JOHN CHUN-HAN LIN
Curriculum Vitae
http://home.chpc.utah.edu/~lin/

University of Utah   *(801)581-7530 (PHONE)*
Dept. of Atmospheric Sciences   *(801)585-3681 (FAX)*
Salt Lake City, UT, 84112, USA   *Email:* John.Lin@utah.edu

Employment

Associate Director, Wilkes Center for Climate Science & Policy, University of Utah, 2022-.

Professor, Dept. of Atmospheric Sciences, University of Utah, 2018-.

Visiting Professor, Dept. of Atmospheric Sciences, National Taiwan University, 2019-2020.

Associate Professor, Dept. of Atmospheric Sciences, University of Utah, 2012-2018.

Assistant/Associate Professor, Dept. of Earth & Environmental Sciences, University of Waterloo, 2008-2012.

National Military Service, Air Force of Taiwan, 2007-2008.

Assistant Professor, Dept. of Earth & Environmental Sciences, University of Waterloo, 2006-2007.

UCAR/NOAA Postdoctoral Fellow in Climate and Global Change, Colorado State University, 2005-2006.

Graduate Research Assistant, Dept. of Earth & Planetary Science, Harvard University, 1997-2003.

Professional Experience

European Union Integrated Carbon Observation System Cities Science Advisory Board, 2022-.

World Meteorological Organization Integrated Global Greenhouse Gas Information System (IG^{3}IS) Science Team member, 2018-.

National Sciences and Engineering Research Council of Canada Geosciences Evaluation Group, 2021-2022.

North American Carbon Program Science Leadership Group member, 2016-2021.

NASA Carbon Monitoring System (CMS) Science Team Member, 2016-.

NASA Orbiting Carbon Observatory (OCO-2) Science Team Member, 2012-.

Member of University of Utah's Global Change & Sustainability Center, 2012-.

Editorial Board Member for *Nature Scientific Reports*, 2011-2017.

Lead Convener for American Geophysical Union's Chapman Conference: *Advances in Lagrangian Modeling of the Atmosphere*, (Grindelwald, Switzerland), Oct. 2011.

Founding member of the Univ. of Waterloo Interdisciplinary Centre on Climate Change, 2008.

Science Committee Member, Canadian Carbon Program, 2006-2011.

North American Carbon Program (contributing author), 2001-2003.

Education

Harvard University	Ph.D. (Earth & Planetary Sciences)	2003	Cambridge, MA, USA
Harvard University	A.M. (Biology)	1997	Cambridge, MA, USA
Harvard College	A.B. (Biology)	1997	Cambridge, MA, USA

Awards/Honors

Fellow of Earth Leadership Program (formerly the Leopold Leadership Program), 2022.

Anthem Bronze Award in Sustainability, Environment and Climate Awareness, as collaborator in Artivism for Earth, 2022.

University of Utah Top Researcher Award, 2017.

Ontario Early Researcher Award, 2008.

NOAA Postdoctoral Fellowship in Climate and Global Change, 2004.

National Center for Atmospheric Research Postdoctoral Fellowship (declined), 2004.

Harvard University Distinction in Teaching Award, 2002.

NASA Earth System Science Fellowship, 1998-2001.

Teaching Experience

Instructor for "*Scientific Writing and Oral Presentation*", 2017-.   University of Utah

Instructor for "*Land-Atmosphere Interactions*", 2013-.   University of Utah

Instructor for "*Atmospheric Chemistry and Air Pollution*", 2015-2022.   University of Utah

Instructor for "*Climate Change*", 2021.   University of Utah

Instructor for "*Intro. to Atmospheric Science*", 2013.   University of Utah

Instructor for "*Environmental Informatics*", 2010-2012.   University of Waterloo

Instructor for "*Atmospheric Motion and Physics*", 2009-2012.   University of Waterloo

Instructor for "*Intro. to Atmospheric Science*", 2008-2012.   University of Waterloo

Mentor in Research Experience for Teachers (RET) program, National Science Foundation, 2004-2005.

Teaching Fellow for "*Environmental Risks and Disasters*", 2001.   Harvard University

Teaching Fellow for "*The Atmosphere*", 1998.   Harvard University

Peer-Reviewed Publications
(<u>underline</u> below first author's name indicates first author was member of Lin's research group)

Submitted

116. Lee, C., T. Eligar, L. David, T. Wilmot, M. Reza, N. Hirshorn, I. McCubbin, V. Shah, **J.C. Lin**, S. Lyman, A.G. Hallar, L. Gratz, and R. Volkamer, Elevated Tropospheric Iodine over the Central Continental United States: Is Iodine a Major Oxidant of Atmospheric Mercury?, Submitted.

115. <u>Gonzalez, A.</u>, D. Mallia, **J.C. Lin**, L. Mitchell, T. Wilmot, M. Sghiatti, and N. Daher, Examining the sensitivity of ozone to NOx and VOCs in the Salt Lake City urban region from spatiotemporal patterns observed using stationary and mobile observations collected from a light-rail public transit platform, Submitted.

114. Grineski, S., D. Mallia, T.Collins, **J.C. Lin**, W. R. L. Anderegg, M. Araos, and K. Perry, Harmful dust from the Great Salt Lake: Stabilizing water levels would reduce $PM_{2.5}$ and exposure disparities, Submitted.

113. Yanez, Cindy, Ryan Bares, Claudia Czimczik, **J.C. Lin**, S. Bush, and Francesca Hopkins, Policy-driven improvements in vehicle combustion efficiency abated by traffic speed and gross polluters, Submitted.

112. Tsai, Chieh-Sen, Ping-Chieh Huang, Hsin-Chih Lai, **J.C. Lin**, and Hui-Ming Hung, Addressing Uncertainties in Emission Sources: An Analysis of Carbon Monoxide Simulation in Taiwan, Submitted.

111. <u>Wilmot, T.Y.</u>, **J.C. Lin**, D. Wu, T. Oda, and E. A. Kort, Toward a satellite-based monitoring system for urban CO_2 emissions in support of emission reduction targets, Submitted.

110. J.H. Davison, H.-T. Hwang, E.A. Sudicky, D.V. Mallia, and **J.C. Lin**, Hydrological Analysis of the California Basin Model, Submitted.

Published or Accepted

109. Kunik, L., D. R. Bowling, B. Raczka, C. Frankenberg, P. Köhler, R. Cheng, K. R. Smith, M. Goulden, M. Jung, and **J.C. Lin**, Satellite-based solar-induced fluorescence tracks seasonal and elevational patterns of photosynthesis in California's Sierra Nevada mountains, **19**, 014008, https://doi.org/10.1088/1748-9326/ad07b4, 2024.

108. D. Roten, **J.C. Lin**, Das, S., and E.A. Kort, Constraining Sector-specific CO_2 Fluxes using Space-based XCO_2 Observations over the Los Angeles Basin, *Geophysical Research Letters,* 50, e2023GL104376. https://doi.org/10.1029/2023GL104376, 2023.

107. Wu, D., J. L. Laughner, J. Liu, P. I. Palmer, **J.C. Lin**, and P.O. Wennberg, A simplified non-linear chemistry transport model for analyzing NO_2 column observations: STILT–NO_x, https://doi.org/10.5194/egusphere-2023-876, 2023.

106. Lin, J.C., B. Fasoli, L. Mitchell, R. Bares, F. Hopkins, T.M. Thompson, and R.A. Alvarez, Towards hyperlocal source identification of pollutants in cities by combining mobile measurements with atmospheric modeling, *Atmospheric Environment*, 311, 119995, https://doi.org/10.1016/j.atmosenv.2023.119995, 2023.

105. Mallia, D.V., L. Mitchell, A. Vidal, D. Wu, L. Kunik, and **J.C. Lin**, Can we detect urban-scale CO_2 emission changes within medium-sized cities?, *Journal of Geophysical Research: Atmospheres,* 128, e2023JD038686. https://doi.org/10.1029/2023JD038686, 2023.

104. Yang, E., E. Kort, L. Ott, T. Oda, and **J.C. Lin**, Using Space-Based CO_2 and NO_2 Observations to Estimate Urban CO_2 Emissions, *Journal of Geophysical Research: Atmospheres*, 128(6), e2022JD037736, 2023.

103. Womack, C., et al.: Mid-latitude ozone depletion and air quality impacts from industrial halogen emissions in the Great Salt Lake Basin, *Environmental Science & Technology*, https://doi.org/10.1021/acs.est.2c05376, 2023.

