

## **ROBERT J. GRIFFIN**

### **RESEARCH INTERESTS**

Aerosol thermodynamics and chemistry  
Air pollution transport  
Atmospheric chemistry  
Regional air quality modeling  
Urban air quality

### **EDUCATION**

*California Institute of Technology, Pasadena, CA*

Doctor of Philosophy in Chemical Engineering, Thesis: 'Experimental and Computational Studies of Secondary Organic Aerosol Formation,' Advisor: John H. Seinfeld, June 2000

Master of Science in Chemical Engineering with Minor in Environmental Engineering Science, Coursework included fluid mechanics, reaction kinetics, thermodynamics, quantum mechanics, atmospheric chemistry, aerosol physics and chemistry, air pollution control, surface terrestrial processes, weather and climate, global biogeochemical cycles, and environmental physical organic chemistry, June 1997

*Tufts University, Medford, MA*

Bachelor of Science in Chemical Engineering *summa cum laude*, May 1993

### **EXPERIENCE**

*Rice University, Houston, TX*

*Department of Civil and Environmental Engineering*

Chair

7/15-present

Professor

7/13-present

Associate Professor

8/08-6/13

*University of Texas School of Public Health, Houston, TX*

*Division of Epidemiology, Human Genetics, and Environmental Sciences*

Visiting Scientist

7/14-6/15

*University of New Hampshire, Durham, NH*

*Department of Earth Sciences and Climate Change Research Center*

Associate Professor

7/07-8/08

Assistant Professor

1/03-6/07

*Duke University, Durham, NC*

*Department of Civil and Environmental Engineering*

Assistant Professor

8/00-12/02

*Arthur D. Little, Inc., Cambridge, MA*

Research Associate

6/93-8/95

Modeled chemical costs of production. Investigated chemical process feasibility. Performed environmental impact studies and market evaluations. Prepared and delivered presentations to clients. Received four Star Case Awards based on client feedback.

## PEER-REVIEWED PUBLICATIONS IN PRINT/PRESS

92. Y.J. Leong, N.P. Sanchez, H.W. Wallace, B. Karakurt Cevik, C.S. Hernandez, Y. Han, J.H. Flynn, B. Lefer, and R.J. Griffin, Overview of surface measurements and spatial characterization of submicron particulate matter during the DISCOVER-AQ 2013 campaign in Houston, TX, *JAWMA*, in press, 2017.
91. B.C. Schulze, H.W. Wallace, J. Flynn, B. Lefer, M. Erickson, B.T. Jobson, S. Dusanter, S. Griffith, R. Hansen, P. Stevens, and R.J. Griffin, Differences in BVOC oxidation and SOA formation above and below the forest canopy, *Atmos. Chem. Phys.*, in press, 2017.
90. K. Sun, L. Tao, D.J. Miller, D. Pan, L.M. Golston, M.A. Zondlo, R.J. Griffin, H.W. Wallace, Y.J. Leong, M.M. Yang, Y. Zhang, D.L. Mauzerall, and T. Zhu, Vehicle emissions as an important urban ammonia source in the United States and China, *Environ. Sci. Technol.*, in press, 2017.
89. A.N. Myers-Pigg, R.J. Griffin, P. Louchouart, M. Norwood, A. Sterne, and B. Karakurt Cevik, Signatures of biomass burning aerosols in the plume of a saltmarsh wildfire in South Texas, *Environ. Sci. Technol.*, *50*, 9308-9314, 2016.
88. W. Ye, C. Li, C. Zheng, N.P. Sanchez, A.K. Gluszek, A.J. Hudzikowski, L. Dong, R.J. Griffin, and F.K. Tittel, Mid-infrared dual-gas sensor for simultaneous detection of methane and ethane using a single continuous-wave interband cascade laser, *Opt. Expr.*, *24*, 16973-16985, 2016.
87. L. Dong, C. Li, N. P. Sanchez, C. Zheng, Y. Yu, A. Sampaolo, R.J. Griffin, and F.K. Tittel, Compact TDLAS-based sensor design using interband cascade lasers for mid-IR trace gas sensing, *Opt. Expr.*, *24*, A528-A535, 2016.
86. Y. Yu, N.P. Sanchez, R.J. Griffin, and F.K. Tittel, Single CW EC-QCL based sensor for simultaneous detection of H<sub>2</sub>O, HDO, N<sub>2</sub>O and CH<sub>4</sub> by multi-pass absorption spectroscopy, *Opt. Expr.*, *24*, 10391-10401, 2016.
85. J. Zhang, F.K. Tittel, L. Gong, R. Lewicki, R.J. Griffin, W. Jiang, B. Jiang, M. Li, Support vector machine modeling using particle swarm optimization approach for the retrieval of atmospheric ammonia concentrations, *Environ. Monitor. Assess.*, *21*, 531-546, 2016.
84. M.L. Dawson, J. Xu, R.J. Griffin, and D. Dabdub, Development of aroCACM/MPMPO 1.0: An improved model to simulate secondary organic aerosol from aromatic precursors in regional models, *Geosci. Model Develop.*, *9*, 2143-2151, 2016.
83. J. Bean, C. Faxon, Y.J. Leong, H.W. Wallace IV, B. Karakurt Cevik, S. Ortiz, M. Canagaratna, S. Usenko, R. Sheesley, R.J. Griffin, and L. Hildebrandt Ruiz, Composition and sources of particulate matter measured near Houston, TX: Anthropogenic-biogenic interactions, *Atmosphere*, *7*, 73, doi: 10.3390/atmos7050073, 2016.
82. Y.J. Leong, A.P. Rutter, C.V. Gutierrez, H.Y. Wong, M. Junaid, E. Scheuer, L. Gong, F.K. Tittel, J.E. Dibb, and R.J. Griffin, Impact of environmental variables on the reduction of HNO<sub>3</sub> by volatile organic compounds emitted by motor vehicles, *Atmos. Poll. Res.*, *7*, 221-227, 2016.
81. L. Dong, C. Li, N.P. Sanchez, A.K. Gluszek, R.J. Griffin, and F.K. Tittel, Small, low power consumption methane sensor based on a CW room temperature interband cascade laser emitting at 3.3 μm, *Appl. Phys. Lett.*, *108*, 011106, 2016.

