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Education and Training

Harvard Univ., Cambridge, MA	B.A.	Chemistry	1963
Harvard Univ., Cambridge, MA	Ph.D.	Chemistry	1969
Harvard School of Public Health, Boston, MA	M.S.	Air Pollution	1973
Massachusetts Inst. Tech., Cambridge, MA	Post-Doc	Chemistry	1969 – 1970
Harvard Univ., Cambridge, MA	Post-Doc	Chemistry	1970 - 1972

Appointments

Assoc. Chair for Academics, Department of Environmental Sciences and Engineering, Gillings School of Global Public Health, University of North Carolina-Chapel Hill 2018-

Professor, Department of Environmental Sciences and Engineering, Gillings School of Global Public Health, University of North Carolina-Chapel Hill. 1986-

Associate Professor, Department of Environmental Sciences and Engineering, Gillings School of Global Public Health, University of North Carolina-Chapel Hill. 1982-86

Assistant Professor, Department of Environmental Sciences and Engineering, Gillings School of Global Public Health, University of North Carolina-Chapel Hill. 1979-82

Research Associate, Harvard School of Public Health, Boston, MA. 1973-79

EPA Fellowship, towards MS in Air Pollution, Harvard School of Public Health 1972-73

Awards and Honors

1986 - 1987 Fogarty International Fellowship, Université Louis Pasteur, Strasbourg, FR.

1972 – 1973 EPA Fellowship, towards MS in Air Pollution, Harvard School of Public Health

Publications for last 5 years

+Committee chair, *Committee member

1. Elyse Rodgers-Vieira, Zhenfa Zhang, Alden Adrion*, Avram Gold, Michael Aitken,” Identification of Anthraquinone-Degrading Bacteria in Soil Contaminated with Polycyclic Aromatic Hydrocarbons”, *Appl. Environ. Microbiol.*, **2015**, *81*, 3775–3781 (doi:10.1128/AEM.00033-15).
2. Matthieu Riva, Sophie Tomaz, Tianqu Cui, Ying-Hsuan Lin, Emilie Perraudin, Avram Gold, Elizabeth A. Stone, Eric Villenave, Jason D. Surratt, “Evidence for an Unrecognized Secondary Anthropogenic Source of Organosulfates and Sulfonates: Gas-Phase Oxidation of Polycyclic Aromatic Hydrocarbons in the Presence of Sulfate Aerosol”, *Environ. Sci. Technol.* **2015** (DOI: 10.1021/acs.est.5b00836).
3. Matthieu Riva, Sri Hapsari Budisulistiorini*, Zhenfa Zhang, Avram Gold, Jason D.Surratt, “Chemical Characterization of Secondary Organic Aerosol Constituents from Isoprene Ozonolysis in

- the Presence of Acidic Aerosol”, *Atmos. Environ.* **2016**, *130*, 5–13 (DOI: 10.1016/j.atmosenv.2015.06.027)
4. S. H. Budisulistiorini*, X. Li, S. T. Bairai, J. Renfro, Y. Liu, Y. J. Liu, K. A. McKinney, S. T. Martin, V. F. McNeill, H. O. T. Pye, A. Nenes, M. E. Neff, E. A. Stone, S. Mueller, C. Knote, S. L. Shaw, Z. Zhang, A. Gold, J. D. Surratt, “Examining the effects of anthropogenic emissions on isoprene-derived secondary organic aerosol formation during the 2013 Southern Oxidant and Aerosol Study (SOAS) at the Look Rock, Tennessee ground site”, *Atmos. Chem. Phys.* **2015**, *15*, 8871–8888 (doi:10.5194/acp-15-8871-2015).
 5. Amanda J Kramer, Weruka Rattanavaraha*, Zhenfa Zhang, Avram Gold, Jason Douglas Surratt, Ying-Hsuan Lin, “Assessing the Oxidative Potential of Isoprene-Derived Epoxides and Secondary Organic Aerosol”, *Atmos. Environ.* **2016**, *130*, 211–218 (e-pub 10/20/15; DOI: 10.1016/j.atmosenv.2015.10.018).
 6. Riedel, T. P.; Lin*, Y.-H.; Budisulistiorini*, S. H.; Gaston, C. J.; Thornton, J. A.; Zhang, Z.; Vizuete, W. G.; Gold, A.; Surratt, J. D., “Heterogeneous Reactions of Isoprene-Derived Epoxides: Reaction Probabilities and Molar SOA Yield Estimates”, *Environ. Sci. Technol. Lett.*, **2015**, *2*, 38–42 (e-pub 01/14/15; DOI: 10.1021/ez500406f)..
 7. Phillip A. Wages*, Katelyn S. Lavrich+, Zhenfa Zhang, Wan-Yun Cheng, Elizabeth Corteselli*, Avram Gold, Philip Bromberg, Steven O. Simmons, and James M. Samet, “Protein Sulfenylation: A Novel Readout of Environmental Oxidant Stress”, *Chem. Res. Toxicol.*, **2015**, *28*, 2411–2418 (e-pub. 12/25/15; DOI: 10.1021/acs.chemrestox.5b00424).
 8. F. D. Lopez-Hilfiker, C. Mohr1, E. L. D’Ambro, A. Lutz, T. P. Riedel, C. J. Gaston, S. Iyer, Z. Zhang, A. Gold, J. D. Surratt, B. H. Lee, T. Kurten, W.W. Hu, J. Jimenez, M. Hallquist, J. A. Thornton,” Molecular composition and volatility of organic aerosol in the Southeastern U.S.: implications for IEPOX derived SOA”, *Environ. Sci. Technol.* **2016**, *50*, 2200 – 2209 (e-pub 01/26/16; DOI: 10.1021/acs.est.5b04769).
 9. W. Rattanavaraha*, K. Chu, S. H. Budisulistiorini*, M. Riva, Y.-H. Lin, E. S. Edgerton, K. Baumann, S. L. Shaw, H. Guo, L. King, R. J. Weber, E. A. Stone, M. E. Neff, J. H. Offenberg, Z. Zhang, A. Gold, J. D. Surratt, “Assessing the impact of anthropogenic pollution on isoprene-derived secondary organic aerosol formation in PM_{2.5} collected from the Birmingham, Alabama ground site during the 2013 Southern Oxidant and Aerosol Study”, *Atmos. Chem. Phys.* **2016**, *16*, 4897 – 4914 (accepted for publication 03/06/16; doi: 10.5194/acp-16-4897-2016).
 10. S. H. Budisulistiorini*, K. Baumann, E. S. Edgerton, S. T. Bairai, S. Mueller, S. L. Shaw, E. M. Knipping, A. Gold, and J. D. Surratt, “Seasonal Characterization of Submicron Aerosol Chemical Composition and Organic Aerosol Sources in the Southeastern United States: Atlanta, Georgia and Look Rock, Tennessee”, *Atmos. Chem. Phys.* **2016**, *16*, 5171–5189 (doi:10.5194/acp-16-5171-2016).
 11. Matthieu Riva, David M. Bell, Anne-Maria Kaldal Hansen, Greg T. Drozd, Zhenfa Zhang, Avram Gold, Dan Imre, Jason D. Surratt, Marianne Glasius, Alla Zelenyuk, “Effect of Organic Coatings, Humidity and Aerosol Acidity on Multiphase Chemistry of Isoprene Epoxydiols”, *Environ. Sci. Technol.*, **2016**, *50*, 5580– 5588 (doi: 10.1021/acs.est.5b06050).
 12. Riedel, T. P.; Lin, Y.-H. *; Zhang, Z.; Chu, K.; Thornton, J. A.; Vizuete, W.; Gold, A.; Surratt, J. D. “Constraining Condensed-Phase Formation Kinetics of Secondary Organic Aerosol Components from Isoprene Epoxydiols”, *Atmospheric Chemistry & Physics*, **2016**, *16*, 1245–1254.
 13. Jiumeng Liu, Emma L. D’Ambro, Ben H. Lee, Felipe Lopez-Hilfiker, Rahul A. Zaveri, Jean C. Rivera-Rios, Frank N. Keutsch, Siddharth Iyer, Theo Kurten, Zhenfa Zhang, Avram Gold, Jason D. Surratt, John E. Shilling, Joel A. Thornton, “Efficient organic aerosol formation from isoprene photooxidation in pristine conditions”, *Environ. Sci. Technol.* **2016**, *50*, 9872–9880; DOI: 10.1021/acs.est.6b01872 (e-pub 08/22/16)..
 14. Ying-Hsuan Lin*, Maiko Arashiro, Elizabeth Martin, Yuzhi Chen, Zhenfa Zhang, Kenneth G. Sexton, Avram Gold, Ilona Jaspers, Rebecca C. Fry, Jason D. Surratt, “Isoprene-Derived Secondary Organic Aerosol Induces the Expression of Oxidative Stress Response Genes in Human Lung Cells”, *Environ. Sci. Technol. Lett.* **2016**, *3*, 250 – 254; doi: 10.1021/acs.estlett.6b00151.