102. Roten, D., **J.C. Lin**, L. Kunik, D. Mallia, D. Wu, T. Oda, and E.A. Kort: The Information Content of Dense Carbon Dioxide Measurements from Space: A High-Resolution Inversion Approach with Synthetic Data from the OCO-3 Instrument, *Atmos. Chem. Phys. Discuss.*, https://doi.org/10.5194/acp-2022-315, 2022.

101. Wilmot, T., C., D.V. Mallia, A.G. Hallar, and **J.C. Lin**: Wildfire activity is driving summertime air quality degradation across the Western US: A model-based attribution to smoke source regions, *Environmental Research Letters*, https://doi.org/10.1088/1748-9326/ac9a5d, 17, 114014, 2022.

100. Wilmot, T., D. Mallia, A.G. Hallar, and **J.C. Lin**: Wildfire plumes in the Western US are reaching greater heights and injecting more aerosols aloft as wildfire activity intensifies, *Scientific Reports*, https://doi.org/10.1038/s41598-022-16607-3, 2022.

99. Monteiro, V., N.L. Miles, S.J. Richardson, J. Turnbull, A. Karion, J. Kim, K. Verhulst, L. Mitchell, **J. C. Lin**, M. Sargent, S. Wofsy, F. Vogel, and K.J. Davis: The impact of the COVID-19 lockdown on greenhouse gases: a multi-city analysis of in situ atmospheric observations, *Environmental Research Communications*, 4, 41004, https://doi.org/10.1088/2515-7620/ac66cb, 2022.

98. Mitchell, L., **J.C. Lin**, L. Hutyra, R.C. Cohen, K. Davis, et al.: A Multi-City Atmospheric Greenhouse Gas Measurement Data Product, *Nature Scientific Data*, **9**, 361, https://doi.org/10.1038/s41597-022-01467-3, 2022.

97. Sim, S., H. Lee, E. Oh, S. Kim, P. Ciais, S. Piao, **J.C. Lin**, D.V. Mallia, S. Lee, Y.-H. Kim, H. Park, S. Jeong: Short-term reduction of regional enhancement of atmospheric CO_2 in China during the first COVID-19 pandemic period, *Environmental Research Letters*, 17, 024036, 2022.

96. Duarte, H.F., B.M. Raczka, D.R. Bowling, A. Wang, P.C. Buotte, and **J.C. Lin**: How can biosphere models simulate enough vegetation biomass in the mountains of the western United States? Implications of meteorological forcing, *Environmental Modelling and Software*, https://doi.org/10.1016/j.envsoft.2021.105288, 2022.

95. Lin, J.C., R. Bares, B. Fasoli, M. Garcia, E. Crosman, and S. Lyman: Declining Methane Emissions and Steady, High Leakage Rates Observed over Multiple Years in a western U.S. Oil/Gas Production Basin, *Scientific Reports*, **11,** 22291. https://doi.org/10.1038/s41598-021-01721-5, 2021.

94. Luo, Y., M.A. Mischna, **J.C. Lin**, B. Fasoli, X. Cai, and Y.L. Yung: Back-Trajectory Modeling Favors Mars Methane Sources Inside Gale Crater, *Earth and Space Science*, 8, e2021EA001915. https://doi.org/10.1029/2021EA001915, 2021.

93. Follstad Shah, J., R. Bares, B.B. Bowen, G. J. Bowen, D.P. Eiriksson, A.G. Hallar, J.D. Horel, S.J. Hinners, L.R. Jamison, **J.C. Lin**, et al.: The Wasatch Environmental Observatory: A mountain to urban research network in the semi-arid Western US, *Hydrological Processes*, 35(9), e14352. https://doi.org/10.1002/hyp.14352, 2021.

92. Hallar, A.G., S. Brown, C. Cappa, J. Murphy, **J.C. Lin**, et al.: Coupled Air Quality and Boundary-Layer Meteorology in Western U.S. Basins during Winter: Design and Rationale for a Comprehensive Study, *Bulletin of the American Meteorological Society*, https://doi.org/10.1175/BAMS-D-20-0017.1, 2021.

91. Lei, R., S. Feng, A. Danjou, G. Broquet, D. Wu, **J.C. Lin**, Chris O'Dell, and Thomas Lauvaux: Urban CO_2 emissions from space over a fast-growing metropolitan area: a multi-model analysis with OCO-2 data over Lahore, Pakistan, *Remote Sensing of the Environment*, 264, 112625, https://doi.org/10.1016/j.rse.2021.112625, 2021.

90. Raczka, B., T. Hoar, H. Duarte, A. Fox, J. Anderson, D. Bowling, and **J.C. Lin**: Improving CLM5.0 Biomass and Carbon Exchange across the Western US Using a Data Assimilation System, *Journal of Advances in Modeling Earth Systems (JAMES)*, 13, e2020MS002421. https://doi.org/10.1029/2020MS002421, 2021.

89. Wilmot, T., A.G. Hallar, **J.C. Lin**, and D. Mallia: Expanding number of Western US urban centers face declining summertime air quality due to enhanced wildland fire activity, *Environmental Research Letters*, 16(5), https://doi.org/10.1088/1748-9326/abf966, 2021.

88. Loughner, C., B. Fasoli, A.F. Stein, and **J.C. Lin**: Incorporating features from the Stochastic Time-Inverted Lagrangian Transport (STILT) model into the Hybrid Single-Particle Lagrangian Integrated Trajectory (HYSPLIT) model: a unified dispersion model for time-forward and time-reversed applications, *Journal of Applied Meteorology and Climatology*, 60, 799-810, https://doi.org/10.1175/JAMC-D-20-0158.1, 2021.

87. Roten, D., D. Wu, B. Fasoli, T. Oda, and **J.C. Lin**: An interpolation method to reduce the computational time in the stochastic Lagrangian particle dispersion modeling of spatially dense XCO_2 retrievals, *Earth and Space Science*, https://doi.org/10.1029/2020EA001343, 2021.

86. Kiel, M., A. Eldering, D.D. Roten, **J.C. Lin**, S. Feng, R. Lei, T. Lauvaux, T. Oda, C. Roehl, J.-F. Blavier, L.T. Iraci: Urban-focused satellite CO_2 observations from the Orbiting Carbon Observatory-3: a first look at the Los Angeles Megacity, *Remote Sensing of Environment*, 258, https://doi.org/10.1016/j.rse.2021.112314, 2021.

85. Mallia, D.V., L.E. Mitchell, L. Kunik, B. Fasoli, R. Bares, K. Gurney, D. Mendoza, and **J.C. Lin**: Quantifying urban CO_2 emissions using mobile observations from a light-rail public transit platform, *Environmental Science and Technology*, https://doi.org/10.1021/acs.est.0c04388, 2020.

84. Wu, D., **J.C. Lin**, H. Duarte, K. Wu, T. Oda, V. Yadav, N. Parazoo, K. Davis, S. Richardson, N. Miles, W. Coleman, N. Stavros, and E.A. Kort: A Model for Urban Biogenic CO_2 Fluxes: Solar-Induced Fluorescence for Modeling Urban biogenic Fluxes (SMUrF v1), *Geosci. Model Dev.*, https://doi.org/10.5194/gmd-14-3633-2021, 2021.

83. Mendoza, D.L., M.P. Buchert, T.M. Benney, and **J.C. Lin**: The Association of Media and Environmental Variables with Transit Ridership, *Vehicles*, 2(3), 507-522, https://doi.org/10.3390/vehicles2030028, 2020.

82. Ye, X., T. Lauvaux, E.A. Kort, T. Oda, S. Feng, **J.C. Lin**, E.G. Yang, and D. Wu: Constraining fossil fuel CO_2 emissions from urban area using OCO-2 observations of total column CO_2, *Journal of Geophysical Research-Atmospheres*, 125, e2019JD030528. https://doi.org/10.1029/2019JD030528, 2020.

81. Yang, E.G., E.A. Kort, D. Wu, **J.C. Lin**, T. Oda, X. Ye, and T. Lauvaux: Using space-borne observations and Lagrangian modeling to evaluate urban carbon dioxide emissions in the Middle East, *Journal of Geophysical Research-Atmospheres*, 125, e2019JD031922. https://doi.org/10.1029/2019JD031922, 2020.

