

Lu Xu

luxu@caltech.edu

Phone: 404-661-8182

1200 E California Blvd, MC 131-24, Pasadena, CA 91125

Website: <https://sites.google.com/view/luxu-atmospheric-chemistry>

APPOINTMENTS

- 2018.10 – now Staff Scientist, Division of Geological and Planetary Sciences, California Institute of Technology
- 2017.4 – 2018.10 Postdoctoral Scholar, Division of Geological and Planetary Sciences, California Institute of Technology
- 2016.8 – 2017.4 Postdoctoral Fellow, School of Chemical and Biomolecular Engineering, Georgia Institute of Technology

EDUCATION

- 2011.8 – 2016.8 Ph.D. Chemical Engineering, Georgia Institute of Technology
- 2007.9 – 2011.7 B.Eng. Chemical Engineering, Zhejiang University

RESEARCH INTERESTS

- Oxidative chemistry of atmospheric organic compounds
- Chemical characterization and source apportionment of ambient organic aerosol
- Impacts of atmospheric organic compounds on climate and human health

RESEARCH EXPERIENCE

Postdoctoral Scholar and Staff Scientist: Wennberg Group, 2017.4 – now

Division of Geological and Planetary Sciences, California Institute of Technology

- Develop Gas Chromatography Chemical Ionization Mass Spectrometry (GC-CIMS) to measure oxygenated volatile organic compounds.
- Investigate the unimolecular reactions of organic peroxy radicals derived from atmospheric organic compounds based on laboratory experiments and theoretical calculations.
- Investigate the atmospheric oxidation mechanisms of aromatic compounds.
- Study SO₂ global sources and budget based on the Atmospheric Tomography Mission (ATom)
- Participate in “Fire Influence on Regional to Global Environments and Air Quality (FIREX-AQ)” campaign, investigate the chemical transformation of trace gases and ozone formation in wildfire plumes, and assess the impacts of wildfire emissions on air quality.

Graduate Student: Ng Research Group, 2011.8 – 2016.8

School of Chemical and Biomolecular Engineering, Georgia Institute of Technology

- Thesis: Effects of Anthropogenic Emissions on Biogenic Organic Aerosol Formation in the Southeastern United States
- Participate in field measurements “Clean Air for London (ClearLo)”, “Southeastern Center for Air Pollution & Epidemiology (SCAPE)”, “Southern Oxidant and Aerosol Study (SOAS)”, and “Southeast Nexus (SENEX)”
- Conduct laboratory studies to study the organic aerosol formation from biogenic volatile organic compounds in Environmental Chamber Facilities in Georgia Tech and Pacific Northwest National Laboratory

AWARDS AND SCHOLARSHIPS

- Yuxiang Young Scholar Award, Chinese-American Oceanic and Atmospheric Association, 2018
- NOAA Climate and Global Change Postdoctoral Fellowship (alternate)
- Participant in Atmospheric Chemistry Colloquium for Emerging Senior Scientists (ACCESS) XIV, 2017
- Sigma Xi Best PhD Thesis Award, Georgia Tech Chapter, 2017.
- Graduate Student Awards in Environmental Chemistry, Division of Environmental Chemistry, American Chemical Society, 2016
- Outstanding Student Paper Award, American Geophysical Union, 2015
- Graduate Student Paper Award (First place), Environmental Division, American Institute of Chemical Engineers (AIChE), 2015
- Ziegler Best Proposal Award, School of Chemical and Biomolecular Engineering, Georgia Institute of Technology, 2014
- Air and Waste Management (A&WMA) Scholarship - Georgia Chapter, 2014
- Student Travel Grant, American Association for Aerosol Research (AAAR), 2013
- Exemplary Academic Achievement Award, School of Chemical and Biomolecular Engineering, Georgia Institute of Technology, 2012
- Outstanding Performance Award on Written Qualifying Exam, School of Chemical and Biomolecular Engineering, Georgia Institute of Technology, 2012

PEER-REVIEWED PUBLICATIONS (Google Scholar Citations = 2865, h-index = 27)

Google scholar page: <https://scholar.google.com/citations?user=QWxAcQ0AAAAJ&hl=en>

45. Rickly, P. S.; **Xu, L.**; Crouse, J. D.; Wennberg, P. O.; Rollins, A. W., Improvements to a laser-induced fluorescence instrument for measuring SO₂: impact on accuracy and precision. *Atmos. Meas. Tech. Discuss.* **2020**, 2020, 1-14.

44. Vasquez, K. T.; Crouse, J. D.; Schulze, B. C.; Bates, K. H.; Teng, A. P.; **Xu, L.**; Allen, H. M.; Wennberg, P. O., Rapid hydrolysis of tertiary isoprene nitrate efficiently removes NO_x from the atmosphere. *Proceedings of the National Academy of Sciences* **2020**, 202017442.