15. Maiko Arashiro, Ying-Hsuan Lin*, Kenneth G. Sexton, Zhenfa Zhang, Ilona Jaspers, Rebecca C. Fry, William G. Vizuete, Avram Gold, Jason D. Surratt, "In Vitro Exposure to Isoprene-Derived Secondary Organic Aerosol by Direct Deposition 2 and its Effects on COX-2 and IL-8 Gene Expression", *Atmos. Chem. Phys. D*, 05/13/16.
16. Matthieu Riva, Sri H. Budisulistiorini*, Yuzhi Chen, Zhenfa Zhang, Emma D'Ambro, Xuan Zhang, Avram Gold, Barbara J. Turpin, Joel A. Thornton, Manjula R. Canagaratna, Jason D. Surratt, "Chemical Characterization of Secondary Organic Aerosol from Oxidation of Isoprene Hydroxyhydroperoxides", *Environ. Sci. Technol.* **2016**, *50*, 9889–9899; DOI: 10.1021/acs.est.6b02511 (e-pub 07/28/16).
17. Esra Mutlu, Lina Gao*, Leonard B. Collins, Nigel J. Walker, James R. Olson, Wei Sun, Avram Gold, Louise M. Ball, James A. Swenberg, "Polychlorinated Biphenyls (PCBs) Induce Oxidative DNA Adducts In Female Sprague-Dawley Rats", *Chem. Res. Toxicol.*, **2016**, *29*, 1335–1344; DOI: 10.1021/acs.chemrestox.6b00146 (e-pub 07/20/16).
18. M. Riva, T. Da Silva Barbosa, Y.-H. Lin*, E. A. Stone, A. Gold, and J. D. Surratt, "Characterization of Organosulfates in Secondary Organic Aerosol Derived from the Photooxidation of Long-Chain Alkanes", *Atmos. Chem. Phys.*, **2016**, *16*, 11001–11018; accepted for publication 08/10/16, doi:10.5194/acp-2016-20, 2016.
19. Maiko Arashiro, Ying-Hsuan Lin, Kenneth G. Sexton, Zhenfa Zhang, Ilona Jaspers, Rebecca C. Fry, William G. Vizuete, Avram Gold, Jason D. Surratt, "In Vitro Exposures to Isoprene-Derived Secondary Organic Aerosol: Assessing the Effects on Inflammation-Associated Gene Expression in Human Bronchial Epithelial Cells using a Direct Deposition Approach", *Environ. Sci. Technol.* **2016**, *50* (accepted 10/17/16).
20. Neha Sareen, Annmarie G. Carlton, Jason D. Surratt, Avram Gold, Ben Lee, Felipe D. Lopez-Hilfiker, Claudia Mohr, Joel A. Thornton, Zhenfa Zhang, Yong B. Lim, Barbara J. Turpin, "Identifying precursors and aqueous organic aerosol formation pathways during the SOAS campaign", *Atmos. Chem. Phys.* **2016**, *16*, 14409–14420; accepted 10/24/16; doi:10.5194/acp-16-14409-2016.
21. Matthieu Riva, Sri H. Budisulistiorini*, Zhenfa Zhang, Avram Gold, Joel A. Thornton, 5 Barbara J. Turpin, Jason D. Surratt, "Multiphase Reactivity of Gaseous Hydroperoxide Oligomers Produced from Isoprene Ozonolysis in the Presence of Acidified Aerosols", *Atmos. Environ.* **2017**, *152*, 314–32; accepted 12/20/16.; doi.org/10.1016/j.atmosenv.2016.12.040.
22. Emma L. D'Ambro, Ben H. Lee, Jiumeng Liu, John E. Shilling, Cassandra J. Gaston, Felipe D. Lopez-Hilfiker, Siegfried Schobesberger, Rahul A. Zaveri, Claudia Mohr, Anna Lutz, Zhenfa Zhang, Avram Gold, Jason D. Surratt, Jean C. Rivera-Rios, Frank N. Keutsch, Joel A. Thornton, "Molecular composition and volatility of isoprene photochemical oxidation secondary organic aerosol under low- and high-NO_x conditions", *Atmos. Chem. Phys.*, **2017**, *17*, 159–174; doi:10.5194/acp-17-159-2017; accepted 05/12/16.
23. Takasumi Shimomoto; Leonard B. Collins; Xianwen Yi; Darcy W. Holley; Zhenfa Zhang; Xu Tian; Koji Uchida; Chunguang Wang, Sohvi Hörrkkö; Monte S. Willis; Avram Gold; Scott Bultman; Jun Nakamura, "A purified MAA-based ELISA is a useful tool for determining anti-MAA antibody titer with high sensitivity", *PLOS ONE*, (accepted 02/01/17)
24. A. Venkatratnam, S. Furuya, O. Kosyk, A. Gold, W. Bodnar, K. Konganti, D. W. Threadgill, K. M. Gillespie, D. L. Aylor, F. A. Wright, W. A. Chiu¹, I. Rusyn, "Collaborative Cross mouse population enables refinements to characterization of the variability in toxicokinetics of trichloroethylene and provides genetic evidence for the role of PPAR pathway in its oxidative metabolism", *Tox. Sci.* **2017**, *158*, 48–62; doi.org/10.1093/toxsci/kfx065 (e-pub 03/27/17).
25. W. Rattanavaraha, M. R. Canagaratna, S. H. Budisulistiorini, P. L. Croteau, K. Baumann, F. Canonaco, E. S. Edgerton, Z. Zhenfa, J. T. Jayne, D. R. Worsnop, A. Gold, S. L. Shaw J. D. Surratt "Source Apportionment of Submicron Organic Aerosol Collected from Atlanta, Georgia, During 2014-2015 Using the Aerosol Chemical Speciation Monitor (ACSM)", *Atmos. Environ.* **2017**