80. Wu, D., **J.C. Lin**, T. Oda, and E.A. Kort: Space-based quantification of per capita CO_2 emissions from cities, *Environmental Research Letters*, https://iopscience.iop.org/article/10.1088/1748-9326/ab68eb, 2020.

79. Hrdina, A., J.G. Murphy, A.G. Hallar, **J.C. Lin**, A. Moravek, R. Bares, R.C. Petersen, A. Franchin, A.M. Middlebrook, L. Goldberger, B.H. Lee, M. Baasandorj, and S.S. Brown: The Role of Coarse Aerosol Particles as a Sink of HNO_3 in Wintertime Pollution Events in the Salt Lake Valley, *Atmospheric Chemistry and Physics*, https://doi.org/10.5194/acp-21-8111-2021, 2021.

78. de Gouw, J.A., J.P. Veefking, E. Roosenbrand, B. Dix, **J.C. Lin**, J. Landgraf, and P.F. Levelt: Daily Satellite Observations of Methane from Oil and Gas Production Regions in the United States, *Scientific Reports*, https://doi.org/10.1038/s41598-020-57678-4, 2020.

77. Mendoza, D.M., E. Crosman, L. Mitchell, A. Jacques, B. Fasoli, A. Park, **J.C. Lin**, and J. Horel: The TRAX Light-Rail Train Air Quality Observation Project, *Urban Science*, 3, 108; https://doi.org/10.3390/urbansci3040108, 2019.

76. Bares, R., L. Mitchell, B. Fasoli, D. Catharine, M. Garcia, D. Bowling, J. Ehleringer, and **J.C. Lin**,: The Utah urban carbon dioxide (UUCON) and Uintah Basin greenhouse gas networks: Instrumentation, data and measurement uncertainty, *Earth System Science Data*, 11, 1291-1308, https://doi.org/10.5194/essd-11-1291-2019, 2019.

75. Mendoza, D., M. Buchert, and **J.C. Lin**: Modeling net effects of transit operations on vehicle miles traveled, fuel consumption, carbon dioxide, and criteria air pollutants in a mid-size U.S. metro area: findings from Salt Lake City, UT, *Environmental Research Communications*, https://doi.org/10.1088/2515-7620/ab3ca7, 2019.

74. Kunik, L., D.V. Mallia, K.R. Gurney, D.L. Mendoza, T. Oda, and **J.C. Lin**: Bayesian inverse estimation of urban CO_2 emissions: results from a synthetic data simulation over Salt Lake City, UT, *Elementa*, 7:36, https://doi.org/10.1525/elementa.375, 2019.

73. Fiorella, R.P., R. Bares, **J.C. Lin**, and G. J. Bowen, Wintertime decoupling of urban valley and rural ridge water vapor revealed through stable water isotopes, *Atmospheric Environment*, https://doi.org/10.1016/j.atmosenv.2019.06.022, 2019.

72. Raczka, B.M., H.F. Duarte, C. Frankenberg, K. Grossmann, P. Kohler, J.E. Lee, **J.C. Lin**, B. Logan, T. Magney, J. Stutz, and D.R. Bowling: Sustained non-photochemical quenching shapes the seasonal pattern of solar-induced fluorescence at a high-elevation evergreen forest, *Journal of Geophysical Research-Biogeosciences*, 24. https://doi.org/10.1029/2018JG004883, 2019.

71. Moravek, A., J.G. Murphy, A. Hrdina, **J.C. Lin**, C. Pennell, A. Franchin, A.M. Middlebrook, D. Fibiger, C. Womack, E.E. McDuffie, R. Martin, K, Moore, J.A. Thornton, M. Baasandorj, and S.S. Brown: Wintertime Spatial Distribution of Ammonia and its Emission Sources in the Great Salt Lake Region, *Atmospheric Chemistry and Physics*, 19, 15691-15709, https://doi.org/10.5194/acp-19-15691-2019, 2019.

70. Foster, C.S., E.T. Crosman, J.D. Horel, S. Lyman, B. Fasoli, R. Bares, and **J.C. Lin**: Quantifying methane emissions in the Uintah Basin during wintertime stagnation episodes, *Elementa*, *Elem Sci Anth*, 7(1), p.24, http://doi.org/10.1525/elementa.362, 2019.

69. Womack, C., E. McDuffie, P. Edwards, R. Bares, J. de Gouw, K. Docherty, W. Dube, D. Fibiger, A. Franchin, J. Gilman, L. Goldberger, B. Lee, **J. Lin**, R. Long, A. Middlebrook, et al.: Wintertime ammonium nitrate aerosol pollution in urban areas: NO_x and VOC control as mitigation strategies, *Geophysical Research Letters*, 46, 4971– 4979, https://doi.org/10.1029/2019GL082028, 2019.

68. Hernandez, A.J., L.A. Morales-Rincon, D. Wu, D. Mallia, **J.C. Lin**, and R. Jimenez, Transboundary transport of biomass burning aerosols and photochemical pollution in the Orinoco river basin, *Atmospheric Environment*, https://doi.org/10.1016/j.atmosenv.2019.01.051, 2019.

67. Skiles, S.M., D.V. Mallia, A.G. Hallar, **J.C. Lin**, A. Lambert, R. Petersen, and S. Clark: Implications of a shrinking Great Salt Lake for dust on snow deposition in the Wasatch Mountains, UT: A source to sink case study from the April 13th, 2017 dust event, *Environmental Research Letters*, doi:10.1088/1748-9326/aaefd8, 2018.

66. **Lin, J.C.**, L. Mitchell, M. Buchert, E. Crosman, D. Mendoza, K. Gurney, R. Patarasuk, D. Bowling, D. Pataki, R. Bares, B. Fasoli, D. Catharine, M. Baasandorj, A. Jacques, S. Hoch, J. Horel, and J. Ehleringer, CO_2 and carbon emissions from cities: linkages to air quality, socioeconomic activity and stakeholders in the Salt Lake City urban area, *Bulletin of the American Meteorological Society*, doi:10.1175/BAMS-D-17-0037.1, 2018.

65. Wu, D., **J.C. Lin**, T. Oda, X. Ye, T. Lauvaux, E.G. Yang, and E.A. Kort: A Lagrangian Approach Towards Extracting Signals of Urban CO2 Emissions from Satellite Observations of Atmospheric Column CO_2 (XCO_2): X-Stochastic Time-Inverted Lagrangian Transport model ("X-STILT"), *Geoscientific Model Development*, 11, 4843-4871, https://www.geosci-model-dev.net/11/4843/2018/, 2018.

64. Zuromski, L., D.R. Bowling, P. Köhler, C. Frankenberg, M.L. Goulden, and **J.C. Lin**: Solar-induced fluorescence detects inter-annual variation in gross primary production of coniferous forests in the western United States, *Geophysical Research Letters*, https://doi.org/10.1029/2018GL077906, 2018.

63. Mitchell, L.E., E.T. Crosman, A. Jacques, B. Fasoli, J. Horel, D.R. Bowling, J.R. Ehleringer, L. Leclair-Marzolf, and **J.C. Lin**, Monitoring of trace gases and pollutants across an urban area using a light-rail public transit platform, *Atmospheric Environment*, 187, 9-23, https://doi.org/10.1016/j.atmosenv.2018.05.044, 2018.

62. Mallia, D.V., A. Kochanski, S.P. Urbanski, and **J.C. Lin**: Optimizing smoke modeling approaches at local scales, *Atmosphere*, 9, 166; doi:10.3390/atmos9050166, 2018.

61. Mitchell, L.E., **J.C. Lin**, D. R. Bowling, D. E. Pataki, C. Strong, A.J. Schauer, R. Bares, S.E. Bush, B.B. Stephens, D. Mendoza, D. Mallia, L. Holland, K.R. Gurney, and J.R. Ehleringer, Long-term urban carbon dioxide observations reveal spatial and temporal dynamics related to urban form and growth, *Proceedings of the National Academy of Sciences*, www.pnas.org/cgi/doi/10.1073/pnas.1702393115, 2018.

60. Bares, R., **J. Lin**, S. Hoch, M. Baasandorj, D. Mendoza, B. Fasoli, L. Mitchell, and B. Stephens, The wintertime co-variation of CO_2 and criteria pollutants in an urban valley of the Western U.S., *Journal of Geophysical Research-Atmospheres*, doi://10.1002/2017JD027917, 2018.