43. **Xu, L.**; Møller, K. H.; Crouse, J. D.; Kjaergaard, H. G.; Wennberg, P. O. New Insights into the Radical Chemistry and Product Distribution in the Oh-Initiated Oxidation of Benzene. *Environ Sci Technol* **2020**, *54*, 13467-13477.
42. Chen, Y.; Takeuchi, M.; Nah, T.; **Xu, L.**; Canagaratna, M. R.; Stark, H.; Baumann, K.; Canonaco, F.; Prévôt, A. S. H.; Huey, L. G.; Weber, R. J.; Ng, N. L., Chemical characterization of secondary organic aerosol at a rural site in the southeastern US: insights from simultaneous high-resolution time-of-flight aerosol mass spectrometer (HR-ToF-AMS) and FIGAERO chemical ionization mass spectrometer (CIMS) measurements. *Atmos. Chem. Phys.* **2020**, *20* (14), 8421-8440.
41. Møller, K. H.; Praske, E.; **Xu, L.**; Crouse, J. D.; Wennberg, P. O.; Kjaergaard, H. G., Stereoselectivity in Atmospheric Autoxidation. *The Journal of Physical Chemistry Letters* **2019**, 6260-6266.
40. Nah, T.; **Xu, L.**; Osborne-Benthaus, K. A.; White, S. M.; France, S.; Lee Ng, N., Mixing order of sulfate aerosols and isoprene epoxydiols affect secondary organic aerosol formation in chamber experiments. *Atmospheric Environment* **2019**, 116953.
39. Chen, Y.; **Xu, L.**; Humphry, T.; Hettiyadura, A. P. S.; Ovadnevaite, J.; Huang, S.; Poulain, L.; Schroder, J. C.; Campuzano-Jost, P.; Jimenez, J. L., et al. Response of the Aerodyne Aerosol Mass Spectrometer to Inorganic Sulfates and Organosulfur Compounds: Applications in Field and Laboratory Measurements. *Environ Sci Technol* **2019**, *53*, 5176-5186.
38. **Xu, L.**; Møller, K. H.; Crouse, J. D.; Otkjær, R. V.; Kjaergaard, H. G.; Wennberg, P. O. Unimolecular Reactions of Peroxy Radicals Formed in the Oxidation of A-Pinene and B-Pinene by Hydroxyl Radicals. *The Journal of Physical Chemistry A* **2019**, *123*, 1661-1674.
37. Vasquez, K. T.; Allen, H. M.; Crouse, J. D.; Praske, E.; **Xu, L.**; Noelscher, A. C.; Wennberg, P. O., Low-pressure gas chromatography with chemical ionization mass spectrometry for quantification of multifunctional organic compounds in the atmosphere. *Atmos. Meas. Tech.* **2018**, *11* (12), 6815-6832.
36. Liu, J.; Russell, L. M.; Ruggeri, G.; Takahama, S.; Claflin, M. S.; Ziemann, P. J.; Pye, H. O. T.; Murphy, B. N.; **Xu, L.**; Ng, N. L.; McKinney, K. A.; Budisulistiorini, S. H.; Bertram, T. H.; Nenes, A.; Surratt, J. D., Regional Similarities and NO_x-Related Increases in Biogenic Secondary Organic Aerosol in Summertime Southeastern United States. *Journal of Geophysical Research: Atmospheres* **2018**, *123* (18), 10,620-10,636.
35. Xing, L.; Shrivastava, M.; Fu, T.-M.; Roldin, P.; Qian, Y.; **Xu, L.**; Ng, N. L.; Shilling, J.; Zelenyuk, A.; Cappa, C. D., Parameterized Yields of Semivolatile Products from Isoprene Oxidation under Different NO_x Levels: Impacts of Chemical Aging and Wall-Loss of Reactive Gases. *Environ Sci Technol* **2018**, *52* (16), 9225-9234.
34. Massoli, P.; Stark, H.; Canagaratna, M. R.; Krechmer, J. E.; **Xu, L.**; Ng, N. L.; Mauldin, R. L.; Yan, C.; Kimmel, J.; Misztal, P. K.; Jimenez, J. L.; Jayne, J. T.; Worsnop, D. R., Ambient Measurements of Highly Oxidized Gas-Phase Molecules during the Southern Oxidant and Aerosol Study (SOAS) 2013. *ACS Earth and Space Chemistry* **2018**.
33. Hettiyadura, A. P. S.; **Xu, L.**; Jayarathne, T.; Skog, K.; Guo, H.; Weber, R. J.; Nenes, A.; Keutsch, F. N.; Ng, N. L.; Stone, E. A., Source apportionment of organic carbon in Centreville,

AL using organosulfates in organic tracer-based positive matrix factorization. *Atmospheric Environment* **2018**, *186*, 74-88.

