.

47. [AMT'22a] A. H. Souri, K. Chance, **K. Sun**, X. Liu, and M. S. Johnson, Dealing with spatial heterogeneity in pointwise-to-gridded-data comparisons, *Atmospheric Measurement Techniques*, 15, 41–59, doi:10.5194/amt-15-41-2022, 2022.

46. [EP'22] C. Huang, **K. Sun**, J. Hu, T. Xue, H. Xu, and M. Wang, Estimating 2013–2019 NO_2 exposure with high spatiotemporal resolution in China using an ensemble model, *Environmental Pollution*, 292, 118285, doi:10.1016/j.envpol.2021.118285, 2022.

45. [SciRep'21] Z. U. Ahmed, **K. Sun**, M. Shelly, and L. Mu, Explainable artificial intelligence (XAI) for exploring spatial variability of lung and bronchus cancer (LBC) mortality rates in the contiguous USA, *Scientific Reports*, 11(1), 24090, doi:10.1038/s41598-021-03198-8, 2021.

44. [ESTL'21] H. Cao, D. K. Henze, K. Cady-Pereira, B. C. McDonald, C. Harkins, **K. Sun**, K. W. Bowman, T.-M. Fu, and M. O. Nawaz, COVID-19 Lockdowns Afford the First Satellite-Based Confirmation That Vehicles Are an Under-recognized Source of Urban NH_3 Pollution in Los Angeles, *Environmental Science & Technology Letters*, doi:10.1021/acs.estlett.1c00730, 2021.

43. [STOTEN'21] U. DekaBaruah, S. M. Robeson, A. Saikia, N. Mili, **K. Sun**, P. Chand, Spatiotemporal characterization of tropospheric ozone and its precursor pollutants NO_2 and HCHO over South Asia, *Science of The Total Environment*, 151135, doi:10.1016/j.scitotenv.2021.151135, 2021.

42. [SERRA'21] <u>N. Masoudvaziri</u>, P. Ganguly, S. Mukherjee, S., and **K. Sun**, Impact of geophysical and anthropogenic factors on wildfire size: a spatiotemporal data-driven risk assessment approach using statistical learning, ***Stochastic Environmental Research and Risk Assessment***, doi:`10.1007/s00477-021-02087-w`, 2021.

41. [ACP'21] **K. Sun***, <u>L. Li</u>, <u>S. Jagini</u>, and D. Li, A Satellite Data-Driven Framework to Rapidly Quantify Air Basin-Scale $\overline{NO_x}$ Emission and Its Application to the Po Valley during the COVID-19 Pandemic, ***Atmospheric Chemistry and Physics***, 21, 13311–13332, doi:`10.5194/acp-21-13311-2021`, 2021.

40. [GRL'21b] M. A. G. Demetillo, C. Harkins, B. C. McDonald, P. S. Chodrow, **K. Sun**, and S. E. Pusede, Space-Based Observational Constraints on NO_2 Air Pollution Inequality From Diesel Traffic in Major US Cities, ***Geophysical Research Letters***, 48(17), e2021GL094333, doi:`10.1029/2021GL094333`, 2021.

39. [EMS'21] <u>N. Masoudvaziri</u>, F. Szasdi Bardales, O. K. Keskin, A. Sarreshtehdari, **K. Sun**, and N. Elhami-Khorasani, Streamlined wildland-urban interface fire tracing (SWUIFT): Modeling wildfire spread in communities, ***Environmental Modelling & Software***, 143, 105097, doi:`10.1016/j.envsoft.2021.105097`, 2021.

38. [EST'21] D. Pan, K. B. Benedict, L. M. Golston, R. Wang, J. L. Collett, L. Tao, **K. Sun**, X. Guo, J. Ham, A. J. Prenni, B. A. Schichtel, T. Mikoviny, M. Mller, A. Wisthaler, and M. A. Zondlo, Ammonia Dry Deposition in an Alpine Ecosystem Traced to Agricultural Emission Hotpots, ***Environmental Science & Technology***, doi:`10.1021/acs.est.0c05749`, 2021.

37. [GRL'21a] O. Coddington, E. Richard, D. Harber, P. Pilewskie, T.N. Woods, K. Chance, X. Liu, and **K. Sun**, The TSIS-1 Hybrid Solar Reference Spectrum. ***Geophysical Research Letters***, 48, e2020GL091709, doi:`10.1029/2020GL091709`, 2021.