26. Thais S. Barbosa, Matthieu Riva, Yuzhi Chen, Cleyton M. da Silva, Jose Claudino S. Ameidae, Zhenfa Zhang, Avram Gold, Graciela Arbilla, Glauco F. Bauerfeldt, Jason D. Surratt, "Chemical Characterization of Organosulfates from the Hydroxyl Radical-Initiated Oxidation and Ozonolysis of *cis*-3-hexen-1-ol", *Atmos. Environ.* **2017** (accepted 04/19/17).
27. Xuan Zhang, Andrew T. Lambe, Mary Alice Upshur, William A. Brooks, Ariana Gray Be, Regan J. Thomson, Franz M. Geiger, Jason Douglas Surratt, Zhenfa Zhang, Avram Gold, Stephan Graf, Michael J. Cubison, Michael Groessl, John T. Jayne, Douglas R. Worsnop, Manjula R. Canagaratna, "Highly Oxygenated Multifunctional Compounds in α -pinene Secondary Organic Aerosol", *Environ. Sci. Technol.* **2017**, *51*, 5932–5940; DOI: 10.1021/acs.est.6b06588 (e-pub 04/26/17).
28. Zhenyu Tian, Avram Gold, Jun Nakamura, Zhenfa Zhang, Joaquim Vila, David R. Singleton, Leonard Bruce Collins, Michael D. Aitken, "Non-target analysis reveals a bacterial metabolite of pyrene implicated in the genotoxicity of contaminated soil after bioremediation," *Environ. Sci. Technol.* **2017**, *51*, 7091–7100; DOI: 10.1021/acs.est.7b01172 (e-pub 05/16/17).
29. Gao, L., Mutlu, E., Collins, L. B., Walker, N. J., Hartwell, H. J., Olson, J. R., Sun, W., Gold, A., Ball, L. M., and Swenberg, J. A., "Oxidative DNA product formation in female Sprague-Dawley rats following polyhalogenated aromatic hydrocarbon (PHAH) exposure", *Chem. Res. Toxicol.* **2017**, *30*, 794–803; DOI: 10.1021/acs.chemrestox.6b00368 (e-pub 02/16/17).
30. Ying-Hsuan Lin, Maiko Arashiro, Phillip W. Clapp, Tianqu Cui, Kenneth G. Sexton, William Vizuete, Avram Gold, Ilona Jaspers, Rebecca C Fry, Jason Douglas Surratt, "Gene Expression Profiling in Human Lung Cells Exposed to Isoprene-Derived Secondary Organic Aerosol", *Environ. Sci. Technol.* **2017**, *51*, 8166–8175; DOI: 10.1021/acs.est.7b01967 (e-pub 06/21/17).
31. Jun Nakamura, Takasumi Shimomoto, Leonard B Collins, Darcy W Holley, Zhenfa Zhang, Jenna M Barbee, Sharma Vyom, Xu Tian, Tomohiro Kondo, Koji Uchida, Xianwen Yi, Diana O Perkins, Monte S Willis, Avram Gold, Scott J. Bultman, "Evidence that endogenous formaldehyde produces immunogenic and atherogenic epitopes", *Sci. Rep. (Nature)*, **2017** accepted 08/23/17.
32. Arashiro, Maiko, Lin, Ying-Hsuan, Zhang, Zhenfa, Sexton, Kenneth, Gold, Avram, Jaspers, Ilona, Fry, Rebecca C., Surratt, Jason, "Effect of Secondary Organic Aerosol from Isoprene-Derived Hydroxyhydroperoxides on the Expression of Oxidative Stress Response Genes in Human Bronchial Epithelial Cells", *Environ. Sci.: Processes Impacts*, **2018**, *20*, 332–339. (doi: 10.1039/c7em00439g).
33. Amy Lynne Bondy, Rebecca Lynn Craig, Zhenfa Zhang, Avram Gold, Jason Douglas Surratt, and Andrew P Ault, "Isoprene-Derived Organosulfates: Vibrational Mode Analysis by Raman Spectroscopy, Acidity-Dependent Spectral Modes, and Observation in Individual Atmospheric Particles", *J. Phys. Chem. A*, **2018**, *122* (1), 303–315, DOI: 10.1021/acs.jpca.7b10587 (e-pub 12/08/17).
34. Zachary Robbins, Wanda Bodnar, Zhenfa Zhang, Avram Gold, and Leena A. Nylander-French, "Trisaminohexyl Isocyanurate, a Urinary Biomarker of HDI Isocyanurate Exposure", *J. Chromatogr. B*, **2018**, (accepted 01/15/18).
35. Yue Zhang, Yuzhi Chen, Andrew T. Lambe, Nicole E. Olson, Ziyang Lei, Rebecca L. Craig, Zhenfa Zhang, Avram Gold, Timothy B. Onasch, John T. Jayne, Douglas R. Worsnop, Cassandra J. Gaston, Joel A. Thornton, William Vizuete, Andrew P. Ault, Jason D. Surratt, "Effect of Aerosol-Phase State on Secondary Organic Aerosol Formation from the Reactive Uptake of Isoprene-Derived Epoxydiols (IEPOX)", *Environ. Sci. Technol. Lett.* **2018**, *5* (3), 167–174; (accepted 02/06/18).
36. Ariel J. Atkinson, Jingbo Wang, Zhenfa Zhang, Avram Gold, David Jung, Daina Zeng, Angela Pollard, Orlando Coronell, "Grafting of Bioactive 2-Aminoimidazole into Active Layer Makes Commercial RO/NF Membranes Anti-biofouling," *Membrane Science*, **2018**, *556*, 85–97 (accepted for publication 03/16/18).
37. Tianqu Cui, Zhexi Zeng, Erickson O. dos Santos, Zhenfa Zhang, Yuzhi Chen, Yue Zhang, Caitlin A. Rose, Sri H. Budisulistiorini, Leonard B. Collins, Wanda M. Bodnar, Rodrigo A. F. Souza³, Scot T. Martin, Cristine M. D. Machado, Barbara J. Turpin, Avram Gold, Andrew P. Ault, Jason D. Surratt, "Development of a Hydrophilic Interaction Liquid Chromatography (HILIC) Method for the Chemical

Characterization of Water-Soluble Isoprene Epoxydiol (IEPOX)-Derived Secondary Organic Aerosol”, *Environ. Sci.: Processes Impacts* **2018**, *20*, 1524–1536 accepted 09/17/18 doi: 10.1039/C8EM00308D.