59. Fasoli, B., **J.C. Lin**, D.R. Bowling, L. Mitchell, and D. Mendoza: Simulating atmospheric tracer concentrations for spatially distributed receptors: updates to the Stochastic Time-Inverted Lagrangian Transport model's R interface (STILT-R version 2), *Geoscientific Model Development*, 11, 2813-2824, https://doi.org/10.5194/gmd-11-2813-2018, 2018.

58. Fiorella, R.P., R. Bares, **J.C. Lin**, J.R. Ehleringer, and G.J. Bowen, Detection and variability of combustion-derived vapor in an urban basin, *Atmospheric Chemistry and Physics*, 18, 8529-8547, https://doi.org/10.5194/acp-18-8529-2018, 2018.

57. Davison, J., H.-T. Hwang, E.A. Sudicky, D.V. Mallia, and **J.C. Lin**, Full coupling between the atmosphere, surface and subsurface for integrated hydrologic simulation, *Journal of Advances in Modeling Earth Systems*, 10, 43–53. https://doi.org/10.1002/2017MS001052, 2018.

56. Ye, X., T. Lauvaux, E. A. Kort, T. Oda, S. Feng, **J.C. Lin**, E. Yang, and D. Wu: Constraining fossil fuel CO_2 emissions from urban area using OCO-2 observations of total column CO_2, *Atmospheric Chemistry and Physics Discussions*, https://doi.org/10.5194/acp-2017-1022, 2017.

55. Foster, C.S., E.T. Crosman, L. Holland, D.V. Mallia, B. Fasoli, R. Bares, J. Horel, and **J.C. Lin**, Confirmation of Elevated Methane Emissions in Utah's Uintah Basin With Ground-Based Observations and a High-Resolution Transport Model, *Journal of Geophysical Research-Atmospheres*, 122, 13026–13044, https://doi.org/10.1002/2017JD027480, 2017.

54. Mallia, D.V., A. Kochanski, D. Wu, C. Pennell, W. Oswald, and **J.C. Lin**, Wind-blown dust modeling using a backward Lagrangian particle dispersion model, *Journal of Applied Meteorology and Climatology*, 56, 2845-2867, *https://doi.org/10.1175/JAMC-D-16-0351.1*, 2017.

53. **Lin, J.C.**, D. Mallia, D. Wu, and B.B. Stephens, How can mountaintop CO_2 observations be used to constrain regional carbon fluxes?, *Atmospheric Chemistry and Physics*, 17, 5561-5581, doi:10.5194/acp-17-5561-2017, 2017.

52. Baasandorj, M., S. Hoch, R. Bares, **J. Lin**, S. Brown, D. Millet, R. Martin, K. Kerry, K. Zarzana, C.D. Whiteman, W. Dube, G. Tonnesen, I. Jaramillo, and J. Sohl, Coupling between chemical and meteorological processes under persistent cold-air pool conditions: evolution of $PM_{2.5}$ pollution events and N_2O_5 observations in Salt Lake Valley, Utah, *Environmental Science and Technology*, 51 (11), 5941–5950, doi:10.1021/acs.est.6b06603, 2017.

51. Duarte, H., B. Raczka, C. Koven, D. Ricciuto, **J.C. Lin**, D.R. Bowling, and J.R. Ehleringer, Evaluating the Community Land Model (CLM 4.5) at a coniferous forest site in northwestern United States using flux and carbon-isotope measurements, *Biogeosciences*, 14, 4315-4340, doi:/10.5194/bg-14-4315-2017, 2017.

50. Luus, K.A., R. Commane, N.C. Parazoo, J.S. Benmergui, S.E. Euskirchen, C. Frankenberg, J. Joiner, J. Lindaas, C.E. Miller, W.C. Oechel, D. Zona, S. Wofsy, and **J.C. Lin,** Tundra photosynthesis captured by satellite observed solar-induced chlorophyll fluorescence, *Geophysical Research Letters*, 44, 1564-1573, doi:10.1002/2016GL070842, 2017.

49. Raczka, B., H. Duarte, C.D. Koven, D. Ricciuto, P.E. Thornton, **J.C. Lin**, and D. R. Bowling, An observational constraint on stomatal function in forests: evaluating coupled carbon and water vapor exchange with carbon isotopes in the Community Land Model (CLM 4.5), *Biogeosciences*, 13, 5183-5204, doi:10.5194/bg-13-5183-2016, 2016.

48. Patarasuk, R., K.R. Gurney, D. O'Keeffe, Y. Song, J. Huang, P. Rao, M. Buchert, **J.C. Lin**, D. Mendoza, and J. Ehleringer, Urban high-resolution fossil fuel CO_2 emissions quantification and exploration of emission drivers for potential policy applications, *Urban Ecosystems*, doi:10.1007/s11252-016-0553-1, 2016.

47. Karion, A., C. Sweeney, J.B. Miller, A. Andrews, R. Commane, S. Dinardo, J. Henderson, J. Lindaas, **J. Lin**, K. Luus, T. Newberger, P. Tans, S. Wofsy, S. Wolter, C.E. Miller, Investigating Alaskan methane and carbon dioxide fluxes using measurements from the CARVE tower, *Atmospheric Chemistry and Physics,* 16, 5383-5398, doi:10.5194/acp-16-5383-2016, 2016.

46. Davison, J.H., H.-T. Hwang, E.A. Sudicky, and **J.C. Lin**, Coupled Atmospheric, Land Surface, and Subsurface Modeling: Exploring Water and Energy Feedbacks in Three-Dimensions, *Advances in Water Resources*, 86, 73-85, DOI: 10.1016/j.advwatres.2015.09.002, 2015.

45. Skiles, S.M., T.H. Painter, J. Belnap, L. Holland, R.L. Reynolds, H.L. Goldstein and **J.C. Lin**, Regional variability in dust-on-snow processes and impacts in the Upper Colorado River Basin, *Hydrological Processes*, doi:10.1002/hyp.10569, 2015.

44. Luus, K.A. and **J.C. Lin**, The Polar Vegetation Photosynthesis and Respiration Model (PolarVPRM): A parsimonious, satellite-data-driven model of high-latitude CO_2 exchange, *Geoscientific Model Development*, 8, 2655-2674, 2015.

43. Mallia, D.V., **J.C. Lin**, S. Urbanski, J. Ehleringer, and T. Nehrkorn, Impacts of upstream wildfire emissions on CO, CO_2, and $PM_{2.5}$ concentrations in Salt Lake City, Utah, *J. Geophys. Res.-Atmos.*, 120, doi:10.1002/2014JD022472, 2015.

42. **Lin, J.C.** and D. Wen, A method to quantitatively apportion pollutants at high spatial and temporal resolution: the Stochastic Lagrangian Apportionment Method (SLAM), *Environmental Science and Technology*, 49, 351-360, doi: 10.1021/es505603v, 2015.

41. Viatte, C., K. Strong, J. Hannigan, E. Nussbaumer, L. Emmons, S. Conway, C. Paton-Walsh, J. Hartley, J. Benmergui, and **J.C. Lin**, Identifying fire plumes in the Arctic with tropospheric FTIR measurements and transport models, *Atmospheric Chemistry and Physics*, 15, 2227-2246, doi:10.5194/acp-15-2227-2015, 2015.

40. Good, S., D. Mallia, **J.C. Lin**, and G. Bowen, Stable Isotope Analysis of Precipitation Samples Obtained Via Crowdsourcing Reveals the Spatiotemporal Evolution of Superstorm Sandy, *PLoS One*, 9(3) doi:10.1371/journal.pone.0091117.g001, 2014.

39. Wen, D., L. Zhang, **J.C. Lin**, R. Vet, and M.D. Moran, An evaluation of ambient ammonia concentrations over southern Ontario simulated with different dry deposition schemes within STILT-Chem v0.8, *Geoscientific Model Development,* 7, 1037-1050, doi:10.5194/gmd-7-1037-2014, 2014.

38. Luus, K.A., R.E.J. Kelly, **J.C. Lin**, E.R. Humphreys, P. Lafleur, and W.C. Oechel, Modeling the influence of snow cover on low Arctic net ecosystem exchange, *Environmental Research Letters*, doi:10.1088/1748-9326/8/3/035045, 2013.