36. [AMT'21] <u>C. Staebell</u>, **K. Sun***, J. Samra, J. Franklin, C. Chan Miller, L. Xiong, E. Conway, K. Chance, and S. Wofsy, Spectral calibration of the MethaneAIR instrument, ***Atmospheric Measurement Techniques***, 14, 3737–3753, doi:`10.5194/amt-14-3737-2021`, 2021.

35. [JGR'21] X. Guo, L. Clarisse, R. Wang, M. Van Damme, S. Whitburn, P. Coheur, C. Clerbaux, B. Franco, D. Pan, L. M. Golston, L. Wendt, **K. Sun**, L. Tao, D. Miller, T. Mikoviny, M. Mller, A. Wisthaler, A. G. Tevlin, J. G. Murphy, J. B. Nowak, J. R. Roscioli, R. Volkamer, N. Kille, J. A. Neuman, S. J. Eilerman, J. H. Crawford, T. I. Yacovitch, J. D. Barrick, A. J. Scarino, and M A. Zondlo, Validation of IASI satellite ammonia observations at the pixel scale using insitu vertical profiles. ***Journal of Geophysical Research-Atmospheres***, 126, e2020JD033475, doi:`10.1029/2020JD033475`, 2021.

34. [GRL'20] R. Wang, X Guo, D Pan, J. T. Kelly, J. O. Bash, **K. Sun**, F. Paulot, L. Clarisse, M. Van Damme, S. Whitburn, P. Coheur, C. Clerbaux, and M. A. Zondlo, Monthly patterns of ammonia over the contiguous United States at 2 km resolution. ***Geophysical Research Letters***, 47, e2020GL090579, doi:`10.1029/2020GL090579`, 2020.

33. [JGR'20] Y. Zhang, **K. Sun***, Z. Gao, Z. Pan, M. Shook, and D. Li, Diurnal climatology of planetary boundary layer height over the contiguous United States derived from AMDAR and reanalysis data, ***Journal of Geophysical Research-Atmospheres***, doi:`10.1029/2020JD032803`, 2020.

32. [NatCommun'20] D. Pan, L. Tao, **K. Sun**, L. M. Golston, D. J. Miller, T. Zhu, Y. Qing, Y. Zhang, D. L. Mauzerall, and M. A. Zondlo , Methane emissions from natural gas vehicles in China, ***Nature Communications***, 11, 4588, doi:`10.1038/s41467-020-18141-0`, 2020.

31. [EST'20b] M. A. G Demetillo, A. Navarro, K. K. Knowles, K. P. Fields, J. A. Geddes, C. R. Nowlan, S. J. Janz, L. M. Judd, J. Al-Saadi, **K. Sun**, B. C. McDonald, G. S. Diskin, and S. E. Pusede, Observing Nitrogen Dioxide Air Pollution Inequality Using High-Spatial-Resolution Remote Sensing Measurements in Houston, Texas, ***Environmental Science & Technology***, doi:`10.1021/acs.est.0c01864`, 2020.

30. [STOTEN'20] G. Huang and **K. Sun**, Non-negligible impacts of clean air regulations on the reduction of tropospheric NO_2 over East China during the COVID-19 pandemic observed by OMI and TROPOMI, ***Science of The Total Environment***, 745, 141023, doi:`10.1016/j.scitotenv.2020.141023`, 2020.

29. [EST'20a] L. Golston, D. Pan, **K. Sun**, M. Zondlo, S. Eilerman, J. Peischl, J. A. Neuman, and C. Floerchinger, Variability of ammonia and methane emissions from animal feeding operations in northeastern Colorado, ***Environmental Science & Technology***, doi:`10.1021/acs.est.0c00301`, 2020.

28. [AMT'19] J. Bak, X. Liu, **K. Sun**, K. Chance, and J.-H Kim, Linearization of the effect of slit function changes for improving OMI ozone profile retrievals, ***Atmospheric Measurement Techniques***, 12, 3777–3788, doi:`10.5194/amt-12-3777-2019`, 2019

27. [Icarus'19] T. Karman, I. E. Gordon, A. van der Avoird, Y. I. Baranov, C. Boulet, B. J. Drouin, G. C. Groenenboom, M. Gustafsson, J. Hartmann, R. L. Kurucz, L. S. Rothman, **K. Sun**, K. Sung, R. Thalman, H. Tran, E. H. Wishnow, R. Wordsworth, A. A. Vigasin, R. Volkamer, and W. J. van der Zande, Update of the HITRAN collision-induced absorption section, ***Icarus***, 328, 160–175, doi:10.1016/j.icarus.2019.02.034, 2019