38. Hoi Ki Lam, Kai Chung Kwong, Hon Yin Poon, James F. Davies, Zhenfa Zhang, Avram Gold, Jason D. Surratt, Man Nin Chan, “Heterogeneous OH Oxidation of Isoprene Epoxydiol-Derived Organosulfates: Kinetics, Chemistry and Formation of Inorganic Sulfate”, *Atmos. Chem. Phys.*, **2019**, *19*, 2433 – 2440 (doi.org/10.5194/acp-19-2433-2019) (accepted for publication 02/14/19).
39. Ariel J. Atkinson, Jingbo Wang, Kasia Grzebyk, Zhenfa Zhang, David Jung, Daina Zeng, Angela Pollard, Avram Gold, 19, “Scalable Fabrication of Anti-biofouling Membranes through 2-Aminoimidazole Incorporation during Polyamide Casting”, *Journal of Membrane Science* **2019**, *579*, 151 – 161 (accepted 02/17/19).
40. Elizabeth M. Corteselli, Eugene Gibbs-Flournoy, Steven O. Simmons, Philip Bromberg, Avram Gold, James M. Samet, “Long Chain Lipid Hydroperoxides Increase the Glutathione Redox Potential Through Glutathione Peroxidase 4”, *Biochim. Biophys. Acta-Gen. Subj.* **2019**, *1863*, accepted for publication 30/03/19.
41. Olson, Nicole; Lei, Ziyang; Craig, Rebecca; Zhang, Yue; Chen, Yuzhi; Lambe, Andrew; Zhang, Zhenfa Gold, Avram; Surratt, Jason; Ault, Andrew, “Reactive Uptake of Isoprene Epoxydiols Increases the Viscosity of the Core of Phase-Separated Aerosol Particles”, *ACS Earth Space Chem.* **2019**, (accepted for publication 06/21/19).
42. Matthieu Riva, Yuzhi Chen, Yue Zhang, Ziyang Lei, Nicole E. Olson, Hallie C. Boyer, Shweta Narayan, Lindsay D. Yee, Hilary S. Green, Tianqu Cui, Zhenfa Zhang, Karsten Baumann, Mike Fort, Eric Edgerton, Sri H. Budisulistiorini, Caitlin A. Rose, Igor O. Ribeiro, Rafael L. e Oliveira, Erickson O. dos Santos, Cristine M. D. Machado, Sophie Szopa, Yue Zhao, Eliane G. Alves, Suzane S. de Sá, Weiwei Hu, Eladio M. Knipping, Stephanie L. Shaw, Sergio Duvoisin Junior, Rodrigo A. F. de Souza, Brett B. Palm, Jose-Luis Jimenez, Marianne Glasius, Allen H. Goldstein, Havala O. T. Pye, Avram Gold, Barbara J. Turpin, William Vizuete, Scot T. Martin, Joel A. Thornton, Cari S. Dutcher, Andrew P. Ault, Jason D. Surratt, “Increasing Isoprene Epoxydiol-to-Inorganic Sulfate Aerosol Ratio Results in Extensive Conversion of Inorganic Sulfate to Organosulfur Forms: Implications for Aerosol Physicochemical Properties”, *Environ. Sci. Technol.*, **2019**, DOI: 10.1021/acs.est.9b01019; (e-pub 07/23/19).
43. Zhang, Yue ; Nichman, Leonid; Spencer, Peyton; Jung, Jason; Lee, Andrew; Heffernan, Brian; Gold, Avram; Zhang, Zhenfa; Chen, Yuzhi; Canagaratna, Manjula; Jayne, John; Worsnop, Douglas; Onasch, Timothy; Surratt, Jason; Chandler, David; Davidovits, Paul; Kolb, Charles, “The Effects of Composition, Cooling Rate, and Water Content on Glass Forming Properties of Organic Aerosols”, *Environ. Sci. Technol.*, **2019**, *53* (15), 8682-8694, DOI: 10.1021/acs.est.9b01019; (e-pub 07/23/19).
44. Zhang, Yue ; Nichman, Leonid; Spencer, Peyton; Jung, Jason; Lee, Andrew; Heffernan, Brian; Gold, Avram; Zhang, Zhenfa; Chen, Yuzhi; Canagaratna, Manjula; Jayne, John; Worsnop, Douglas; Onasch, Timothy; Surratt, Jason; Chandler, David; Davidovits, Paul; Kolb, Charles, “The Cooling Rate and Volatility Dependent Glass Forming Properties of Organic Aerosols Measured by Broadband Dielectric Spectroscopy”, *Environ. Sci. Technol.* **2019**, *53*, 12366-12378; DOI: 10.1021/acs.est.9b03317 (accepted for publication 09/06/19).
45. Yue Zhang, Yuzhi Chen, Ziyang Le, Nicole E. Olson, Matthieu Riva, Abigail R. Koss, Zhenfa Zhang, Avram Gold, John T. Jayne, Douglas . Worsnop, Timothy B. Onasch, Jesse H. Kroll, Barbara J. Turpin, Andrew P. Ault, Jason D. Surratt, “Joint Impacts of Acidity and Viscosity on the Formation of Secondary Organic Aerosol from Isoprene Epoxydiols (IEPOX) in Phase Separated Particles”, *ACS Earth Space Chem.*, **2019**, *3*, 2646 – 2658; DOI: 10.1021/acsearthspacechem.9b00209; accepted for publication 11/02/19; web publication 10/31/19.
46. Lauren A Eaves, Lisa Smeester, Hadley J Hartwell, Ying-Hsuan Lin, Maiko, Arashiro, Zhenfa Zhang, Avram Gold, Jason Douglas Surratt, and Rebecca C Fry, “Isoprene-derived Secondary Organic Aerosol Induces the Expression of micro RNAs (miRNAs) Associated with Inflammatory/Oxidative