80. E.T. Gall, R.J. Griffin, A.M. Steiner, J.E. Dibb, E. Scheuer, L. Gong, A.P. Rutter, B.K. Cevik, S. Kim, B. Lefer, and J. Flynn, Evaluation of nitrous acid sources and sinks in urban outflow, *Atmos. Environ.*, *127*, 272-282, 2016.
79. B. Karakurt Cevik, A.P. Rutter, L. Gong, R.J. Griffin, J.H. Flynn, B.L. Lefer, and S. Kim, Estimates of air mass aging using particle and other measurements near Fort Worth, *Atmos. Environ.*, *126*, 45-54, 2016.
78. K. Ashworth, S.H. Chung, R.J. Griffin, J. Chen, R. Forkel, A.M. Bryan, and A.L. Steiner, Simulating biosphere-atmosphere exchange processes with FORCAsT: A 1-D canopy model, *Geosci. Model Develop.*, *8*, 3765-3784, 2015.
77. A.P. Rutter, R.J. Griffin, B. Karakurt Cevik, K.M. Shakya, L. Gong, S. Kim, J.H. Flynn, and B.L. Lefer, Sources of air pollution in a region of oil and gas development downwind of a large city, *Atmos. Environ.*, *120*, 89-99, 2015.
76. S. Kim, A.B. Guenther, B. Lefer, J. Flynn, R. Griffin, A.P. Rutter, L. Gong, and B. Karakurt Cevik, Field observations of the role of stabilized Criegee radicals in sulfuric acid production in a high biogenic VOC environment, *Environ. Sci. Technol.*, *49*, 3383-3391, 2015.
75. Y. Cao, N.P. Sanchez, W. Jiang, R.J. Griffin, F. Xie, L.C. Hughes, C. Zah, and F.K. Tittel, Simultaneous atmospheric nitrous oxide, methane and water vapor detection with a single continuous wave quantum cascade laser, *Opt. Expr.*, *23*, doi: 10/1364/OE.23.003131, 2015.
74. J. Li, M. Cleveland, L. Ziemba, R.J. Griffin, and Q. Ying, Modeling regional secondary organic aerosol using the Master Chemical Mechanism, *Atmos. Environ.*, *102*, 52-61, 2015.
73. J. Xu, R.J. Griffin, Y. Liu, S. Nakao, and D.R. Cocker III, Simulated impact of NO<sub>x</sub> on SOA formation from oxidation of toluene and *m*-xylene, *Atmos. Environ.*, *101*, 217-225, 2015.
72. Y. Cao, N.P. Sanchez, W. Jiang, W. Ren, R. Lewicki, D. Jiang, R.J. Griffin, and F.K. Tittel, Multi-pass absorption spectroscopy for H<sub>2</sub>O<sub>2</sub> detection using a CW DFB-QCL, *Advanced Optical Tech.*, *3*, 549-558, 2014.
71. P. Stefanski, R. Lewicki, N.P. Sanchez, J. Tarka, R.J. Griffin, M. Razeghi, and F.K. Tittel, Long-term measurements of carbon monoxide mixing ratio in Houston using a compact high power CW DFB-QCL based QEPAS sensor, *Appl. Phys. B.*, *117*, 519-526, 2014.
70. A.P. Rutter, Y.J. Leong, Q.G.J. Malloy, C.V. Gutierrez, M. Calzada, E. Scheuer, J.E. Dibb, and R.J. Griffin, The reduction of HNO<sub>3</sub> to HONO by semi-volatile organic compounds emitted by motor vehicles, *Atmos Environ.*, *87*, 200-206, 2014.
69. M. Jahjah, W. Jiang, N. Sanchez, W. Ren, P. Patimisco, V. Spagnolo, S. Herndon, R.J. Griffin, and F.K. Tittel, Atmospheric CH<sub>4</sub> and N<sub>2</sub>O measurements near greater Houston area landfills using a QCL-based QEPAS sensor system during DISCOVER-AQ 2013, *Opt. Lett.*, *39*, 957-960, 2014.
68. A. McPhail, R.J. Griffin, M. El-Halwagi, K. Medlock, and P.J.J. Alvarez, An environmental and energy analysis of the influence of municipal solid waste's ultimate analysis and moisture content in a parallel co-combustion process, *Energy & Fuels*, *28*, 1453-1462, 2014.
67. W. Ren, W. Jiang, N.P. Sanchez, P. Patimisco, V. Spagnolo, C. Zah, F. Xie, L.C. Hughes, R.J. Griffin, and F.K. Tittel, Hydrogen peroxide detection with quartz-