32. Qin, M.; Hu, Y.; Wang, X.; Vasilakos, P.; Boyd, C. M.; **Xu, L.**; Song, Y.; Ng, N. L.; Nenes, A.; Russell, A. G., Modeling biogenic secondary organic aerosol (BSOA) formation from monoterpene reactions with NO₃: A case study of the SOAS campaign using CMAQ. *Atmospheric Environment* **2018**, *184*, 146-155.

31. Mao, J.; Carlton, A.; Cohen, R. C.; Brune, W. H.; Brown, S. S.; Wolfe, G. M.; Jimenez, J. L.; Pye, H. O. T.; Lee Ng, N.; **Xu, L.**; McNeill, V. F.; Tsigaridis, K.; McDonald, B. C.; Warneke, C.; Guenther, A.; Alvarado, M. J.; de Gouw, J.; Mickley, L. J.; Leibensperger, E. M.; Mathur, R.; Nolte, C. G.; Portmann, R. W.; Unger, N.; Tosca, M.; Horowitz, L. W., Southeast Atmosphere Studies: learning from model-observation syntheses. *Atmos. Chem. Phys.* **2018**, *18* (4), 2615-2651.

30. **Xu, L.**; Pye, H. O. T.; He, J.; Chen, Y.; Murphy, B. N.; Ng, N. L., Experimental and model estimates of the contributions from biogenic monoterpenes and sesquiterpenes to secondary organic aerosol in the southeastern United States. *Atmos. Chem. Phys.* **2018**, *18* (17), 12613-12637.

29. Kostenidou, E.; Karnezi, E.; Hite Jr, J. R.; Bougiatioti, A.; Cerully, K.; **Xu, L.**; Ng, N. L.; Nenes, A.; Pandis, S. N., Organic aerosol in the summertime southeastern United States: components and their link to volatility distribution, oxidation state and hygroscopicity. *Atmos. Chem. Phys.* **2018**, *18* (8), 5799-5819.

28. Ots, R., Heal, M. R., Young, D. E., Williams, L. R., Allan, J. D., Nemitz, E., Di Marco, C., Detournay, A., **Xu, L.**, Ng, N. L., Coe, H., Herndon, S. C., Mackenzie, I. A., Green, D. C., Kuenen, J. J. P., Reis, S., and Vieno, M.: Modelling carbonaceous aerosol from residential solid fuel burning with different assumptions for emissions, *Atmos. Chem. Phys.*, *18*, 4497-4518, 10.5194/acp-18-4497-2018, 2018.

27. Pye, H. O. T.; Zuend, A.; Fry, J. L.; Isaacman-VanWertz, G.; Capps, S. L.; Appel, K. W.; Foroutan, H.; **Xu, L.**; Ng, N. L.; Goldstein, A. H., Coupling of organic and inorganic aerosol systems and the effect on gas-particle partitioning in the southeastern US. *Atmos. Chem. Phys.* **2018**, *18* (1), 357-370.

26. Boyd, C. M.; Nah, T.; **Xu, L.**; Berkemeier, T.; Ng, N. L., Secondary Organic Aerosol (SOA) from Nitrate Radical Oxidation of Monoterpenes: Effects of Temperature, Dilution, and Humidity on Aerosol Formation, Mixing, and Evaporation. *Environ Sci Technol* **2017**.

25. Murphy, B. N.; Woody, M. C.; Jimenez, J. L.; Carlton, A. M. G.; Hayes, P. L.; Liu, S.; Ng, N. L.; Russell, L. M.; Setyan, A.; **Xu, L.**; Young, J.; Zaveri, R. A.; Zhang, Q.; Pye, H. O. T., Semivolatile POA and parameterized total combustion SOA in CMAQv5.2: impacts on source strength and partitioning. *Atmos. Chem. Phys.* **2017**, *17* (18), 11107-11133.

24. Di Lorenzo, R. A.; Washenfelder, R. A.; Attwood, A. R.; Guo, H.; **Xu, L.**; Ng, N. L.; Weber, R. J.; Baumann, K.; Edgerton, E. S.; Young, C. J., Molecular size separated brown carbon absorption for biomass burning aerosol at multiple field sites. *Environ Sci Technol* **2017**.

23. **Xu, L.**; Guo, H.; Weber, R. J.; Ng, N. L., Chemical Characterization of Water-Soluble Organic Aerosol in Contrasting Rural and Urban Environments in the Southeastern United States. *Environ Sci Technol* **2017**, *51* (1), 78-88.