37. Kim, S., D. Millet, L. Hu, M. Mohr, T. Griffis, D. Wen, **J.C. Lin**, S. Miller, and M. Longo, Constraints on carbon monoxide emissions in the United States based on tall tower measurements, *Environmental Science and Technology*, 47, 8316-8324, 2013.

36. Luus, K.A., Y.Gel, **J.C. Lin**, R.E.J. Kelly, and C.R. Duguay, Pan-Arctic linkages between snow accumulation and growing-season air temperature, soil moisture and vegetation, *Biogeosciences*, 10, 7575-7597, 2013.

35. Bowman, K.P., **J.C. Lin**, A. Stohl, R. Draxler, P. Konopka, M. Bourqui, A. Andrews, and D. Brunner, Input Data Requirements for Lagrangian Trajectory Models, *Bulletin of the American Meteorological Society*, doi:10.1175/BAMS-D-12-00076.1, July, 2013.

34. Benmergui, J., S. Sharma, D. Wen, and **J.C. Lin**, Quantitative attribution of processes affecting atmospheric chemical concentrations by combining a time-reversed Lagrangian particle dispersion model and a regression approach, In *Lagrangian Modeling of the Atmosphere*, AGU Geophysical Monograph, edited by **Lin, J.C.**, D. Brunner, C. Gerbig, A. Stohl, A. Luhar, and P. Webley, 2013.

33. **Lin**, **J.C.** and C. Gerbig, How can we satisfy the well-mixed criterion in highly inhomogeneous flows? A practical approach, In *Lagrangian Modeling of the Atmosphere*, AGU Geophysical Monograph, edited by **Lin, J.C.**, D. Brunner, C. Gerbig, A. Stohl, A. Luhar, and P. Webley, 2013.

32. Luus, K.A., **J.C. Lin**, R.E.J. Kelly, and C.R. Duguay, Subnivean Arctic and sub-Arctic net ecosystem exchange (NEE): Towards representing snow season processes in models of NEE using cryospheric remote sensing, *Progress in Physical Geography*, 37(4), DOI: 10.1177/0309133313491130, 484-515, 2013.

31. Wen, D., **J.C. Lin**, L. Zhang, R. Vet, and M.D. Moran, Modeling atmospheric ammonia and ammonium using a stochastic Lagrangian air quality model (STILT-Chem v0.7), *Geosci. Model Dev.,* 6, 327-344, 2013.

30. Wen, D., **J.C. Lin**, D. Millet, A. Stein, and R.R. Draxler, A backward-time Lagrangian air quality model, *Atmospheric Environment*, 54, 373-386, doi:10.1016/j.atmosenv.2012.02.042, 2012.

29. **Lin, J.C.**, D. Brunner, and C. Gerbig, Improving and applying Lagrangian models of the atmosphere, *EOS*, 93 (3), 17 January, 2012.

28. Gourdji, S.M., K.L. Mueller, V. Yadav, D.N. Huntzinger, A.E. Andrews, M. Trudeau, G. Petron, T. Nehrkorn, J. Eluszkiewicz, J. Henderson, D. Wen, **J.C. Lin**, et al. North American CO_2 exchange: inter-comparison of modeled estimates with results from a fine-scale atmospheric inversion, *Biogeosciences*, 9, 457-475, doi:10.5194/bg-9-457-2012, 2012.

27. Erickson, T.A., A.M. Michalak, and **J.C. Lin**, A data system for visualizing 4-D atmospheric CO_2 models and data, *OS Geo Journal*, 8, 37-47, 2011.

26. Chan, E. and **J.C. Lin**, What is the value of agricultural census data in carbon cycle studies?, *J. Geophys. Res.-Biogeosciences*, 116(G03012), doi:10.1029/2010JG001617, 2011.

25. **Lin, J.C.**, D. Brunner, and C. Gerbig, Studying atmospheric transport through Lagrangian models, *EOS*, 92 (21), 24 May, 2011.

24. **Lin, J.C.**, M.R. Pejam, E. Chan, S.C. Wofsy, E.W. Gottlieb, H.A. Margolis, and J.H. McCaughey, Attributing uncertainties in simulated biospheric carbon fluxes to different sources of error, *Global Biogeochemical Cycles*, 25 (GB2018), doi:10.1029/2010GB003884, 2011.

23. Wen, D., **J.C. Lin**, F. Meng, P.K. Gbor, Z. He, and J.J. Sloan, Quantitative assessment of upstream source influences on total gaseous mercury observations in Ontario, Canada, *Atmospheric Chemistry and Physics*, 11, 1405-1415, 2011.

22. Nehrkorn, T., J. Eluszkiewicz, S.C. Wofsy, **J.C. Lin**, C. Gerbig, M. Longo, and S. Freitas, Coupled Weather Research and Forecasting--Stochastic Time-Inverted Lagrangian Transport (WRF-STILT) Model, *Meteorology and Atmospheric Physics*, 107, 51-64, 2010.

21. **Lin, J.C.**, J.H. Tai, C.H. Feng, and D.E. Lin, Towards improving forecasts of visibility in Taiwan: A statistical approach, *Terrestrial, Atmospheric and Oceanic Sciences*, 21(2), 359-374, 2010.

20. Alam, J. and **J.C. Lin**, Toward a fully Lagrangian atmospheric modelling system, *Monthly Weather Review*, 136(12), 4653-4667, 2008.

19. Wang, J.-W., K. Wang, R.A. Pielke, **J.C. Lin**, and T. Matsui, Towards a Robust Test on North America Warming Trend and Precipitable Water Content Increase, *Geophysical Research Letters*, 35(L18804), doi:10.1029/2008GL034564, 2008.

18. Gerbig, C., S. Korner, and **J.C. Lin**, Vertical mixing in atmospheric tracer transport models: error characterization and propagation, *Atmospheric Chemistry and Physics*, 8, 591-602, 2008.

17. Mahadevan, P., S.C. Wofsy, D.M. Matross, X. Xiao, A.L. Dunn, **J.C. Lin**, et al., A Satellite-Based Biosphere Parameterization for Net Ecosystem CO_2 Exchange: Vegetation Photosynthesis and Respiration Model (VPRM), *Global Biogeochemical Cycles*, 22, doi:10.1029/2006GB002735, 2008.

16. Miller, S.M., D.M. Matross, A.E. Andrews, D.B. Millet, M. Longo, E.W. Gottlieb, A.I. Hirsch, C. Gerbig, **J.C. Lin**, et al., Sources of carbon monoxide and formaldehyde in North America determined from high-resolution atmospheric data, *Atmospheric Chemistry and Physics*, 8, 7673-7696, 2008.

15. **Lin, J.C.**, C. Gerbig., S.C. Wofsy, R. Draxler, V.Y. Chow, and E.W Gottlieb, Designing Lagrangian experiments to measure regional-scale trace gas fluxes, *J. Geophys. Res.*, 112 (D13312), doi:10.1029/2006JD008077, 2007.

14. Pielke, R.A. Sr., J. Adegoke, A. Beltran-Przekurat, C.A. Hiemstra, **J.C. Lin**, et al. An overview of regional land use and land cover impacts on rainfall, *Tellus*, 59B, 587-601, 2007.

13. **Lin, J.C.**, T. Matsui, R.A. Pielke, Sr., C. Kummerow, Effects of biomass burning-derived aerosols on precipitation and clouds in the Amazon Basin: A satellite-based empirical study, *J. Geophys. Res.*, 111 (D19204), doi:10.1029/2005JD006884, 2006.

12. Hurst, D., **J.C. Lin**, P. Romashkin, C. Gerbig, et al., Continuing global significance of emissions of Montreal Protocol-restricted halocarbons in the United States and Canada, *J. Geophys. Res.*, 111 (D15302), doi:10.1029/2005JD006785, 2006.

11. **Lin, J.C.**, Gerbig, C., Wofsy, S.C., Daube, B.C., et al., What have we learned from intensive atmospheric sampling field programs of CO_2?, *Tellus*, 58B, 331-343, 2006.

10. Matross, D.M., A. Andrews, M. Pathmathevan, C. Gerbig, **J.C. Lin**, et al., Estimating regional carbon exchange in New England & Quebec by combining atmospheric, ground-based, and satellite data, *Tellus*, 58B, 344-358, 2006.

9. Gerbig, C., **J.C. Lin**, J.W. Munger, and S.C. Wofsy, What can tracer observations in the continental boundary layer tell us about surface-atmosphere fluxes?, *Atmospheric Chemistry and Physics*, 6, 539-554, 2006.