- Stress Response in Lung Cells”, *Chem. Res. Toxicol.* **2019**, *33*(2), 381 – 387; DOI: 10.1021/acs.chemrestox.9b00322; web publication 11/25/19.
47. James M Samet, Elizabeth M Corteselli, Avram Gold, Jason Surratt, Tianqu Cui, Philip A Bromberg, Lisa A Dailey, “Supplementation with Omega-3 Fatty Acids Potentiates Oxidative Stress in Human Airway Epithelial Cells Exposed to Ozone”, *Environmental Research*, **2020**, *187*, 109627; doi.org/10.1016/j.envres.2020.109627, on line publication 05/02/2020.
 48. Yuzhi Chen, Yue Zhang, Andrew T. Lambe, Rongshuang Xu, Ziyang Lei, Nicole E. Olson, Zhenfa Zhang, Tessa Szalkowski, Tianqu Cui, William Vizuete, Avram Gold, Barbara J. Turpin, Andrew P. Ault, Man Nin Chan, Jason D. Surratt, “Heterogeneous Hydroxyl Radical Oxidation of Isoprene Epoxydiol-Derived 2 Methyltetrol Sulfates: Plausible Formation Mechanisms of Previously 3 Unexplained Organosulfates in Ambient Fine Aerosols”, *Environ. Sci. Technol. Lett.* **2020**, *7*, 460 – 468; doi.org/10.1021/acs.estlett.0c00276 (ASAP 06/01/20).
 49. Jun Nakamura, Sujey Carro, Avram Gold, Zhenfa Zhang, “An unexpected butadiene diolepoxide-mediated genotoxicity implies alternative mechanism for 1,3-butadiene carcinogenicity”, *Chemosphere*; doi.org/10.1016/j.chemosphere.2020.129149, published on line 11/30/20.
 50. Ziyang Lei, Nicole E. Olson, Yue Zhang, Yuzhi Chen, Andrew T. Lambe, Jing Zhang, Natalie J. White, Joanna M. Atkin, Mark M. Banaszak Holl, Zhenfa Zhang, Avram Gold, Jason D. Surratt, Andrew P. Ault, “Morphology and Viscosity Changes after Reactive Uptake of Isoprene Epoxydiols in Submicrometer Phase Separated Particles with Secondary Organic Aerosol Formed from Different Volatile Organic Compounds”, *ACS Earth and Space Chemistry*, **2022**; doi: 10.1021/acsearthspacechem.1c00156 (ASAP 03/24/22)
 51. Syed Masood, Edward R. Pennington, Steven O. Simmons, Philip A. Bromberg, Saame R. Shaikh, Rebecca L. Rice, Avram Gold, Zhenfa Zhang, James M. Samet, “Live cell imaging of oxidative stress in human airway epithelial cells exposed to isoprene hydroxyhydroperoxide”, *Redox Biology* **2022**, *51*, 102281; doi.org/10.1016/j.redox.2022.102281

Presentations for last 5 years

- Matthieu Riva, Tianqu Cui, Avram Gold, Jason D. Surratt, “Evidence for Unrecognized Anthropogenic Sources of Organosulfates: Gas-Phase Oxidation of Anthropogenic Precursors in the Presence of Sulfate Aerosol”, American Association of Aerosol Research, Oct. 12 – 16, Minneapolis, MN 2015.
- Matthieu Riva, Sri Hapsari Budisulistiorini, Zhenfa Zhang, Avram Gold, Jason D. Surratt, “Chemical Characterization of Gas- and Aerosol-Phase Products from Isoprene Ozonolysis in Presence of Acidic Aerosol: Re-examination of Secondary Organic Aerosol Formation”, American Association of Aerosol Research, Oct. 12 – 16, Minneapolis, MN 2015.
- Ying-Hsuan Lin, Amanda Kramer, Maiko Arashiro, Weruka Rattanavaraha, Elizabeth Martin, Zhenfa Zhang, Kenneth G. Sexton, Avram Gold, Ilona Jaspers, Rebecca Fry, Jason D. Surratt, “Isoprene-derived secondary organic aerosol induces expression of nuclear factor erythroid 2-like 2 (NRF2)-mediated oxidative stress response genes in human lung cells”, American Association of Aerosol Research, Oct. 12 – 16, Minneapolis, MN 2015.
- Matthieu Riva, Lindsay D. Yee, Sri Hapsari Budisulistiorini, Eric S. Edgerton, Stephanie L. Shaw, Eladio M. Knipping, Allen H. Goldstein, Zhenfa Zhang, Avram Gold, Jason D. Surratt, “Chemical Characterization of Isoprene- and Monoterpene-Derived SOA Tracers in PM_{2.5} Collected from Centerville, AL, during SOAS 2013”, American Association of Aerosol Research, Oct. 12 – 16, Minneapolis, MN 2015.
- Weruka Rattanavaraha, Kevin Chu, Ying-Hsuan Lin, Eric S. Edgerton, Karsten Baumann, Zhenfa Zhang, Avram Gold, Hongyu Guo, Rodney J. Weber, Jason D. Surratt, “Investigation of the impact of anthropogenic pollution on isoprene-derived secondary organic aerosol (SOA) in PM_{2.5} collected from

- Birmingham, AL during the 2013 Southern Oxidant and Aerosol Study (SOAS)" American Association of Aerosol Research, Oct. 12 – 16, Minneapolis, MN, 2015.
- Matthieu Riva, Tianqu Cui, Avram Gold, Jason D. Surratt, "Evidence for Unrecognized Anthropogenic Sources of Organosulfates and Sulfonates: Gas-Phase Oxidation of Anthropogenic Precursors in the Presence of Sulfate Aerosol · Topic: Aerosol Chemistry" oral presentation, European Aerosol Conference, Sept. 6 – 11, Milan, Italy, 09/07/2015
- S. Tomaz, M. Riva, T. Cui, Y.-H. Lin, A. Gold, E. A. Stone, K. Le Menach, A. Albinet, H. Budzinski, E. Perraudin, E. Villenave, J. Surratt, «Photo-oxidation des HAP en phase gazeuse en présence d'aérosols sulfatés : une nouvelle source de formation d'organosulfates et de sulfonates dans l'atmosphère », GDR SUIE (Groupement de Recherche N°3622), 26 octobre – 28 octobre, 2015, CORIA à St Etienne du Rouvray, France
- Abhishek Venkatratnam, Shinji Furuya, Oksana Kosyk, Valerie Soldatow, Stephen Sweet, Terry Wade, Anthony Knap, Avram Gold, Wanda Bodnar, Weihsueh Chiu, and Ivan Rusyn, "Using the Collaborative Cross mouse model to investigate population-level variability in Trichloroethylene toxicity", 2016 Annual Meeting of the Society of Toxicology, New Orleans, LA, March 13-17, 2016
- J. D. Surratt, "Multiphase Chemistry Promotes Isoprene-derived Secondary Organic Aerosol Formation in the Southeastern United States", 251st ACS National Meeting & Exposition, San Diego, California to be held March 10-17, 2016
- Ariel J Atkinson, Jingbo Wang, Zhenfa Zhang, Daina Zeng, Angela Pollard, David Jung, Avram Gold, Orlando Coronell, "Development of innovative anti-biofouling thin film composite membranes with biofilm inhibiting 2-aminoimidazoles incorporated", 251st ACS National Meeting & Exposition, San Diego, California, March 10-17, 2016
- Atkinson, A., J. Wang, Z. Zhang, D. Jung, A. Pollard, A. Gold, O. Coronell. (2016) 'Incorporation of novel anti-biofilm molecules into NF/RO membranes for biofouling control.' AMTA/AWWA Membrane Technology Conference, San Antonio, TX. February 2016. (**Oral Presentation**, Conference Funding, Conference Proceedings)
- Ying-Hsuan Lin, Zhenfa Zhang, Avram Gold, Ilona Jaspers, Rebecca C. Fry, Jason D. Surratt, "Understanding the link between aerosol oxidative potential and altered oxidative stress-associated gene expression in BEAS-2B cells exposed to major isoprene secondary organic aerosol precursors and constituents", 36th meeting, American Association of Aerosol Research, Oct. 16 – 20, Raleigh, NC.
- Yue Zhang, Yuzhi Chen, Andrew T. Lambe, Amy Bondy, Nicole Olson, Rebecca Craig, Zhenfa Zhang, Avram Gold, Timothy B. Onasch, John T. Jayne, Douglas R. Worsnop, Charles E. Kolb, William Vizuete, Andrew P. Ault, Jason D. Surratt, "The Effects of Aerosol Phase State on Secondary Organic Aerosol Formation from the Acid-Catalyzed Reactive Uptake of Isoprene-Derived Epoxydiols", 36th meeting, American Association of Aerosol Research, Oct. 16 – 20, Raleigh, NC.
- Maiko Arashiro, Ying-Hsuan Lin, Kenneth G. Sexton, Avram Gold, Ilona Jaspers, Rebecca C. Fry, Jason D. Surratt, "Assessing the Biological Effects of Various Components of Isoprene-Derived Secondary Organic Aerosol (SOA) in Human Lung Cells", 36th meeting, American Association of Aerosol Research, Oct. 16 – 20, Raleigh, NC.
- Yue Zhang, Yuzhi Chen, Andrew T. Lambe, Nicole E. Olson, Ziyang Lei, Rebecca L. Craig, Manjula Canagaratna, Jordan Krechmer, Zhenfa Zhang, Avram Gold, Timothy B. Onasch, John T. Jayne, Douglas R. Worsnop, Cassandra J. Gaston, Joel A. Thornton, William Vizuete, Andrew P. Ault, Jason D. Surratt, "The Effects of Aerosol-Phase State and Chemical Composition on Multiphase Chemistry Leading to Isoprene-Derived Secondary Organic Aerosol Formation", 10th International Aerosol Conference, St. Louis, MO, September 2-7, 2018.
- Yue Zhang, Martin Wolf, Leonid Nichman, Zhenfa Zhang, Avram Gold, John T. Jayne, Paul Davidovits, Douglas R. Worsnop, Jason D. Surratt, Timothy B. Onasch, Daniel J. Cziczo, "Enhancement of the Heterogeneous Ice Nucleation by the Phase State Change of Organic Aerosols", 10th International Aerosol Conference, St. Louis, MO, September 2-7, 2018.