- enhanced photoacoustic spectroscopy using a distributed-feedback quantum cascade laser, *Appl. Phys. Lett.*, 104, 041117, 2014.
66. L. Gong, R. Lewicki, R.J. Griffin, F.K. Tittel, C.R. Lonsdale, R.G. Stevens, J.R. Pierce, Q.G.J. Malloy, S.A. Travis, L.M. Bobmanuel, B.L. Lefer, and J.H. Flynn, Role of atmospheric ammonia in particulate matter formation in Houston during summertime, *Atmos. Environ.*, 77, 893-900, 2013.
  65. R.J. Griffin, The sources and impacts of tropospheric particulate matter, *Nature Education Knowledge*, 4, 1, 2013.
  64. A.P. Rutter, K.M. Shakya, R. Lehr, J.J. Schauer, and R.J. Griffin, Oxidation of gaseous elemental mercury in the presence of secondary organic aerosol formation, *Atmos. Environ.*, 59, 86-92, 2012.
  63. M.J. Cleveland, L.D. Ziemba, R.J. Griffin, J.E. Dibb, C.H. Anderson, B.L. Lefer, and B. Rappenglück, Characterization of urban aerosol using aerosol mass spectrometry and proton nuclear magnetic resonance spectroscopy, *Atmos. Environ.*, 54, 511-518, 2012.
  62. K.M. Shakya, P.F. Place, R.J. Griffin, and R.W. Talbot, Carbonaceous content and water-soluble organic functionality of atmospheric aerosols at a semi-rural New England location, *J. Geophys. Res.*, D03301, 117, doi:10.1029/2011JD016113, 2012.
  61. L.D. Ziemba, R.J. Griffin, C.H. Anderson, C. Corr, and S.I. Whitlow, Characterization of water-soluble organic aerosol in coastal New England: Implications of variations in size-distribution, *Atmos. Environ.*, 45, 7319-7329, 2011.
  60. K.M. Shakya, P. Louchouart, and R.J. Griffin, Lignin-derived phenols in Houston aerosols: Implications for natural background sources, *Environ. Sci. Technol.*, 45, 8268-8275, 2011.
  59. L. Gong, R. Lewicki, R.J. Griffin, J.H. Flynn, B.L. Lefer, and F.K. Tittel, Atmospheric ammonia measurements in Houston, TX using an external-cavity quantum cascade laser-based sensor, *Atmos. Chem. Phys.*, 11, 9721-9733, 2011.
  58. O. Klemm, L. Ziemba, R.J. Griffin, B.C. Sive, S. Whitlow, K. Carpenter, K.I. Klemm, and R.W. Talbot, A detailed aerosol particle plume analysis, *J. Geophys. Res.*, 115, D21211, doi:10.1029/2010JD014153, 2010.
  57. K.M. Shakya and R.J. Griffin, Secondary organic aerosol formation from oxidation of polycyclic aromatic hydrocarbons, *Environ. Sci. Technol.*, 44, 8134-8139, 2010.
  56. M.E. Wright et al., Extensive aerosol optical properties and other aerosol mass related measurements during TRAMP/TexAQS 2006 – Implications for PM compliance and planning, *Atmos. Environ.*, 44, 4035-4044, 2010.
  55. L.D. Ziemba, J.E. Dibb, R.J. Griffin, C.H. Anderson, S.I. Whitlow, B. Lefer, B. Rappenglück, and J. Flynn, Heterogeneous conversion of nitric acid to nitrous acid on the surface of primary organic aerosol in an urban atmosphere, *Atmos. Environ.*, 44, 4081-4089, 2010.
  54. L.D. Ziemba, R.J. Griffin, L.D. Cottrell, P.J. Beckman, Q. Zhang, R.K. Varner, B.C. Sive, H. Mao, and R.W. Talbot, Characterization of aerosol associated with enhancement of number concentrations of small particles in a suburban forested environment, *J. Geophys. Res.*, 115, D12206, doi:10.1029/2009JD0126114, 2010.
  53. W.L. Chang, R.J. Griffin, and D. Dabdub, Partitioning phase preference for secondary organic aerosol in an urban atmosphere, *Proceed. Nat. Acad. Sci.*, 107, 6705-6710, 2010.