26. [AMT'18] **K. Sun***, L. Zhu, K. Cady-Pereira, C. Chan Miller, K. Chance, L. Clarisse, P.-F. Coheur, G. González Abad, G. Huang, X. Liu, M. Van Damme, K. Yang, and M. Zondlo, A physics-based approach to oversample multi-satellite, multispecies observations to a common grid, ***Atmospheric Measurement Techniques***, 11, 6679–6701, doi:`10.5194/amt-11-6679-2018`, 2018.

25. [GRL'18] **K. Sun***, I. Gordon, C. Sioris, X. Liu, K. Chance, and S. Wofsy, Reevaluating the use of O_2 $a^1\Delta_g$ band in spaceborne remote sensing of greenhouse gases, ***Geophysical Research Letters***, 45, 5779–5787, doi:`10.1029/2018GL077823`, 2018.

24. [JGR'18] J. Kelly, C. Parworth, Q. Zhang, D. Miller, **K. Sun**, M. Zondlo, K. Baker, A. Wisthaler, J. Nowak, S. Pusede, R. Cohen. A. Weinheimer, A. Beyersdorf, G. Tonnesen, J. Bash, L. Valin, J. Crawford, A. Fried, and J. Walega, Modeling NH_4NO_3 over the San Joaquin Valley during the 2013 DISCOVER-AQ campaign, ***Journal of Geophysical Research-Atmospheres***, 123, 4727–4745. doi:`10.1029/2018JD028290`, 2018.

Peer-reviewed Publications before joining UB

23. [AMT'17a] **K. Sun***, X. Liu, G. Huang, G. González Abad, Z. Cai, K. Chance, and K. Yang, Deriving the slit functions from OMI solar observations and its implications for ozone-profile retrieval, ***Atmospheric Measurement Techniques***, 10, 3677–3695, doi:10.5194/amt-10-3677-2017, 2017.

22. [AMT'17b] J. Bak, X. Liu, J. Kim, D. Haffner, K. Chance, K. Yang, and **K Sun**, Characterization and Correction of OMPS Nadir Mapper Measurements for Ozone Profile Retrievals, ***Atmospheric Measurement Techniques***, 10, 4373–4388, doi:10.5194/amt-10-4373-2017, 2017.

21. [AMT'17c] **K. Sun***, X. Liu, C. Nowlan, Z. Cai, K. Chance, C. Frankenberg, R. Lee, R. Pollock, R. Rosenberg, and D. Crisp, Characterization of the OCO-2 instrument line shape functions using on-orbit solar measurements, ***Atmospheric Measurement Techniques***, 10, 939–953, doi:10.5194/amt-10-939-2017, 2017.

20. [EST'17] **K. Sun**, L. Tao, D. Miller, D. Pan, L. Golston, M. Zondlo, R. Griffin, H. Wallace, Y. Leong, M. Yang, Y. Zhang, D. Mauzerall, and T. Zhu, Vehicle emissions as an important urban ammonia source in the United States and China, ***Environmental Science & Technology***, 51, 2472–2481, doi:10.1021/acs.est.6b02805, 2017.

19. [AMT'17d] D. Crisp, R. Pollock, R. Rosenberg, L. Chapsky, R. Lee, F. Oyafuso, C. Frankenberg, C. O'Dell, C. Bruegge, G. Doran, A. Eldering, B. Fisher, D. Fu, M. Gunson, L. Mandrake, G. Osterman, **K. Sun**, T. Taylor, P. Wennberg, and D. Wunch, The on-orbit performance of the Orbiting Carbon Observatory-2 (OCO-2) instrument and its radiometrically calibrated products, ***Atmospheric Measurement Techniques***, 10, 59–81, doi:10.5194/amt-10-59-2017, 2017.

18. [ACP'16] D. Jacob, A. Turner, J. Maasakkers, J. Sheng, **K. Sun**, X. Liu, K. Chance, I. Aben, J. McKeever, and C. Frankenberg, Satellite observations of atmospheric methane and their value for quantifying methane emissions, ***Atmospheric Chemistry and Physics***, 16, 14371–14396, doi:10.5194/acp-16-14371-2016, 2016.