- Yuzhi Chen, Matthieu Riva, Theran P. Riedel, Havala O. T. Pye, Zhenfa Zhang, Avram Gold, William Vizuete, Andrew P. Ault, Jason D. Surratt, “Experimental study of condensed-phase reaction kinetics of secondary organic aerosols from isoprene epoxydiols”, 10th International Aerosol Conference, St. Louis, MO, September 2-7, 2018.
- Yuzhi Chen, Matthieu Riva, Karsten Baumann, Tianqu Cui, Michael Fort, Eric S. Edgerton, Lindsay D. Yee, Weiwei Hu, Sri H. Budislistiorini, Caitlin E. Rose, Zhenfa Zhang, Allen H. Goldstein, Jose L. Jimenez, Stephanie L. Shaw, Avram Gold, Jason D. Surratt, “Understanding missing sources of fine particulate organosulfur compounds in the southeastern US: implications from ambient measurements and laboratory experiments”, 10th International Aerosol Conference, St. Louis, MO, September 2-7, 2018.
- M. Riva, Y. Chen, L.D. Yee, H. Green, T. Cui, N. Olson, Z. Lei, K. Baumann, M. Fort, Edgerton, E.M. Knipping, S. L. Shaw, S.H. Budisulistiorini, C. A. Rose, Z. Zhang, A. Gold, B. Turpin, W. Vizuete, I.O. Ribeiro, E Oliveira, R.L. e Oliveira, C. Machado, S. Duvoisin Junior, R.A.F. de Souza, E. Gomes, S. de Sa, S.T. Martin, A. Sorooshian, W. Hu, J.L. Jimenez, M. Glasius, S. Szopa, Y. Zhao, J.A. Thornton, A. Ault, C. Dutcher, A.H. Goldstein and J.D. Surratt, “Understanding Missing Sources of Fine Particulate Organosulfur Compounds in the Atmosphere: Implications from Ambient Measurements and Laboratory Experiments”, 10th International Aerosol Conference, St. Louis, MO, September 2-7, 2018.
- Robbins, Z; Gold, A.; Zhang, Z.; Nylander-French, L. “Quantification of Trisaminohexyl Isocyanurate (TAHI) as a Biomarker of HDI Isocyanurate Exposure in the Plasma and Urine of Automotive Spray Painters”, International Society of Exposure Science and the International Society for Environmental Epidemiology (ISES-ISEE Ottawa, Canada, August 26-30.
- Robbins, Z; Gold, A.; Zhang, Z.; Nylander-French, L. “Trisaminohexyl Isocyanurate (TAHI) Levels in Plasma and Urine in Workers Exposed to 1,6-Hexamethylene Diisocyanate (HDI) Monomer and HDI Isocyanurate”, International Society of Exposure Science and the International Society for Environmental Epidemiology (ISES-ISEE Ottawa, Canada, August 26-30.
- Yue Zhang, Yuzhi Chen, Andrew T. Lambe, Nicole E. Olson, Ziyang Lei, Rebecca L. Craig, Manjula Canagaratna, Jordan Krechmer, Zhenfa Zhang, Avram Gold, Timothy B. Onasch, John T. Jayne, Douglas R. Worsnop, Cassandra J. Gaston, Joel A. Thornton, William Vizuete, Andrew P. Ault, Jason D. Surratt, “The Effects of Aerosol-Phase State and Chemical Composition on Multiphase Chemistry Leading to Isoprene-Derived Secondary Organic Aerosol Formation”, 14th international Commission on Atmospheric Chemistry and Global Pollution/15th International Global Atmospheric Chemistry, 09/25 – 29 Takamatsu Kagata, Jpn, 2018.
- Ariel J. Atkinson, Jingbo Wang, Zhenfa Zhang, Avram Gold, David Jung, Daina Zeng, Angela Pollard, Orlando Coronell, “Grafting of Bioactive 2-Aminoimidazole into Active Layer Makes Commercial RO/NF Membranes Anti-biofouling,” *Membrane Science*, **2018**, (accepted for publication 03/16/18).
- Yuzhi Chen, Matthieu Riva, Theran P. Riedel, Havala O. T. Pye, Zhenfa Zhang, Avram Gold, William Vizuete, Andrew P. Ault, Jason D. Surratt, “Experimental study of condensed-phase reaction kinetics of secondary organic aerosols from isoprene epoxydiols”, Xth International Aerosol Conference, St Louis, MO, 09/2 – 7/2018.
- Yue Zhang, Martin Wolf, Leonid Nichman, Zhenfa Zhang. Avram Gold, John T. Jayne, Paul Davidovits, Douglas R. Worsnop, Jason D. Surratt, Timothy B. Onasch, Daniel J. Cziczo, “Enhancement of the Heterogeneous Ice Nucleation by the Phase State Change of Organic Aerosols”, Xth International Aerosol Conference, St Louis, MO, 09/2 – 7/2018.
- Yue Zhang, Yuzhi Chen, Andrew T. Lambe, Nicole E. Olson, Ziyang Lei, Rebecca L. Craig, Manjula Canagaratna, Jordan Krechmer, Zhenfa Zhang, Avram Gold, Timothy B. Onasch, John T. Jayne, Douglas R. Worsnop, Cassandra J. Gaston, Joel A. Thornton, William Vizuete, Andrew P. Ault, Jason D. Surratt, “The Effects of Aerosol-Phase State and Chemical Composition on Multiphase Chemistry Leading to Isoprene-Derived Secondary Organic Aerosol Formation,” Xth International Aerosol Conference, St Louis, MO, 09/2 – 7/2018.