22. Tuet, W. Y.; Chen, Y.; **Xu, L.**; Fok, S.; Gao, D.; Weber, R. J.; Ng, N. L., Chemical oxidative potential of secondary organic aerosol (SOA) generated from the photooxidation of biogenic and anthropogenic volatile organic compounds. *Atmos. Chem. Phys.* **2017**, *17*, (2), 839-853.
21. **Xu, L.**; Middlebrook, A. M.; Liao, J.; de Gouw, J. A.; Guo, H.; Weber, R. J.; Nenes, A.; Lopez-Hilfiker, F. D.; Lee, B. H.; Thornton, J. A.; Brock, C. A.; Neuman, J. A.; Nowak, J. B.; Pollack, I. B.; Welti, A.; Graus, M.; Warneke, C.; Ng, N. L., Enhanced formation of Isoprene-derived Organic Aerosol in Sulfur-rich Power Plant Plumes during Southeast Nexus (SENEX). *Journal of Geophysical Research: Atmospheres* **2016**.
20. Pye, H. O. T.; Murphy, B. N.; **Xu, L.**; Ng, N. L.; Carlton, A. G.; Guo, H.; Weber, R.; Vasilakos, P.; Appel, K. W.; Budisulistiorini, S. H.; Surratt, J. D.; Nenes, A.; Hu, W.; Jimenez, J. L.; Isaacman-VanWertz, G.; Misztal, P. K.; Goldstein, A. H., On the implications of aerosol liquid water and phase separation for organic aerosol mass. *Atmos. Chem. Phys.* **2017**, *17*, (1), 343-369.
19. Saha, P. K.; Khlystov, A.; Yahya, K.; Zhang, Y.; **Xu, L.**; Ng, N. L.; Grieshop, A. P., Quantifying the volatility of organic aerosol in the southeastern US. *Atmos. Chem. Phys.* **2017**, *17*, (1), 501-520.
18. Ots, R.; Young, D. E.; Vieno, M.; **Xu, L.**; Dunmore, R. E.; Allan, J. D.; Coe, H.; Williams, L. R.; Herndon, S. C.; Ng, N. L.; Hamilton, J. F.; Bergström, R.; Di Marco, C.; Nemitz, E.; Mackenzie, I. A.; Kuenen, J. J. P.; Green, D. C.; Reis, S.; Heal, M. R., Simulating secondary organic aerosol from missing diesel-related intermediate-volatility organic compound emissions during the Clean Air for London (ClearfLo) campaign. *Atmos. Chem. Phys.* **2016**, *16* (10), 6453-6473.
17. Lee, B. H.; Mohr, C.; Lopez-Hilfiker, F. D.; Lutz, A.; Hallquist, M.; Lee, L.; Romer, P.; Cohen, R. C.; Iyer, S.; Kurtén, T.; Hu, W.; Day, D. A.; Campuzano-Jost, P.; Jimenez, J. L.; **Xu, L.**; Ng, N. L.; Guo, H.; Weber, R. J.; Wild, R. J.; Brown, S. S.; Koss, A.; de Gouw, J.; Olson, K.; Goldstein, A. H.; Seco, R.; Kim, S.; McAvey, K.; Shepson, P. B.; Starn, T.; Baumann, K.; Edgerton, E. S.; Liu, J.; Shilling, J. E.; Miller, D. O.; Brune, W.; Schobesberger, S.; D'Ambro, E. L.; Thornton, J. A., Highly functionalized organic nitrates in the southeast United States: Contribution to secondary organic aerosol and reactive nitrogen budgets. *Proceedings of the National Academy of Sciences* **2016**, *113* (6), 1516-1521.
16. Pye, H. O. T.; Luecken, D. J.; **Xu, L.**; Boyd, C. M.; Ng, N. L.; Baker, K. R.; Ayres, B. R.; Bash, J. O.; Baumann, K.; Carter, W. P. L.; Edgerton, E.; Fry, J. L.; Hutzell, W. T.; Schwede, D. B.; and Shepson, P. B., Modeling the Current and Future Roles of Particulate Organic Nitrates in the Southeastern United States, *Environ Sci Technol*, *49*, 14195-14203, 10.1021/acs.est.5b03738, 2015.
15. Visser, S.; Slowik, J. G.; Furger, M.; Zotter, P.; Bukowiecki, N.; Canonaco, F.; Flechsig, U.; Appel, K.; Green, D. C.; Tremper, A. H.; Young, D. E.; Williams, P. I.; Allan, J. D.; Coe, H.; Williams, L. R.; Mohr, C.; **Xu, L.**; Ng, N. L.; Nemitz, E.; Barlow, J. F.; Haliou, C. H.; Fleming, Z. L.; Baltensperger, U.; Prévôt, A. S. H., Advanced source apportionment of size-resolved trace elements at multiple sites in London during winter. *Atmos. Chem. Phys.* **2015**, *15* (19), 11291-11309.
14. Liu, S.; Aiken, A. C.; Gorkowski, K.; Dubey, M. K.; Cappa, C. D.; Williams, L. R.; Herndon, S. C.; Massoli, P.; Fortner, E. C.; Chhabra, P. S.; Brooks, W. A.; Onasch, T. B.; Jayne, J. T.; Worsnop, D. R.; China, S.; Sharma, N.; Mazzoleni, C.; **Xu, L.**; Ng, N. L.; Liu, D.; Allan, J. D.;

Lee, J. D.; Fleming, Z. L.; Mohr, C.; Zotter, P.; Szidat, S.; Prevot, A. S. H., Enhanced light absorption by mixed source black and brown carbon particles in UK winter. *Nat Commun* **2015**, *6*.