8. **Lin, J.C.** and C. Gerbig, Accounting for the effect of transport errors on tracer inversions, *Geophysical Research Letters*, 32 (L01802), doi:10.1029/2004GL021127, 2005.

7. **Lin, J.C.**, C. Gerbig, et al., An empirical analysis of the spatial variability of atmospheric CO_2: implications for inverse analyses and space-borne sensors, *Geophysical Research Letters*, 31 (L23104), doi:10.1029/2004GL020957, 2004.

6. **Lin, J.C.**, C. Gerbig, S.C. Wofsy, et al., Measuring fluxes of trace gases at regional scales by Lagrangian observations: Application to the CO_2 Budget and Rectification Airborne (COBRA) study, *J. Geophys. Res.*, 109 (D15304), doi:10.1029/2004JD004754, 2004.

5. Yi, C., K.J. Davis, P.S. Bakwin, A.S. Denning, N. Zhang, A. Desai, **J.C. Lin**, and C. Gerbig The observed covariance between ecosystem carbon exchange and atmospheric boundary layer dynamics at a site in northern Wisconsin, *J. Geophys. Res.*, 109 (D08302), doi:10.1029/2003JD004164, 2004.

4. **Lin, J.C.**, C. Gerbig, S.C. Wofsy, et al., A near-field tool for simulating the upstream influence of atmospheric observations: The Stochastic Time-Inverted Lagrangian Transport (STILT) model, *J. Geophy. Res.*, 108(D16), 4493, doi:10.1029/2002JD003161, 2003.

3. Gerbig, C., **J.C. Lin**, S.C. Wofsy, B.C. Daube, et al., Toward constraining regional-scale fluxes of CO_2 with atmospheric observations over a continent: 1. Observed spatial variability from airborne platforms, *J. Geophys. Res.*, 108(D24), 4756, doi:10.1029/2002JD003018, 2003.

2. Gerbig, C., **J.C. Lin**, S.C. Wofsy, B.C. Daube, et al., Toward constraining regional-scale fluxes of CO_2 with atmospheric observations over a continent: 2. Analysis of COBRA data using a receptor-oriented framework, *J. Geophys. Res*., 108(D24), 4757, doi:10.1029/2003JD003770, 2003.

1. Chou, W.W., S.C. Wofsy, R.C. Harriss, **J.C. Lin**, C. Gerbig, and G.W. Sachse, Net fluxes of CO_2 in Amazonia derived from aircraft observations, *J. Geophys. Res*.,107(D22), 4614, 10.1029/2001JD001295, 2002.

Books

3. *Lagrangian Modeling of the Atmosphere*, AGU Geophysical Monograph (Vol. 200), edited by **Lin, J.C.**, D. Brunner, C. Gerbig, A. Stohl, A. Luhar, and P. Webley, Washington D.C., American Geophysical Union, 349 pages, 2012.

2. **Lin, J.C.**, A fully-Lagrangian approach to solving atmospheric dynamics, In *Mesoscale Meteorological Modeling*, by Roger A. Pielke, Sr., 3rd Edition, Academic Press, 2013.

1. Good, Stephen P., Derek V. Mallia, Elizabeth H. Denis, Katherine H. Freeman, Xiahong Feng, Shuning Li, Nicolas Zegre, **John C. Lin**, and Gabriel J. Bowen: High Frequency Trends in the Isotopic Composition of Superstorm Sandy, *Learning from the Impacts of Superstorm Sandy*, Chapter 4, 41-55, 2014.

Other Publications

9. Great Salt Lake Date and Insights Summary: https://wilkescenter.utah.edu/home/great-salt-lake-strike-team/.

8. Great Salt Lake Policy Assessment: A synthesized resource document for the 2023 general legislative session: https://gardner.utah.edu/great-salt-lake-strike-team/.

7. Contributing Author to IG[3]IS Urban Greenhouse Gas Emission Observation and Monitoring Good Research Practice Guidelines, World Meteorological Organization, Geneva, Switzerland: https://library.wmo.int/index.php?lvl=notice_display&id=22120#.ZElNkOzMLX3.

6. **Lin, J.C.**, D.E. Pataki, and L.E. Mitchell (2017). Op-ed: Human-caused climate change is real, and denying it hurts all of us, Salt Lake Tribune, March 18th, 2017.

5. **Lin, J.C.** and D. Worthy (2011). What do atmospheric greenhouse gas (GHG) concentrations tell us about regional sources and sinks in Canada? in "Ecosystems in Flux: Carbon, Climate and Disturbance in Canadian Forests and Peatlands", Published by the Canadian Carbon Program.

4. **Lin, J.C.** (2010). Climate change: a new dimension in international relations, Foreign Policy Newsletter, Taipei, Taiwan. (original document in English, translated to Mandarin)

3. Contributing Author to *Science Implementation Strategy to the North American Carbon Program*, U.S. Global Change Research Program, 2004.

2. Wofsy, S.C., C. Gerbig, and **J.C. Lin**, *Determination of CO_2 Sources and Sinks on the Continental and Regional Scales*, 12th WMO/IAEA Meeting of Experts on CO_2 and related tracer techniques, Toronto, Sept. 2003, WMO/GAW publication No.161, 71-78, 2003.

1. Contributing Author to *The North American Carbon Program*, U.S. Global Change Research Program, 2001.

Data and Model Products

- Lin, J.C., 2023: Google Street View vehicle-based mobile air quality observations in Salt Lake City (May 2019-March 2020). https://doi.org/10.5281/zenodo.7605718

- Jacobson, A. R., et al., 2023: CarbonTracker CT2022. doi:10.25925/Z1GJ-3254. https://gml.noaa.gov/ccgg/carbontracker/CT2022

- Wu, D., and **J.C. Lin**. 2021. Urban Biogenic CO_2 fluxes: GPP, Reco and NEE Estimates from SMUrF, 2010-2019. ORNL DAAC, Oak Ridge, Tennessee, USA. https://doi.org/10.3334/ORNLDAAC/1899

- Mitchell, L.E., **J.C. Lin**, L.R. Hutyra, D.R. Bowling, R.C. Cohen, K.J. Davis, A. Guha, A. Karion, R.F. Keeling, J.J. Kim, N.L. Miles, C.E. Miller, S. Newman, S. Prinzivalli, A. Rice, S.J. Richardson, M. Sargent, K.R. Verhulst, F. Vogel,

R.F. Weiss, J. Whetstone, and S.C. Wofsy. 2021. NACP: Urban Greenhouse Gases across the CO2 Urban Synthesis and Analysis Network, V2. ORNL DAAC, Oak Ridge, Tennessee, USA. https://doi.org/10.3334/ORNLDAAC/1916

- Raczka, B.M., T.J. Hoar, H.F. Duarte, A.M. Fox, J.L. Anderson, D.R. Bowling, and **J.C. Lin**. 2021. CLM5-DART Regional Carbon Fluxes and Stocks over the Western US, 1998-2010. ORNL DAAC, Oak Ridge, Tennessee, USA. https://doi.org/10.3334/ORNLDAAC/1856

- Mitchell, L., **J.C. Lin**, L.R. Hutyra, M. Sargent, S.C. Wofsy, N.L. Miles, S.J. Richardson, K.R. Verhulst, R.M. Duren, A. Rice, R.C. Cohen, A. Shusterman, S. Newman, and A. Guha. 2019. NACP: Urban Greenhouse Gases across the CO_2 Urban Synthesis and Analysis Network. ORNL DAAC, Oak Ridge, Tennessee, USA. https://doi.org/10.3334/ORNLDAAC/1743

- Dien Wu, Benjamin Fasoli, & **John C. Lin**. (2019, February 4). uataq/X-STILT: X-STILT (Version v1.4.1). Zenodo. http://doi.org/10.5281/zenodo.2556989

- Raczka, B.M., A. Porcar-castell, T. Magney, J. Lee, P. Kohler, C. Frankenberg, K. Grossmann, B.A. Logan, J. Stutz, P.D. Blanken, S.P. Burns, H.F. Duarte, X. Yang, **J.C. Lin**, and D.R. Bowling. 2019. CLM Simulated Solar-Induced Fluorescence, Niwot Ridge, Colorado, USA, 1998-2018. ORNL DAAC, Oak Ridge, Tennessee, USA. https://doi.org/10.3334/ORNLDAAC/1720

- Bares, Ryan; **Lin, John C**.; Fasoli, Ben; Mitchell, Logan E.; Bowling, David R.; Garcia, Maria; Catharine, Douglas; Ehleringer, James R. (2018). Atmospheric measurements of carbon dioxide (CO_2) and methane (CH_4) from the state of Utah from 2014-09-10 to 2018-04-01 (NCEI Accession 0183632). NOAA National Centers for Environmental Information. Dataset. https://doi.org/10.25921/8vaj-bk51.