- Tianqu Cui^{1,a}, Zhexi Zeng^{1,a}, Erickson O. dos Santos², Zhenfa Zhang¹, Yuzhi Chen¹, Yue Zhang¹, Caitlin A. Rose¹, Sri H. Budisulistiorini^{1,b}, Leonard B. Collins¹, Wanda M. Bodnar¹, Rodrigo A. F. de Souza³, Scot T. Martin^{4,5}, Cristine M. D. Machado², Barbara J. Turpin¹, Avram Gold¹, Andrew P. Ault^{6,7}, Jason D. Surratt, “Explicit Mass Spectrometric Determination of Isoprene Epoxydiol (IEPOX)-Derived Secondary Organic Aerosol with a Developed Hydrophilic Interaction Liquid Chromatography (HILIC) Method”, AGU Fall Meeting, Dec. 10 – 14, 2018, Washington, D.C.
- Sarah Petters, Tianqu Cui, Zhenfa Zhang, Avram Gold, Faye McNeill, Jason Surratt, Barbara Turpin, “Formation of organosulfates from dark reactions of isoprene epoxydiols in cloud and fog water”, AGU Fall Meeting, Dec. 10 – 14, 2018, Washington, D.C.
- M. Riva, Y. Chen, Y. Zhang, Z. Lei, N. E. Olson, H. C. Boyer Chelmo, S. Narayan, L.D. Yee, H. S. Green, T. Cui, Z. Zhang, K. Baumann, M. Fort, E. Edgerton, S.H. Budisulistiorini, C. A. Rose, I. O. Ribeiro, R. L. e Oliveira, E. O. dos Santos, C. M. D. Machado, S. Szopa, Y. Zhao, E. G. Alves, S. S. de Sá, W. Hu, E. M. Knipping, S. L. Shaw, S. Duvoisin Junior, R. A. F. de Souza, B.B. Palm, T. P. Riedel, J. L. Jimenez, M. Glasius, A. H. Goldstein, H. O. T. Pye, A. Gold, B. J. Turpin, W. Vizuete, S. T. Martin, J. A. Thornton, C. S. Dutcher, A. P. Ault, and J. D. Surratt, “Extensive Isoprene Epoxydiols Conversion of Inorganic to Organic Sulfur Alters Aerosol Properties”, 11th Asian Aerosol Conference, Kowloon, Hong Kong during 27 – 30 May 2019.
- Yue Zhang, Yuzhi Chen, Ziyang Lei, Nicole E. Olson, Matthieu Riva, Abigail R. Koss, Zhenfa Zhang, Avram Gold, John T. Jayne, Douglas R. Worsnop, Timothy B. Onasch, Barbara J. Turpin, Jesse Kroll, Andrew P. Ault, Jason D. Surratt, “Combined Impacts of Acidity and Viscosity on the Formation of Inorganic-Organic Mixed Isoprene Epoxydiol (IEPOX)-Derived Aerosols”, 37th AAAR Annual Conference, Oct 14 – 18, 2019, Portland, OR.
- Yue Zhang, Yuzhi Chen, Andrew T. Lambe, Nicole E. Olson, Ziyang Lei, Manjula Canagaratna, Jordan Krechmer, Rebecca L. Craig, Zhenfa Zhang, Avram Gold, John T. Jayne, Douglas R. Worsnop, Timothy B. Onasch, Cassandra J. Gaston, Joel A. Thornton, William Vizuete, Andrew P. Ault, Jason D. Surratt, “The Effects of Aerosol-Phase State and Chemical Composition on Multiphase Chemistry Leading to Isoprene-Derived Secondary Organic Aerosol Formation”, 37th AAAR Annual Conference, Oct 14 – 18, 2019, Portland, OR.
- Yue Zhang, Yuzhi Chen, Manjula Canagaratna, Sri H. Budisulistiorini, Tianqu Cui, Zhenfa Zhang, Avram Gold, John T. Jayne, Douglas R. Worsnop, Barbara J. Turpin, Jason D. Surratt, “IEPOX-Derived Organosulfates Contribute a Significant Portion of the Aerosol Mass Spectral Tracer Ion of IEPOX-derived SOA and Its Implications”, 37th AAAR Annual Conference, Oct 14 – 18, 2019, Portland, OR.
- Yuzhi Chen, Yue Zhang, Matthieu Riva, Thera P. Riedel, Havala O. T. Pye, Nicole E. Olson, Ziyang Lei, Zhenfa Zhang, Avram Gold, Barbara J. Turpin, Andrew P. Ault, Jason D. Surratt, “Application of a Reactive Uptake Parameterization Considering Non-Ideal Effects and Phase State in Simulating Secondary Organic Aerosols from Isoprene Epoxydiols Under Controlled Laboratory Measurements,” 37th AAAR Annual Conference, Oct 14 – 18, 2019, Portland, OR.
- Yuzhi Chen, Yue Zhang, Andrew T. Lambe, Zhenfa Zhang, Avram Gold, Barbara J. Turpin, Andrew P. Ault, Jason D. Surratt, Man Nin Chan, “Heterogeneous OH oxidation of methyltetrol sulfates leads to formation of multifunctionalized organosulfates previously measured in ambient fine aerosols”, AGU Fall Meeting, San Francisco, CA, 9 – 13 December.
- Yue Zhang, Martin J. Wolf, Abigail R. Koss, Xiaoli Shen, Leonid Nishman, Zhenfa Zhang, Avram Gold, John T. Jayne, Douglas R. Worsnop, Timothy B. Onasch, Paul Davidovits, Jason D. Surratt, Jesse H. Kroll, Daniel J. Cziczo, “Enhancement of the Heterogeneous Ice Nucleation by the Changing Phase State of Secondary Organic Aerosols”, 2020 American Meteorology Society Meeting, Boston, MA, Jan. 12 – 16, 2020.
- Yue Zhang, Jin Yan, Yuzhi Chen, N. Cazimir Armstrong, Zhenfa Zhang, Avram Gold, Barbara J. Turpin, Jason D. Surratt, “Rapid Formation of Sulfate Aerosols through Aqueous Aerosol Oxidation by Isoprene Hydroxy Hydroperoxides (ISOPOOH)”, 38th American Association for Aerosol Research (AAAR) Annual Conference, virtual October 5-9, 2020.

Syed Masood, E. Ross Pennington, Steven O. Simmons, Philip A. Bromberg, Saame Raza Shaikh, Rebecca L. Rice, Avram Gold, Zhenfa Zhang, James M. Samet, “Live Cell Imaging of Oxidative Stress in Human Airway Epithelial Cells Exposed to Environmental Peroxides”, 28th Annual Meeting, Society for Redox Biology in Medicine, Nov. 15 – 18, 2021, virtual.