13. Brock, C. A.; Wagner, N. L.; Anderson, B. E.; Attwood, A. R.; Beyersdorf, A.; Campuzano-Jost, P.; Carlton, A. G.; Day, D. A.; Diskin, G. S.; Gordon, T. D.; Jimenez, J. L.; Lack, D. A.; Liao, J.; Markovic, M. Z.; Middlebrook, A. M.; Ng, N. L.; Perring, A. E.; Richardson, M. S.; Schwarz, J. P.; Washenfelder, R. A.; Welti, A.; **Xu, L.**; Ziemba, L. D.; Murphy, D. M., Aerosol optical properties in the southeastern United States in summer – Part 1: Hygroscopic growth. *Atmos. Chem. Phys.* **2016**, *16* (8), 4987-5007.

12. **Xu, L.**; Williams, L. R.; Young, D. E.; Allan, J. D.; Coe, H.; Massoli, P.; Fortner, E.; Chhabra, P.; Herndon, S.; Brooks, W. A.; Jayne, J. T.; Worsnop, D. R.; Aiken, A. C.; Liu, S.; Gorkowski, K.; Dubey, M. K.; Fleming, Z. L.; Visser, S.; Prévôt, A. S. H.; Ng, N. L., Wintertime aerosol chemical composition, volatility, and spatial variability in the greater London area. *Atmos. Chem. Phys.* **2016**, *16*, (2), 1139-1160.

11. Cerully, K. M.; Bougiatioti, A.; Hite Jr, J. R.; Guo, H.; **Xu, L.**; Ng, N. L.; Weber, R.; Nenes, A., On the link between hygroscopicity, volatility, and oxidation state of ambient and water-soluble aerosols in the southeastern United States. *Atmos. Chem. Phys.* **2015**, *15* (15), 8679-8694.

10. Boyd, C. M.; Sanchez, J.; **Xu, L.**; Eugene, A. J.; Nah, T.; Tuet, W. Y.; Guzman, M. I.; Ng, N. L., Secondary organic aerosol formation from the β -pinene+NO₃ system: effect of humidity and peroxy radical fate. *Atmos. Chem. Phys.* **2015**, *15* (13), 7497-7522.

9. **Xu, L.**; Suresh, S.; Guo, H.; Weber, R. J.; Ng, N. L., Aerosol characterization over the southeastern United States using high-resolution aerosol mass spectrometry: spatial and seasonal variation of aerosol composition and sources with a focus on organic nitrates. *Atmos. Chem. Phys.* **2015**, *15* (13), 7307-7336.

8. Guo, H.; **Xu, L.**; Bougiatioti, A.; Cerully, K. M.; Capps, S. L.; Hite Jr, J. R.; Carlton, A. G.; Lee, S. H.; Bergin, M. H.; Ng, N. L.; Nenes, A.; Weber, R. J., Fine-particle water and pH in the southeastern United States. *Atmos. Chem. Phys.* **2015**, *15* (9), 5211-5228.

7. Verma, V.; Fang, T.; **Xu, L.**; Peltier, R. E.; Russell, A. G.; Ng, N. L.; Weber, R. J., Organic Aerosols Associated with the Generation of Reactive Oxygen Species (ROS) by Water-Soluble PM_{2.5}. *Environ Sci Technol* **2015**, *49* (7), 4646-4656.

6. Visser, S.; Slowik, J. G.; Furger, M.; Zotter, P.; Bukowiecki, N.; Dressler, R.; Flechsig, U.; Appel, K.; Green, D. C.; Tremper, A. H.; Young, D. E.; Williams, P. I.; Allan, J. D.; Herndon, S. C.; Williams, L. R.; Mohr, C.; **Xu, L.**; Ng, N. L.; Detournay, A.; Barlow, J. F.; Halios, C. H.; Fleming, Z. L.; Baltensperger, U.; Prévôt, A. S. H., Kerb and urban increment of highly time-resolved trace elements in PM₁₀, PM_{2.5} and PM_{1.0} winter aerosol in London during ClearfLo 2012. *Atmos. Chem. Phys.* **2015**, *15* (5), 2367-2386.