17. [JAOT'16] A. Michel, D. Miller, **K. Sun**, L. Tao, L. Stanton, and M. Zondlo, Long-Path Quantum Cascade Laser-Based Sensor for Methane Measurements, ***Journal of Atmospheric and Oceanic Technology***, 33, 2373–2384, doi:10.1175/JTECH-D-16-0024.1, 2016.

16. [AFM'15] **K. Sun**, L. Tao, D. Miller, M. Zondlo, K. Shonkwiler, N, Christina, and J. Ham, Open-path eddy covariance measurements of ammonia fluxes from a beef cattle feedlot, ***Agricultural and Forest Meteorology***, 213, 193–202, doi:10.1016/j.agrformet.2015.06.007, 2015.

15. [BLM'15] **K. Sun**, D, Li, L. Tao, Z. Zhao, and M. Zondlo, Quantifying the influence of random errors in turbulence measurements on scalar similarity in the atmospheric surface layer, ***Boundary-Layer Meteorology***, 157, 61–80, doi:10.1007/s10546-015-0047-3, 2015.

14. [JGR'15a] **K. Sun**, K. Cady-Pereira, D. Miller, L. Tao, M. Zondlo, J. Nowak, J. A. Neuman, T. Mikoviny, M. Müller, A. Wisthaler, A. J. Scarino, and C. Hostetler, Validation of TES ammonia observations at the single pixel scale in the San Joaquin Valley during DISCOVER-AQ, ***Journal of Geophysical Research-Atmospheres***, 120, 5140–5154, doi:10.1002/2014JD022846, 2015.

13. [RS'15] R. Meng, F. Zhao, **K. Sun**, R. Zhang, C. Huang, and J. Yang, Analysis of the 2014 "APEC Blue" in Beijing and the surrounding area from multi-source observations, ***Remote Sensing***, 7, 15224–15243, doi:10.3390/rs71115224, 2015.

12. [JGR'15b] D. Miller, **K. Sun**, L. Tao, M. Zondlo, J. Nowak, Z. Liu, G. Diskin, G. Sachse, A. Beyersdorf, R. Ferrare, and A. Scarino, Ammonia and methane dairy emissions in the San Joaquin Valley of California from individual feedlot to regional-scale plumes, ***Journal of Geophysical Research-Atmospheres***, 120, 9718–9738, doi:10.1002/2015JD023241, 2015.

11. [APB'15] L. Tao, **K. Sun**, D. J. Miller, D. Pan, L. M. Golston and M. A. Zondlo, Low-power mobile sensing platform with multiple open-path gas sensors, ***Applied Physics B: Lasers and Optics***, 119, 153–164, doi:10.1007/s00340-015-6069-1, 2015.

10. [EST'14] **K. Sun**, L. Tao, D. Miller, M. Khan, and M. Zondlo, On-road ammonia emissions characterized by mobile, open-path measurements, ***Environmental Science & Technology***, 48, 3943–3950, doi:10.1021/es4047704, 2014.

9. [AMT'14] D. Miller, **K Sun**, L. Tao, M. Khan, and M. Zondlo, Open-path, quantum cascade laser-based sensor for high resolution atmospheric ammonia measurements, ***Atmospheric Measurement Techniques***, 7, 81–93, doi:10.5194/amt-7-81-2014, 2014.

8. [APB'13] **K. Sun**, L. Tao, D. Miller, M. Khan, and M. Zondlo, Inline multi-harmonic calibration method for open-path atmospheric ammonia measurements, ***Applied Physics B: Lasers and Optics***, 110, 213-222, doi:10.1007/s00340-012-5231-2, 2013.

7. [EST'13] H. Shen, Y. Huang, R. Wang, D. Zhu, W. Li, G. Shen, B. Wang, Y. Zhang, Y. Chen, Y. Lu, H. Chen, T. Li, **K. Sun**, B. Li, W. Liu, J. Liu, and S. Tao, Global atmospheric emissions of polycyclic aromatic hydrocarbons from 1960 to 2008 and future predictions, ***Environmental Science & Technology***, 47, 6415–6424, doi:10.1021/es400857z, 2013.

6. [OE'12] L. Tao, **K. Sun**, M. A. Khan, D. J. Miller, and M. A. Zondlo, Compact and portable open-path sensor for simultaneous measurements of atmospheric N_2O and CO using a quantum cascade laser, ***Optics Express***, 20, 28106–28118, doi:10.1364/OE.028106, 2012.