- Cooperative Global Atmospheric Data Integration Project. (2017). *Multi-laboratory compilation of atmospheric carbon dioxide data for the period 1957-2016; obspack_co2_1_GLOBALVIEWplus_v3.0_2017-08-11* [Data set]. NOAA Earth System Research Laboratory, Global Monitoring Division. https://doi.org/10.15138/G3CW4Q

Current Mentoring/Supervision

Research Assistant Professors	Research Associates
• *Derek Mallia*	• *Maria Garcia* • *Megan Ostlie*
Postdocs • *Taylor "Kai" Wilmot* • *Xueli Huo*	Ph.D. Students • *Lewis Kunik* • *James Mineau*
Masters Students • *Loren Brink* • *Haley Humble* • *Nicholas Hofmann* • *Cambria White*	Undergraduate Students • *Elizabeth Pinegar* • *Rowan Brown*

Former Group Members (position when working in research group) and their Current Positions

- *Jahrul Alam* (Postdoc):   Associate Professor, Dept. of Mathematics, Memorial University of Newfoundland

- *Henrique Duarte* (Postdoc): Postdoc, INPE (National Institute for Space Research), Brazil

- *Daniel Mendoza* (Postdoc): Research Assistant Professor, Dept. of Atmospheric Sciences, University of Utah

- *Brett Raczka* (Postdoc; co-supervised with D. Bowling): National Center for Atmospheric Research

- *Deyong Wen* (Postdoc):   Waterloo CFD Engineering Consulting Inc.

- *Mahmoud Pejam* (Postdoc): Upper Thames River Conservation Authority, Ontario, Canada

- *Ryan Bares* (Research Associate): Environmental Scientist, Utah Division of Air Quality
- *Jason Davison* (Ph.D.):   Assistant Professor, Dept. of Civil Engineering, Catholic University of America
- *Myung-Gwang Kim* (Ph.D.): Engineer, Waterloo, Ontario, Canada
- *Kristina Luus* (Ph.D.):   NSERC Postdoc, Dublin Institute of Technology, Ireland
- *Lacey Holland* (Ph.D.):   Postdoc, University of Hawaii
- *Dien Wu* (Ph.D.):   Postdoc, California Institute of Technology
- *Dustin Roten* (Ph.D.):   Postdoc, NASA Jet Propulsion Laboratory
- *Ben Fasoli* (MSc.):   Software Engineer, Pngme
- *Lauren Zuromski* (MSc.):   ARUP Laboratories
- *Joshua Benmergui* (MSc.): Postdoc, Harvard University
- *Eric Chan* (MSc.):   Business Environment Council, Hong Kong
- *Nicholas Murdoch* (MSc.): Ph.D. Student, University of Western Ontario

Invited Talks

59. *National Taiwan University Dept. of Atmospheric Sciences* (January 11th, 2024): "Climate change, wildfires, and air quality in the Western U.S.", Taipei, Taiwan.

58. *Academia Sinica Research Center for Environmental Changes* (January 10th, 2024): "Greenhouse gases and pollutants in cities: from local to global scales", Taipei, Taiwan.

57. *Wallace Stegner Center Symposium:* (March 17th, 2023): "Recommendations and Key Insights from the Great Salt Lake Strike Team Report", Salt Lake City, UT.

56. *National Academies' workshop on Development of a Framework for Evaluating Global Greenhouse Gas Emissions Info. for Decision Making:* (June 28th, 2022): "Opportunities and Challenges for Data Synthesis & Integration for Urban-scale Decision Support ", National Academy of Science, Washington, DC.

55. *NASA Applied Remote Sensing Training Program:* (May 2022): "Understanding urban carbon emissions with space-based carbon dioxide observations", (virtual).

54. *Telluride Science Research Center:* (July 2021): "Seeing the trees for the forest: Towards hyper-local emissions from mobile observations: experience from Salt Lake City, Utah", Telluride, Colorado.

53. *Hinckley Institute of Politics Panel Discussion:* (April 2021): "The Role of Arts in Climate Change Communication", Salt Lake City, Utah (virtual).

52. *Environment and Climate Change Canada Climate Research Division Seminar* (October 2020): "Urban Greenhouse Gas Emissions from Local, Continental, to Global Scales", Toronto, Canada (virtual).

51. *American Geophysical Union Annual Meeting* (December 2019): "Overcoming challenges in using satellite-based CO_2 data to understand carbon emissions from cities around the world", San Francisco, CA.

50. *American Geophysical Union Annual Meeting* (December 2019): "The CO_2-Urban Synthesis and Analysis (CO_2-USA) Project: Results & Deliverables", San Francisco, CA.

49. *National Taiwan University Dept. of Atmospheric Sciences* (September 10th, 2019): "Zooming In and Out of Cities from Local, Regional, to Global Scales: emissions, air quality, greenhouse gases, & carbon cycling", Taipei, Taiwan.

48. *Academia Sinica Research Center for Environmental Changes* (August 28thth, 2019): "Zooming In and Out of Cities from Local, Regional, to Global Scales: emissions, air quality, greenhouse gases, & carbon cycling", Taipei, Taiwan.

47. *University of Utah Geography Department* (April 12th, 2019): "Zooming in and out of cities: emissions, air quality, and urban density", Salt Lake City, Utah.

46. *Kem C. Gardner Policy Institute* (January 24th, 2019): "Climate change, greenhouse gases, and air quality along Utah's Wasatch Front", Salt Lake City, Utah.

45. *World Meteorological Organization Integrated Global Greenhouse Gas Information System (IG³IS) & User Summit*

(November 14th, 2018): "Greenhouse gas emissions from Salt Lake City and beyond: research and engagement with stakeholders", Geneva, Switzerland.

44. *University of Edinburgh Global Change Seminar* (September 21st, 2018): "The Greenhouse Gas-Air Quality nexus: experiences from the western U.S.", Edinburgh, Scotland, UK.

43. *University of Utah Global Change & Sustainability Center Seminar* (September 11th, 2018): "The Greenhouse Gas-Air Quality nexus: experiences from the western U.S.", Salt Lake City, UT.

42. *Harvard University, Celebration of Science and Times of Professor Steven C. Wofsy Symposium* (June 23rd, 2018): "Back to the future: a STILTed perspective on Lagrangian transport modeling", Cambridge, MA.

41. *Nanjing University* (May 29th, 2018): "Urban carbon emissions and biospheric carbon cycling in the Western U.S.", Nanjing, China.

40. *Nanjing University of Information Science and Technology* (May 24th, 2018): "Land-atmosphere exchanges of trace gases: a Lagrangian perspective", Nanjing, China.

39. *NASA Jet Propulsion Laboratory "Carbon Club"* (April 26th, 2018): "Land-atmosphere exchanges of trace gases: a Lagrangian perspective", Pasadena, California.

38. *Carbon Cycle Interagency Working Group* (April 20th, 2018): "The CO_2-Urban Synthesis and Analysis (CO_2-USA) Project & Initial Report", (remote presentation).

37. *Environment and Climate Change Canada* (March 28th, 2018): "Urban carbon emissions and biospheric carbon cycling in the Western U.S.", Toronto, Ontario, Canada.

36. *University of Toronto Centre for Global Change Science (CGCS) Distinguished Lecturer Series* (March 27th, 2018): "CO_2 and carbon emissions from cities: linkages to air quality, socioeconomic activity and stakeholders in the Salt Lake City urban area", Toronto, Ontario, Canada.

35. *Climate & Health Symposium, Salt Lake County Health Department* (April 2017): "Air quality-greenhouse gas linkages and research at the University of Utah", West Jordan, UT.

34. *Utah State University* (November 2016): "The Greenhouse Gas-Air Quality nexus: experiences from the western U.S.", Logan, UT.

33. *Max Planck Institute for Biogeochemistry* (June 2016): "The Greenhouse Gas-Air Quality nexus: experiences from the western U.S.", Jena, Germany.