Edward R. Pennington, Syed Masood, Zhenfa Zhang, Avram Gold, Weidong Wu, Yi Yang, James M. Samet “Probing Real Time Redox Events in Human Airway Epithelial Cells Exposed to an Environmental Peroxide”, 28th Annual Meeting, Society for Redox Biology in Medicine, Nov. 15 – 18, 2021, virtual.

Alison M. Fankhauser, Ziyang Lei, Kimberly R. Daley, Yao Xiao, Zhenfa Zhang, Avram Gold, Bruce S. Ault, Jason D. Surratt, Andrew P. Ault, “Acidity-Dependent Atmospheric Organosulfate Structures and Spectra: Exploration of Protonation State Effects via Raman, Infrared, and Density Functional Theory,” 11th International Aerosol Conference, Sept. 4-9, 2022, Athens, Greece

Students advised (date of degree)

PhD

Rebecca Rice (Committee Chair, starting Fall 2020)
Molly Frauenheim (Committee Chair, starting Fall 2020)
Carolyn Nichols (Co-Chair, starting Fall 2020)
Yuzhi Chen (current)
Marc Webb (current)
Alma Beciragic (current)
Zachary Robbins (current)
Elizabeth Corteselli (2019)
Virginia Bass (Committee Chair, 2019),
Sean Watford (2019)
Katelyn Laverich* (2018)
Zhenyu Tian (2018)
Abhishek Venkatratnam (2018)
Tianqu Cui (2017)
Weruka Rattanavaraha (2016)
Arial Atkinson (2016)
Philip Wages* (2015)
Sri Budisulistiorini (2014)
Nour Abdo (2014)
Ying-Hsuan Lin (2014)
Alex Carll (Committee Chair, 2012)
Wen-Yun Cheng (Committee Chair, 2012)

*Curriculum in Toxicology

MS

Carolyn Nichols (current)
Caitlin Rose (2018)
Zhexi Zheng (2018)
Yuzhi Chen (2015)
Xinxin Li (2014)

Wendy Marth (2013)
Zachary Robbins (2012)

BSPH

Stephanie Yu (2017)
Kevin Chu (2014)
Neil Bhethela (2013)

BA (Arts and Sciences)

Benjamin Fawcett (2018) *Highest Honors*

Current grant support

AGS - GEO/ATM - Atmospheric Chemistry (PI: A. Gold)

Total award \$596,470 (02/15/2020 – 02/14/2023)

Comparison of thermal and non-thermal protocols for analysis of isoprene SOA generated under low-NOx conditions. Assessment of artifacts and detection of highly oxidized products

Critical gaps exist in understanding isoprene low-NOx chemistry. Lack of authentic standards for key low-NOx isoprene SOA markers leads to ambiguity in quantitating SOA components and poor performance of predictive models. Some markers may actually be artifacts of widely used thermal analytical protocols, while multifunctional hydroperoxides may degrade. Of particular concern are methyl tetrols, IEPOX oligomers, C₅H₁₀O₃ isobars (C₅-alkene triols), and the multifunctional hydroperoxides. This proposal addresses gaps.

NA160AR4310106 NOAA Oceanic and Atmospheric Research (OAR) (PI: B. Turpin)

Total Award: \$592,448 (7/01/2016 - 6/30/2020)

Characterizing Oxidized North American Fire Emissions and Their Aqueous/Multiphase Atmospheric Transformations through the FIREX Campaign

Role: Investigator

CHE-1404644 AGS - GEO/ATM - Atmospheric Chemistry (PI: J. Surratt)

Total Award: \$290,000 (7/01/2017 - 6/30/2020)

Collaborative Research: Impact of Aerosol Viscosity and Phase Separation on Isoprene Epoxydiol (IEPOX)-Derived SOA Formation

Role: Investigator

Completed grant support

2 P42 ES005948-22S2 (PI: R. Fry), 04/01/1997-03/31/17

NIH/NIEHS total award/2016–2017 \$2,325,556

Elucidating Risks: From Exposure and Mechanism to Outcome – Core C (\$268,912 for 2016–2017)

Role: PI Core C (Chemistry and Analytical).

The Chemistry and Analytical Core of the UNC-CH Superfund Research Program offers expertise in use of and access to instrumentation in all major areas of spectroscopy and spectrometry (UV-Vis, fluorescence, circular dichroism, nuclear magnetic resonance, mass spectrometry) and chromatography (HPLC and UPLC). The Core provides advice on analytical method development including appropriate choice of analytes, instrumentation and standards, and also on chemical properties, safe handling, and disposal. The Core interacts in this manner with Projects 1, 2, 3, 4 and 5, and also with the Research Translation and Biostatistics Cores as needed.

CHE-1404644 (PI: J. Surratt), 11/15/2014-10/31/2017

NSF

Collaborative Research: Quantifying Secondary Organic Aerosol Formation from the Reactive Uptake of Isoprene-derived Epoxides to Submicron Aerosol Particles (\$300,000)

Role: Co-PI

This project has three primary goals: Goal 1: Determine the reaction probability of IEPOX and MAE on submicron inorganic and organic aerosol particles as a function of liquid water content, acidity, and composition; Goal 2: Identify the molecular composition and volatility of early generation particle-bound products using both online and offline mass spectrometric techniques; Goal 3: Assess the evolution over minutes to hours of IEPOX and MAE reactive uptake kinetics and corresponding SOA composition under dark and photochemical conditions.

University of Texas at Austin, 09/27/2016 – 12/31/2017

Texas Commission on Environmental Quality (\$225,000)

Role: Co-PI

Teaching

ENVR 650 (renumbered from ENVR 740 in 2014), 2012 – current, spring, **Chemical Carcinogenesis**, primary instructor

Enrollment: 2012, 1; 2013, 1; 2014, 1; 2015, 3; 2016, 3; 2017, 8; 2018, 11

ENVR 890, 2016, spring, **Special Topics**, primary instructor

Enrollment: 2016, 1

ENVR 403, 2016, spring, **Environmental Chemistry Processes**, guest lecturer (unit on toxicology of organochlorine compounds)

ENVR 430, 2012 – current, spring, **Health Effects of Environmental Agents**, guest lecturer (units on DNA adducts (2012 – current) and cytochrome P450 (2015)).

Professional Service (2019 – current)

Guest Editor with Jason Surratt, Atmosphere Special Issue, “*The critical role of synthetic chemistry in elucidating mechanisms, product identification and quantitation in atmospheric gas-phase and multiphase chemistry of volatile organic emissions*”

Member, Editorial Board, Atmosphere (2019 -)

Proposal Review, NSF Atmospheric and Geospace Sciences-Atmospheric Chemistry Directorate

Proposal Review, Southern California Environmental Health Sciences Center

Peer reviewer for the following Journals:

Journal	Number of reviews
<i>Analytical Methods</i>	2
<i>Atmosphere</i>	5
<i>Atmospheric Chemistry and Physics</i>	1
<i>Atmospheric Pollution Research</i>	2
<i>Environmental Science & Technology</i>	2
<i>Journal of Inorganic Biochemistry</i>	6
<i>Materials Sciences & Engineering C</i>	1
<i>Microchemical Journal</i>	2

Science of the Total Environment
Sustainability

1
2