5. [OL'12] L. Tao, **K. Sun**, D. J. Miller, M. A. Khan, and M. A. Zondlo, Current and frequency modulation characteristics for continuous-wave quantum cascade lasers at 9.06 μ m, ***Optics Letters***, 8, 1358–1360, doi:10.1364/OL.37.001358, 2012.

4. [EST'12] M. Hu, J. Peng, **K. Sun**, D. Yue, S. Guo, A. Wiedensohler, and Z. Wu, Estimation of size-resolved ambient particle density based on the measurement of aerosol number, mass, and chemical size distributions in the winter in Beijing, ***Environmental Science & Technology***, 46, 9941–9947, doi:10.1021/es204073t, 2012.

3. [RS'12] A. Khan, D. Schaefer, L. Tao, D. J. Miller, **K. Sun**, M. A. Zondlo, W. A. Harrison, B. Roscoe, and D. J. Lary, Low power greenhouse gas sensors for unmanned aerial vehicles, ***Remote Sensing***, 4, 1355–1368, doi:10.3390/rs4051355, 2012.

2. [JGR'11] D. J. Miller, **K. Sun**, M. A. Zondlo, D. Kanter, O. Dubovik, E. J. Welton, D. M. Winker, and P. Ginoux, Assessing boreal forest fire smoke aerosol impacts on U.S. Air quality: A case study using multiple data sets, ***Journal of Geophysical Research-Atmospheres***, 116, D22209, doi:10.1029/2011JD016170, 2011.

1. [AE'11] H. Shen, S. Tao, R. Wang, B. Wang, G. Shen, W. Li, S. Su, Y. Huang, X. Wang, W. Liu, B. Li, and **K. Sun**, Global time trends in PAH emissions from motor vehicles, ***Atmospheric Environment***, 45, 2067–2073, doi:10.1016/j.atmosenv.2011.01.054, 2011.

TECHNICAL PRESENTATIONS

<u>Invited Talks</u>

27. **K. Sun**, Accurate and timely quantification of air pollution sources by satellites, Department of Chemistry Seminars, SUNY College of Environmental Science and Forestry, Syracuse, NY, 04/2025.

26. **K. Sun**, A Unified Framework to Derive Emissions from Satellite-Observed Column Amounts, Environmental Fluid Mechanics and Hydrology Seminars, Cornell University, Ithaca, NY, 10/2022.

25. **K. Sun**, Observational data-driven constraints on the emissions and lifetimes of reactive nitrogen, invited talk at NADP Total Deposition Science Committee (TDep) agricultural workshop, Boulder, CO, 11/2019.

24. **K. Sun**, A Tale of Two Molecules: NH_3 and CH_4, Atmospheric & Environmental Chemistry Seminars, Harvard University, Cambridge, MA, 10/2019.

23. **K. Sun**, Tackle grand environmental challenges through atmospheric observations and modeling, Research seminar at Institute of Atmospheric Physics, Chinese Academy of Sciences, Beijing, China, 03/2017.

22. **K. Sun**, Observing air quality and the climate at the molecular and global level, Southern University of Science and Technology Global Scientist Forum, Shenzhen, China, 03/2017.

Conference Oral Presentations

21. **K. Sun**, Estimating Emissions and Near-Surface Concentrations of Short- and Long-Lived Atmospheric Species From Satellite Observations Using the Directional Derivative Approach, Oral presentation in AMS Annual Meeting, Baltimore, MD, 02/2024.

20. **K. Sun**, A Satellite Data-Driven Framework to Quantify Sources and Lifetimes of Atmospheric Pollutants and the Emission Response to the COVID-19 Pandemic, Oral presentation in AGU Fall Meeting, 12/2020.

19. **K. Sun** and D. Li, Observational Data-Driven Surface Concentration Derived from Satellite Columns, Oral presentation in AMS Annual Meeting, Boston, MA, 01/2020.

18. **K. Sun**, X. Lan, C. Sweeney, and Y. Zhang, Methane enhancements and hotspot emissions over the CONUS revealed by oversampling TROPOMI data, Oral presentation in AGU Fall Meeting, San Francisco, CA, 12/2019.

17. **K. Sun**, Observation-based, spatial-resolved surface concentrations and their implications for emission and deposition estimation, NADP 2019 Fall Meeting, Boulder, CO, 11/2019.