32. *National Institute of Standards and Technology* (April 2016): "Salt Lake City Urban Greenhouse Gas Research", Gaithersburg, MD.

31. *American Geophysical Union Annual Meeting* (December 2015): "The University of Utah Urban Undertaking (U^4)", San Francisco, CA.

30. *EPA Workshop: Modeling Air Quality from the Global to Local Scale* (May 2015): "Impact of Wildfires on Air Quality Along the Wasatch Front", Boulder, CO.

29. *Harvard University Atmospheric Sciences Seminar* (April 2015): "The Greenhouse Gas-Air Quality nexus: experiences from the western U.S.", Cambridge, MA.

28. *Southern Utah University* (Feb. 2015): "Adventures in the LAIR: Research in Air Quality and Greenhouse Gases in University of Utah's Land-Atmosphere Interactions Research (LAIR) Group", Cedar City, UT.

27. *iUTAH All Hands Meeting* (Nov. 2014): "Adventures in the LAIR: Research in Air Quality and Greenhouse Gases in University of Utah's Land-Atmosphere Interactions Research (LAIR) Group", West Valley City, UT.

26. *Utah Valley University* (Oct. 2014): "Adventures in the LAIR: Research in Air Quality and Greenhouse Gases in University of Utah's Land-Atmosphere Interactions Research (LAIR) Group", Orem, UT.

25. *NASA-JPL/Caltech* (Jul. 2013): "Atmospheric Modeling of Greenhouse Gases and Air Quality", Caltech, Pasadena, CA.

24. *Utah Division of Air Quality* (Nov. 2012): "A time-inverted stochastic Lagrangian air quality model", Salt Lake City, UT.

23. *Environment Canada Carbon Assimilation Workshop* (Apr. 2012): "Overview of regional scale modeling: making the link between GHG and air quality"*,* University of Toronto, Toronto, Ontario, Canada*.*

22. *National Taiwan University, Dept. of Atmospheric Sciences Seminar* (Dec. 2011): "Interpreting regional scale signals of global change from atmospheric concentrations".

21. *University of Toronto, Dept. of Atmospheric Physics Noble Seminar* (Apr. 2011): "Interpreting regional scale signals of global change from atmospheric concentrations".

20. *University of Utah, Global Change and Ecosystem Center Seminar* (Mar. 2011): "Interpreting regional scale signals of global change from atmospheric concentrations".

19. *National Institute for Environmental Studies (Japan) (*Aug. 2010): "Overview of the Stochastic Time-Inverted Lagrangian Transport (STILT) model", Tsukuba, Japan.

18. *Canadian Forest Service/Pacific Forestry Centre* (May 2010): "Regional scale terrestrial carbon fluxes: an atmospheric perspective", Victoria, BC.

17. *Environment Canada, Climate Research Division (*May 2010): "Atmospheric constraints on regional scale tracer fluxes".

16. *Canadian Space Agency Workshop on Suborbital Platforms and Nanosatellites* (Apr. 2010): "How can aircraft measurements tell us about the source/sink distribution of greenhouse gases?", Saint-Hubert, QC.

15. *Canadian Space Agency Earth System Science Workshop* (Dec. 2009): "Atmospheric measurements and modeling for carbon cycle science", Saint-Hubert, QC.

14. *U.S. National Oceanographic and Atmospheric Administration Air Resources Laboratory* (Nov. 2009): "Overview of the Stochastic Time-Inverted Lagrangian Transport (STILT) model", Silver Springs, MD.

13. *U.S. National Oceanographic and Atmospheric Administration Earth System Research Laboratory Annual Meeting* (May 2009): "Interpreting variability of atmospheric mercury concentrations in Canada", Boulder, Colorado.

12. *Environment Canada, Climate Research Division* (Apr. 2009): "Relating highly-varying tracer concentrations over the continent to regional to sources/sinks", Toronto, Canada.

11. *Canadian Carbon Program Annual Meeting* (Feb. 2009): "Model-data fusion and regional constraints on carbon fluxes from tower-based CO_2 concentrations", Vancouver, BC.

10. *Univ. of Waterloo, Dept. of Applied Mathematics seminar* (Nov. 2008): "Mucking around in the toilet: adventures (real + simulated) in the atmospheric boundary layer".

9. *Dalhousie Univ., Dept. of Physics seminar* (Nov. 2008): "Mucking around in the toilet: adventures (real + simulated) in the atmospheric boundary layer".

8. *National Taiwan Univ., Dept. of Atmospheric Sciences seminar* (Jan. 2007): "Using atmospheric concentrations of trace gases to understand continental sources/sinks".

7. *Academia Sinica (Taipei, Taiwan)* (Jan. 2007): "Using atmospheric concentrations of trace gases to understand continental sources/sinks".

6. *Fluxnet-Canada Annual Meeting* (Feb. 2006): "Using high-precision CO_2 and CO observations to constrain large-scale carbon budgets", Victoria, B.C.

5. *Univ. of Toronto, Dept. of Physics seminar* (Jan. 2006): "Relating highly-varying tracer concentrations over the continent to regional to sources/sinks".

4. *Univ. of California, Berkeley Environmental Science, Policy & Management seminar* (Oct. 2005): "How do we learn about terrestrial sources and sinks of carbon?".

3. *McGill Univ., Dept. of Atmospheric and Oceanic Sciences seminar* (Mar. 2005): "How do we learn about terrestrial sources and sinks of carbon?", Montreal, Canada

2. *U.S. National Oceanographic and Atmospheric Administration Climate Monitoring and Diagnostics Laboratory seminar* (Jan. 2005): "Towards linking tracer concentrations with sources/sinks at high spatio-temporal resolution: the Stochastic Time-Inverted Lagrangian Transport (STILT) approach", Boulder, Colorado.

1. *Frontier Research Center for Global Change* (Nov. 2004): "Constraining terrestrial sources and sinks of carbon at the regional scale", Yokohama, Japan.

Workshop/Meeting Experience

CO$_2$-Urban Synthesis and Analysis Workshop Organizer, Oct. 2019. Boston University

AQUARIUS (Air Quality in the Western US) Workshop Organizer, Sept. 2018. University of Utah

CO$_2$-Urban Synthesis and Analysis Workshop Organizer, Nov. 2018. University of Utah

CO$_2$-Urban Synthesis and Analysis Workshop Organizer, Nov. 2017. National Institute of Standards and Technology

AGU Session Co-Convener, Understanding & Attributing Greenhouse Gas Fluxes from Urban Systems, Dec. 2014~2015.   San Francisco, CA

AGU Chapman Conference Lead Convener, Oct. 2011.   Grindelwald, Switzerland

International Carbon Dioxide Conference, 2005, 2013, 2017.   Boulder; Beijing; Interlaken

American Geophysical Union Meetings, 2000~2003, 2009, 2012, 2014~2015.   Boston, MA; San Francisco, CA

Canadian Meteorological & Oceanographic Society Annual Meeting (session convener), 2006.   Toronto, ON

Canadian Carbon Program Annual Meeting, 2009, 2010.   Vancouver, BC; Montreal, QC

Fluxnet-Canada Annual Meeting, 2006.   Victoria, BC

Modeling & Data Analysis of Atmospheric CO$_2$, 2004.   National Oceanic & Atmospheric Administration

Data Assimilation for Atmospheric & Climate System Prediction, 2003. National Center for Atmospheric Research

Carbon Data-Model Assimilation (C-DAS) Summer Institute, 2002.   National Center for Atmospheric Research

North American Carbon Program, 2001.   National Center for Atmospheric Research

Carbon Modeling Consortium Meeting, 2001.   Princeton University

Ameriflux Conference, 1999.   Denver, CO

Stable Isotope Ecology Course, 1998.   University of Utah

Professional Associations

- American Geophysical Union
- American Association for the Advancement of Science
- American Meteorological Society

Peer Review Activities

Editorial Board Member for *Nature Scientific Reports*, 2011-2017.

Reviewer for Proceedings of the National Academy of Sciences, Tellus, Journal of Geophysical Research, Global Biogeochemical Cycles, Atmospheric Chemistry and Physics, Journal of Applied Meteorology, Agricultural & Forest Meteorology, NASA, NSERC.

Languages

Native-level proficiency in English, Mandarin Chinese, Japanese, and Taiwanese

Personal Interests

Zen meditation, hiking, skiing, karate, RedSox baseball