52. L.D. Ziemba, J.E. Dibb, R.J. Griffin, L.G. Huey, and P. Beckman, Observations of particle growth at a remote, Arctic site, *Atmos. Environ.*, 44, 1649-1657, 2010.
51. K.M. Shakya, L.D. Ziemba, and R.J. Griffin, Characterization of carbonaceous aerosol in winter in Kathmandu, Nepal, *Aerosol Air Qual. Res.*, 10, 219-230, 2010.
50. P.F. Place, Jr., L.D. Ziemba, and R.J. Griffin, Observations of nucleation-mode particle events and size distributions at a rural New England site, *Atmos. Environ.*, 44, 88-94, 2010.
49. J.L. Jimenez, et al., Evolution of organic aerosols in the atmosphere: A new framework connecting measurements to models, *Science*, 326, 1525-1529, 2009.
48. E.O. Olaguer et al., Deciphering the role of radical precursors during the second Texas Air Quality Study, *JAWMA*, 59, 1258-1277, 2009.
47. H. Matsui, M. Koike, N. Takegawa, Y. Kondo, R.J. Griffin, Y. Miyazaki, Y. Yokouchi, and T. Ohara, Secondary organic aerosol formation in urban air calculated using a three-dimensional model, *J. Geophys. Res.*, 114, D04201, doi:10.1029/2008JD010164, 2009.
46. C.E. Jordan, P.J. Ziemann, R.J. Griffin, Y.B. Lim, R. Atkinson, and J. Arey, Computational simulation of the formation of secondary organic aerosol from oxidation of alkanes by the hydroxyl radical, *Atmos. Environ.*, 42, 8015-8026, 2008.
45. X. Cai, L.D. Ziemba, and R.J. Griffin, Secondary aerosol formation from the oxidation of toluene by chlorine atoms, *Atmos. Environ.*, 42, 7348-7359, 2008.
44. C. Anderson, J.E. Dibb, R.J. Griffin, G.S.W. Hagler, and M.H. Bergin, Water-soluble organic carbon measurements at Summit, Greenland, *Atmos. Environ.*, 42, 5612-5621, 2008.
43. C. Anderson, M.H. Bergin, R.J. Griffin, and J.E. Dibb, Simultaneous measurements of particulate and gas-phase water soluble organic carbon concentrations at remote and urban-influenced locations, *Geophys. Res. Lett.*, 35, L13706, doi:10.1029/2008GL033966, 2008.
42. C.L. Heald et al., Total observed organic carbon (TOOC) in the atmosphere, *Atmos. Chem. Phys.*, 8, 2007-2025, 2008.
41. L.D. Cottrell, R.J. Griffin, J.L. Jimenez, Q. Zhang, I. Ulbrich, L.D. Ziemba, P.J. Beckman, B.C. Sive, and R.W. Talbot, Submicron particles at Thompson Farm during ICARTT measured using aerosol mass spectrometry, *J. Geophys. Res.*, 113, D08212, doi:10.1029/2007JD009192, 2008.
40. S.L. Clegg, M.J. Kleeman, R.J. Griffin, and J.H. Seinfeld, Effects of uncertainties in the thermodynamic properties of organic aerosol components in an air quality model. I. Treatment of inorganic electrolytes and organic compounds in the condensed phase, *Atmos. Chem. Phys.*, 8, 1057-1085, 2008.
39. S.L. Clegg, M.J. Kleeman, R.J. Griffin, and J.H. Seinfeld, Effects of uncertainties in the thermodynamic properties of organic aerosol components in an air quality model. II. Predictions of pure component vapor pressures of organic compounds, *Atmos. Chem. Phys.*, 8, 1087-1103, 2008.
38. J. Chen, R.J. Griffin, P. Tulet, and A. Grini, Modeling secondary organic aerosol formation through cloud processing of organic compounds, *Atmos. Chem. Phys.*, 7, 5343-5355, 2007.
37. Q. Zhang et al., Ubiquity and dominance of oxygenated species in organic aerosols in anthropogenically influenced Northern Hemisphere mid-latitudes, *Geophys. Res. Lett.*, 34, L13801, doi: 10.1029/2007GL029979, 2007.