16. **K. Sun**, Deriving surface concentrations from TEMPO columns and vertical profile shapes based on DISCOVER-AQ, 2019 TEMPO Science Team Meeting, Madison, WI, 06/2019.

15. **K. Sun**, Reevaluating the use of O_2 $a^1\Delta_g$ band in spaceborne remote sensing of greenhouse gases, 15th International HITRAN Biennial Conference, Cambridge, MA, 06/2018.

14. **K. Sun**, Quantifying urban nitrogen emission and deposition through optical sensing techniques, invited talk at NADP 2017 Fall Meeting, San Diego, CA, 10/2017.

13. **K. Sun**, High-resolution mapping of air pollution by oversampling satellite observations, Gordon Research Conference (GRC) in Atmospheric Chemistry, Newry, ME, 08/2017.

12. **K. Sun**, Constraining atmospheric ammonia emissions through novel observations, ACCESS XIV, 14th Atmospheric Chemistry Colloquium for Emerging Senior Scientists, Brookhaven National Laboratory, NY, 07/2017.

11. **K. Sun**, X. Liu, Z. Cai, G. Huang, G. González Abad, K. Yang, and K. Chance, Deriving the Instrument Transfer Function from OMI solar observations and its implications for ozone retrievals, Oral presentation in AGU Fall Meeting, San Francisco, CA, 12/2016.

10. **K. Sun**, X. Liu, G. González Abad, Z. Cai, C. Nowlan, K. Yang, and K. Chance, What solar measurements can tell about instrument transfer function—Lessons learned from OMI and OCO-2, Oral presentation in Aura Science Team Meeting, Rotterdam, Netherlands, 08/2016.

9. **K. Sun**, Observation and inverse modeling of atmospheric methane and ammonia in China, Chinese Environmental Scholars Forum 2016, Princeton, NJ, 06/2016.

8. **K. Sun**, L. Tao, D. J. Miller, M. A. Zondlo, K. Cady-Pereira, J. Nowak, A. Wisthaler, T. Jones, J. Chen, J. Budney, S. Wofsy, X. Liu, and K. Chance, Validating satellite NH_3 and CO_2 at the pixel scale using portable, ground-based sensors, Oral presentation in Joint ACE-Odin Science Team Meeting, Toronto, Canada, 10/2015.

7. **K. Sun**, L. Tao, D. J. Miller, D. Pan, L. Golston, Y. Tian, J. Hu, M. Huang, T. Wang, and M. A. Zondlo, Quantifying reactive nitrogen emissions using open-path, quantum cascade laser-based sensors, Oral presentation in CLEO: Applications and Technology, San Jose, CA, 05/2015.

6. **K. Sun**, L. Tao, D. J. Miller, D. Pan, L. Golston, K. Cady-Pereira, C. Clerbaux, P. Coheur, M. Van Damme, J. Nowak, A. Wisthaler, and M. A. Zondlo, Validation of satellite ammonia retrievals using ground-based mobile measurements, Oral presentation in NASA Sounder Science Team Meeting, Greenbelt, MD, 09/2014.

5. **K. Sun**, L. Tao, D. J. Miller, and M. A. Zondlo, On-road measurements from mobile, open-path sensors and intercomparisons with satellite, Oral presentation in Field Laser Applications in Industry and Research (FLAIR), Florence, Italy, 05/2014.

4. **K. Sun**, L. Tao, D. J. Miller, and M. A. Zondlo, Spatial and temporal variations of atmospheric ammonia in Houston during DISCOVER-AQ Texas, Oral presentation in DISCOVER-AQ Science Team Meeting, NASA LaRC, Hampton, VA, 02/2014.

3. **K. Sun**, L. Tao, D. J. Miller, M. A. Khan, and M. A. Zondlo, Mapping atmospheric NH_3 emissions using a mobile open-path sensor, Oral presentation in AGU Fall Meeting, San Francisco, CA, 12/2012.

2. **K. Sun**, L. Tao, D. J. Miller, M. A. Khan, and M. A. Zondlo, Novel in-situ calibrations for open-path ammonia sensing, Oral presentation in CLEO: Applications and Technology, San Jose, CA, 05/2012.

1. **K. Sun**, M. A. Khan, J. M. David, K. Rafferty, J. Schreiber, C. Puzio, M. Portenti, J. Silver, and A. Z. Mark, Open-path atmospheric N_2O, CO, and NH_3 measurements using quantum cascade laser spectroscopy, Oral presentation in AGU Fall Meeting, San Francisco, CA, 12/2010.