5. Washenfelder, R. A.; Attwood, A. R.; Brock, C. A.; Guo, H.; **Xu, L.**; Weber, R. J.; Ng, N. L.; Allen, H. M.; Ayres, B. R.; Baumann, K.; Cohen, R. C.; Draper, D. C.; Duffey, K. C.; Edgerton, E.; Fry, J. L.; Hu, W. W.; Jimenez, J. L.; Palm, B. B.; Romer, P.; Stone, E. A.; Wooldridge, P. J.; Brown, S. S., Biomass burning dominates brown carbon absorption in the rural southeastern United States. *Geophysical Research Letters* **2015**, 2014GL062444.

4. **Xu, L.**; Guo, H.; Boyd, C. M.; Klein, M.; Bougiatioti, A.; Cerully, K. M.; Hite, J. R.; Isaacman-VanWertz, G.; Kreisberg, N. M.; Knote, C.; Olson, K.; Koss, A.; Goldstein, A. H.; Hering, S. V.; de Gouw, J.; Baumann, K.; Lee, S.-H.; Nenes, A.; Weber, R. J.; Ng, N. L., Effects of anthropogenic emissions on aerosol formation from isoprene and monoterpenes in the southeastern United States. *Proceedings of the National Academy of Sciences* **2015**, *112* (1), 37-42.

3. Bohnenstengel, S. I.; Belcher, S. E.; Aiken, A.; Allan, J. D.; Allen, G.; Bacak, A.; Bannan, T. J.; Barlow, J. F.; Beddows, D. C. S.; Bloss, W. J.; Booth, A. M.; Chemel, C.; Coceal, O.; Di Marco, C. F.; Dubey, M. K.; Faloon, K. H.; Fleming, Z. L.; Furger, M.; Gietl, J. K.; Graves, R. R.; Green, D. C.; Grimmond, C. S. B.; Halios, C. H.; Hamilton, J. F.; Harrison, R. M.; Heal, M. R.; Heard, D. E.; Helfter, C.; Herndon, S. C.; Holmes, R. E.; Hopkins, J. R.; Jones, A. M.; Kelly, F. J.; Kotthaus, S.; Langford, B.; Lee, J. D.; Leigh, R. J.; Lewis, A. C.; Lidster, R. T.; Lopez-Hilfiker, F. D.; McQuaid, J. B.; Mohr, C.; Monks, P. S.; Nemitz, E.; Ng, N. L.; Percival, C. J.; Prévôt, A. S. H.; Ricketts, H. M. A.; Sokhi, R.; Stone, D.; Thornton, J. A.; Tremper, A. H.; Valach, A. C.; Visser, S.; Whalley, L. K.; Williams, L. R.; **Xu, L.**; Young, D. E.; Zotter, P., Meteorology, air quality, and health in London: The ClearfLo project. *B Am Meteorol Soc* 2014.

2. **Xu, L.**; Kollman, M. S.; Song, C.; Shilling, J. E.; Ng, N. L., Effects of NO_x on the Volatility of Secondary Organic Aerosol from Isoprene Photooxidation. *Environ Sci Technol* 2014, *48*, (4), 2253-2262.

1. Mohr, C.; Lopez-Hilfiker, F. D.; Zotter, P.; Prevot, A. S. H.; **Xu, L.**; Ng, N. L.; Herndon, S. C.; Williams, L. R.; Franklin, J. P.; Zahniser, M. S.; Worsnop, D. R.; Knighton, W. B.; Aiken, A. C.; Gorkowski, K. J.; Dubey, M. K.; Allan, J. D.; Thornton, J. A., Contribution of Nitrated Phenols to Wood Burning Brown Carbon Light Absorption in Detling, United Kingdom during Winter Time. *Environ Sci Technol* 2013, *47*, (12), 6316-6324.

INVITED PRESENTATIONS

3. Oxidative Chemistry of Atmospheric Trace Gases in the Anthropocene, Department of Chemical Engineering, University of Utah, February 2020.

2. Towards understanding the sources and formation mechanisms of atmospheric organic aerosols, Department of Mechanical Engineering, University of Minnesota, March 2018.

1. Effects of Anthropogenic Emissions on Biogenic Organic Aerosol Formation in the Southeastern United States, Carnegie Mellon University, June 2016.

PLATFORM PRESENTATIONS

14. **Xu, L.**, Møller, K. H., Crounse, J. D., Kjaergaard, H. G., Wennberg, P. O., “New Insights into the Radical Chemistry and Product Distribution in the Oh-Initiated Oxidation of Benzene”, *Atmospheric Chemical Mechanisms Conference*, Virtual, November 9-20, 2020.

13. **Xu, L.** “Ozone Production from Wildfires during FIREX-AQ”, *FIREX-AQ Science Team Meeting*, Virtual, July 2, 2020.