POST-DOCTORAL RESEARCH ASSOCIATES

1. Mahdi Yousefi Atashgah (Physics, Old Dominion University, Ph.D. 2020), Postdoctoral Research Associate.
Responsible for investigating surface concentrations derived from satellite column observations and retrieving airglow/temperature from space-borne limb observations of the Earth.
Jul 2020 – May 2022

GRADUATE STUDENTS

Dissertations/Theses Directed (as major professor unless otherwise indicated)

Ph.D. degrees

1. Zolal Ayazpour, Ph.D., May 2019 – June 2025, "Satellite Data-Based Quantification of Column Amounts, Emissions, and Surface Concentrations of Atmospheric Pollutants".

2. Chantelle Lonsdale, Ph.D., January 2021 – February 2025, "Investigating Emissions of Urban and Agricultural Atmospheric Nitrogen: From Bottom-up to Top-down Approaches".

3. Nima Masoudvaziri, Ph.D., May 2018 – May 2022, "Toward Quantified Risk Assessment of Wildland-Urban Interface Communities for Wildfires", working at Berkshire Hathaway Specialty Insurance.

M.S. degrees (theses/projects)

1. Lingbo Li, M.S., Jun 2020 – Jan 2021, "A Satellite Data-Driven Framework to Rapidly Quantify Air Basin-Scale NO_x Emission and Its Application to the Po Valley during the COVID-19 Pandemic", now Ph.D. student at University of Houston.

Dissertations/Theses in Progress

1. Fuad Bin Nazrul, Ph.D., August 2025 – present, degree expected June 2030

2. Jobaer Ahmed Saju, Ph.D., August 2024 – present, degree expected June 2029

3. Ayesha Riaz, Ph.D., August 2023 – present, degree expected June 2028

Special Achievements of Graduate Students

1. Ayesha Riaz, First place of CSEE Poster Competition, November 2025

2. Jobaer Ahmed Saju, Recipient of NASA FINESST (Future Investigators in NASA Earth and Space Science and Technology), June 2025

3. Zolal Ayazpour, Recipient of Graduate Research Award of CSEE department, May 2025

4. Ayesha Riaz, Recipient of Graduate School Fellowship, August 2023

5. Nima Masoudvaziri, Recipient of Graduate Research Award of CSEE department, April 2022

6. Zolal Ayazpour, Recipient of Robert P. Apmann Memorial Award of CSEE department, May 2020

Dissertations/Theses Committee Member

1. Fernando Jose Szasdi Bardales, Department of Civil, Structural and Environmental Engineering, University at Buffalo, Ph.D., June 2025

2. Mahdi Hodaeiesfahani, Department of Civil, Structural and Environmental Engineering, Ph.D. degree expected 2025

3. Qiang Pu, Department of Geography, Ph.D., January 2023

4. Xiangyu Jiang, Department of Geography, Ph.D., May 2020

5. Fernando Jose Szasdi Bardales, Department of Civil, Structural and Environmental Engineering, University at Buffalo, M.S., May 2019

6. Daniel Moore (external dissertation reader), Princeton University, Ph.D., February 2024

Ph.D. Qualifying Exam Committee Member

1. Aliana Wolf, Department of Civil, Structural and Environmental Engineering, University at Buffalo, November 2025

2. Linyue Luo, Department of Civil, Structural and Environmental Engineering, University at Buffalo, October 2025

3. Hossein Molla Nadali Pishnamaz, Department of Civil, Structural and Environmental Engineering, University at Buffalo, July 2025

4. Siavash Mohamadi, Department of Civil, Structural and Environmental Engineering, University at Buffalo, November 2023

5. Fernando Jose Szasdi Bardales, Department of Civil, Structural and Environmental Engineering, University at Buffalo, October 2022

6. Mahdi Hodaeiesfahani, Department of Civil, Structural and Environmental Engineering, University at Buffalo, March 2022