12. **Xu, L.**, Møller, K. H., Crounse, J. D., Otkjær, R. V., Kjaergaard, H. G., Wennberg, P. O., “Unimolecular reactions of peroxy radical in the oxidation of α -pinene and β -pinene by hydroxyl radical”, *American Geophysical Union Fall Meeting*, Washington, DC, December 10-14, 2018.

11. **Xu, L.**, Pye, H.O.T., He, J., Chen, Y., Murphy, B.N., Ng, N.L., “Significant Organic Aerosol Formation from Biogenic Volatile Organic Compounds in the Southeastern United States”, *American Association for Aerosol Research Annual Conference*, Raleigh, NC, October 16-20, 2017.
10. **Xu, L.**, Pye, H.O.T., He, J., Chen, Y., Murphy, B.N., Ng, N.L., “Large Contributions from Biogenic Carbon to Organic Aerosol in the Southeastern United States”, *Atmospheric Chemistry Colloquium for Emerging Senior Scientists (ACCESS) XIV*, Long Island, NY, July 27-30, 2017.
9. **Xu, L.**, Middlebrook, A. M., Liao, J., de Gouw, J. A., Guo, H., Weber, R. J., Nenes, A., Lopez-Hilfiker, F. D., Lee, B. H., Thornton, J. A., Brock, C. A., Neuman, J. A., Nowak, J. B., Pollack, I. B., Welti, A., Graus, M., Warneke, C., Ng, N. L., “Enhanced formation of Isoprene-derived Organic Aerosol in Sulfur-rich Power Plant Plumes during Southeast Nexus (SENEX)”, *American Association for Aerosol Research Annual Conference*, Portland, OR, October 17-21, 2016.
8. **Xu, L.**, Williams, L. R., Young, D. E., Allan, J. D., Coe, H., Massoli, P., Fortner, E., Chhabra, P., Herndon, S., Aiken, A., Gorkowski, K., Dubey, M., Fleming, Z. L., Ng, N. L., “Wintertime Aerosol Chemical Composition, Volatility, and Spatial Variability in the Greater London Area”, *American Geophysical Union Fall Meeting*, San Francisco, CA, December 14-18, 2015.
7. **Xu, L.**, Middlebrook, A. M., Liao, J., de Gouw, J. A., Welti, A., Guo, H., Lin, J., Bougiatioti, A., Weber, R. J., Nenes, A., Lee, B. H., Thornton, J. A., Holloway, J.S., Gilman, J. B., Lerner, B. M., Graus, M., Warneke, C., Trainer, M. K., Ng, N. L., “Aircraft Measurement of Isoprene-derived Organic Aerosol during the Southeast Nexus (SENEX) Campaign Using an Aerosol Mass Spectrometer”, *American Association of Aerosol Research Annual Conference*, Minneapolis, MN, October 12-16, 2015.
6. **Xu, L.**, Guo, H., Boyd, C., Bougiatioti, A., Cerully, K., Hite, J., Nenes, A., Weber, R.J., Klein, M., Isaacman-VanWertz, G., Olson, K., Goldstein, A.H., Kreisberg, N.K., Hering, S.V., Knote, C., Koss, A., de Gouw, J.A., Baumann, K., Lee, S.H., Ng, N. L., “Effects of Sulfate on Aerosol Formation from Isoprene in the Southeastern United States”, *Southern Aerosol Study Modeling Workshop*, Princeton, NJ, June 8-10, 2015.
5. **Xu, L.**, Guo, H., Boyd, C., Bougiatioti, A., Cerully, K., Hite, J., Nenes, A., Weber, R. J., Klein, M., Isaacman-VanWertz, G., Olson, K., Goldstein, A. H., Kreisberg, N. K., Hering, S. V., Knote, C., Koss, A., de Gouw, J. A., Baumann, K., Lee, S. H., Ng, N. L., “Effects of Anthropogenic Emissions on Aerosol Formation from Isoprene and Monoterpenes in the Southeastern United States”, *Engineering Sustainability Conference*, Pittsburg, PA, April 19-21, 2015.
4. **Xu, L.**, Guo, H., Boyd, C., Cerully, K., Bougiatioti, A., King, L., Weber, R., Nenes, A. Ng, N. L., “Chemical Characterization of Organic Aerosol during SOAS Using High Resolution Aerosol Mass Spectrometer”, *American Association for Aerosol Research Annual Conference*, Orlando, FL, October 20-24, 2014.
3. **Xu, L.**, Guo, H., Boyd, C., Cerully, K., Bougiatioti, A., King, L., Weber, R., Nenes, A. Ng, N. L., “Chemical Characterization of Organic Aerosol During SOAS Using High Resolution Aerosol Mass Spectrometer”, *Southeast Atmosphere Study (SAS) Data Workshop*, Boulder, CO, March 31-April 2, 2014.
2. **Xu, L.**, Guo, H., King, L., Weber, R. J., Cerully, K., Bougiatioti, A., Nenes, A., Weber, R., Ng, N. L., “Chemical Characterization of Water Soluble Organic Aerosol During SOAS Using High

Resolution Mass Spectrometer”, *American Geophysical Union Fall Meeting*, San Francisco, CA, December 9-13, 2013.

1. **Xu, L.**, Guo, H., Weber, R. J., King, L., Verma, V., Ng, N. L., “A Study of Secondary Organic Aerosol Formation Influenced by Mixed Anthropogenic and Biogenic Emissions in Atlanta Area by High Resolution Mass Spectrometer”, *American Association for Aerosol Research Annual Conference*, Portland, OR, September 30-October 4, 2013.

POSTER PRESENTATIONS

7. **Xu, L.** and FIREX-AQ team “Ozone Production from Wildfires during FIREX-AQ”, *American Geophysical Union Fall Meeting*, Virtual, December 1-17, 2020.

6. **Xu, L.**, Pye, H.O.T., He, J., Chen, Y., Murphy, B.N., Ng, N.L., “Large Contributions from Biogenic Carbon to Organic Aerosol in the Southeastern United States”, *Gordon Research Conference Atmospheric Chemistry*, Newry, ME, July 30 – August 4, 2017.

5. **Xu, L.**, Guo, H., Weber, R. J., Ng, N. L., "Chemical Characterization of Water Soluble Organic Aerosol in Contrasting Rural and Urban Environments in the Southeastern United States", *American Association for Aerosol Research Annual Conference*, Portland, OR, October 17-21, 2016.

4. **Xu, L.**, Middlebrook, A. M., Liao, J., de Gouw, J. A., Guo, H., Weber, R. J., Nenes, A., Lopez-Hilfiker, F. D., Lee, B. H., Thornton, J. A., Brock, C. A., Neuman, J. A., Nowak, J. B., Pollack, I. B., Welti, A., Graus, M., Warneke, C., Ng, N. L., “Enhanced formation of Isoprene-derived Organic Aerosol in Sulfur-rich Power Plant Plumes during Southeast Nexus (SENEX)”, *International Global Atmospheric Chemistry*, Breckenridge, CO, September 26-30, 2016.

3. **Xu, L.**, Guo, H., Weber, R. J., Ng, N. L., "Ubiquitous Presence of Particle-phase Organic Nitrates in the Southeastern United States", *American Geophysical Union Fall Meeting*, San Francisco, CA, December 14-18, 2015.

2. **Xu, L.**, Williams, L. R., Young, D. E., Allan, J. D., Coe, H., Massoli, P., Fortner, E., Chhabra, P., Herndon, S., Aiken, A., Gorkowski, K., Dubey, M., Fleming, Z. L., Ng, N. L., “Chemical characterization of organic aerosol in greater London area using high resolution aerosol mass spectrometry: aerosol volatility and spatial distribution”, *American Association of Aerosol Research Annual Conference*, Minneapolis, MN, October 12-16, 2015.

1. **Xu, L.**, Middlebrook, A., Liao, J., Welti, A., Guo, H., Weber, R., Nenes, A., Holloway, J., Gilman, J., Lerner, B., Graus, M., Warneke, C., Trainer, M., de Gouw, J., Ng, N. L., “Aircraft Measurement of Isoprene-derived Organic Aerosol during the Southeast Nexus (SENEX) Campaign Using an Aerosol Mass Spectrometer”, *American Geophysical Union Fall Meeting*, San Francisco, CA, December 15-19, 2014.

TEACHING EXPERIENCE

- Guest lecture, Atmospheric Chemistry (2017 Spring), Georgia Institute of Technology
- Guest lecture, Aerosol Chemistry and Air Quality (2016 Fall), Georgia Institute of Technology
- Teaching assistant, Transport Processes I (2014 Fall), Georgia Institute of Technology

- Teaching assistant, Chemical Process Principles (2013 Fall), Georgia Institute of Technology
- Teaching assistant, Mathematical Modeling of Chemical Processes (2012 Fall), Georgia Institute of Technology

PROFESSIONAL MEMBERSHIPS

- American Association of Aerosol Research (AAAR)
- American Geophysical Union (AGU)
- American Institute of Chemical Engineers (AIChE)
- American Chemical Society (ACS)

SERVICE

- Reviewer for journals: Nature, Nature Communication, Science Advances, Proceedings of the National Academy of Sciences, Environmental Science & Technology, Atmospheric Chemistry and Physics, Journal of Geophysical Research: Atmospheres, Geophysical Research Letters, Environmental Science: Progress & Impact, Environmental Pollution, International Journal of Environmental Research and Public Health, Atmosphere, Condensed Matter, Journal of Industrial and Engineering Chemistry.
- Reviewer for funding proposals: National Oceanic and Atmospheric Administration (NOAA)