7. Zachary Kralles, Department of Civil, Structural and Environmental Engineering, University at Buffalo, October 2021

8. Md Mahbubul Alam, Department of Civil, Structural and Environmental Engineering, University at Buffalo, October 2020

9. Hamed Khorasani, Department of Civil, Structural and Environmental Engineering, University at Buffalo, September 2019

10. Yilan Li, Department of Civil, Structural and Environmental Engineering, University at Buffalo, September 2019

UNIVERSITY SERVICE

Department Committees

1. Member, CSEE Graduate Studies Committee, August 2023–present

2. Member, EWRE Teaching Faculty Search Committee, August 2023–April 2024

3. Member, EWRE Teaching Faculty Search Committee, September 2022–November 2022

4. Coordinator, EWRE seminar series, Spring 2022

5. Member, CSEE Program Specialist Search Committee, February 2022–June 2022

6. Member, EWRE Program Promotion Committee, September 2021–December 2022

PROFESSIONAL ACTIVITIES

Member, American Geophysical Union, 2010–present

Member, Optical Society of America, 2011–present

Member, American Meteorological Society, 2017–present

Proposal reviewer for NOAA Atmospheric Chemistry, Carbon Cycle & Climate (AC4) program, NASA Research Opportunities in Space and Earth Science (ROSES) programs, and NSF Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) program

Reviewer for *Journal of Geophysical Research-Atmospheres*, *Atmospheric Chemistry and Physics*, *Atmospheric Measurement Techniques*, *Environmental Science & Technology*, *Environmental Science & Technology Letters*, *Environmental Research Letters*, *Atmospheric Environment*, *Remote Sensing of Environment*, *Journal of Hazardous Materials Journal of Quantitative Spectroscopy & Radiative Transfer*, *Optics Communications*, *Journal of Applied Remote Sensing*, *Chinese Optics Letters*, *International Journal of Remote Sensing*, *Sensors*, *Atmosphere*, *Remote Sensing*, *Atmosphere - Ocean*, *Science of the Total Environment*, *Environmental Science and Pollution Research*, *Earth-Science Reviews*

Reviewer for the European Space Agency Sentinel-5 satellite CH_4/CO Level 2 product algorithm theoretical basis document (ATBD)

MEDIA REPORTS

New York Times, "Why does the wildfire smoke sometimes smell like burning plastic?", June 29, 2023, `https://www.nytimes.com/2023/06/29/us/wildfire-smoke-burning-plastic-smell.html`

Feature, UBNow, "UB engineer awarded NASA grant to study COVID-19 air pollution impact", May 21, 2020, `http://www.buffalo.edu/ubnow/stories/2020/05/nasa-grant-covid-air-pollution.html`

Feature, NASA's Earth Science News, "NASA Funds Four Research Projects on COVID-19 Impacts", May 13, 2020, `https://www.nasa.gov/feature/goddard/2020/nasa-funds-four-research-projects-on-covid-19-impacts`

Feature, UBNow, "NASA-funded study aims to map air pollution in front of our faces", August 2, 2019, `http://www.buffalo.edu/news/releases/2019/07/033.html`

Smithsonian Astrophysical Observatory science update, "Modeling Exoplanet Atmospheres", July 19, 2019, `https://www.cfa.harvard.edu/news/su201928`

Feature, NASA Earth Observatory Image of the Day, "The Seasonal Rhythms of Ammonia", December 10, 2018, `https://earthobservatory.nasa.gov/images/144351/the-seasonal-rhythms-of-ammonia`.

Feature, Princeton homepage, "Vehicles, not farms, are likely source of smog-causing ammonia", March 30, 2017, `http://www.princeton.edu/main/news/archive/S49/08/77C66/?section=topstories`.

Feature, *Research at Princeton*, "Portable sensors measure air pollutants", November 19, 2013, `http://www.princeton.edu/research/invention/archive/archive/?id=11578`.

Press release, NASA, September 25, 2013: "Mobile laboratories measure air quality in Houston", `http://www.nasa.gov/mission_pages/discover-aq/news/mobile-laboratories-measure-air-quality-in-houston/#.VFzbWfnF-kL`.

Feature, Princeton SEAS homepage, "Innovation forum business perspective to research", March 15, 2013, `http://www.princeton.edu/engineering/news/archive/?id=9872`.

Feature, *Fondriest Environmental Monitor*, "Mobile air sensor lab takes a California road trip", February 27, 2013, `http://www.fondriest.com/news/mobile-air-sensor-lab-takes-a-california-road-trip.htm`.

Feature, Princeton homepage, "Fund bridges gap between lab and marketplace", January 24, 2013, `http://www.princeton.edu/main/news/archive/S35/89/52G24/index.xml?section=topstories`.