36. M. Chen, R.W. Talbot, H. Mao, B.C. Sive, J. Chen, and R.J. Griffin, Air mass classification over New Hampshire coastal areas and its relationship with air quality and meteorological conditions, *J. Geophys. Res.*, 112, D10S05, doi:10.1029/JD2006007687, 2007.
35. L.D. Ziemba, E. Fischer, R.J. Griffin, and R.W. Talbot, Aerosol acidity in rural New England: Temporal trends and source region analysis, *J. Geophys. Res.*, 112, D10S22, doi:10.1029/2006JD007605, 2007.
34. R.J. Griffin, J. Chen, K. Carmody, S. Vutukuru, and D. Dabdub, The contribution of gas-phase oxidation of volatile organic compounds to atmospheric carbon monoxide levels in two areas of the United States, *J. Geophys. Res.*, 112, D10S17, doi:10.1029/2006JD007602, 2007.
33. R.J. Griffin, P.J. Beckman, R.W. Talbot, B.C. Sive, and R.K. Varner, Deviations from ozone photostationary state during ICARTT 2004: Use of measurements and photochemical modeling to assess causes, *J. Geophys. Res.*, 112, D10S07, doi:10.1029/2006JD007604, 2007.
32. J. Medina, A. Nenes, R.-E.P. Sotiropoulou, L.D. Cottrell, L.D. Ziemba, P.J. Beckman, and R.J. Griffin, Cloud condensation nuclei (CCN) closure during the ICARTT 2004 campaign: A.) Effects of size-resolved composition, *J. Geophys. Res.*, 112, D10S31, doi:10.1029/2006JD007588, 2007.
31. Q. Ying, M.P. Fraser, J. Chen, R.J. Griffin, and M.J. Kleeman, Verification of a source-oriented externally mixed air quality model during a severe photochemical smog episode, *Atmos. Environ.*, 41, 1521-1538, 2007.
30. E.V. Fischer, L.D. Ziemba, R.W. Talbot, J.E. Dibb, R.J. Griffin, L. Husain, and A. Grant, The aerosol major ion record at Mount Washington, *J. Geophys. Res.*, 112, D23023, doi:10.1029/2006JD007253, 2007.
29. M.J. Kleeman, Q. Ying, M.J. Mysliwiec, R.J. Griffin, and J. Chen, Source apportionment of secondary organic aerosol during a severe photochemical smog episode, *Atmos. Environ.*, 41, 576-591, 2007.
28. L.D. Ziemba, R.J. Griffin, and R.W. Talbot, Observations of elevated particle number concentration events at a rural site in northern New England, *J. Geophys. Res.*, 111, D23S24, doi:10.1029/2006JD007607, 2006.
27. P. Tulet, A. Grini, R.J. Griffin, and S. Petitcol, ORILAM-SOA: A computationally efficient model for predicting secondary organic aerosols in 3D atmospheric models, *J. Geophys. Res.*, 111, D23208, doi:10.1029/2006JD007152, 2006.
26. J. Chen, H. Mao, R.W. Talbot, and R.J. Griffin, Application of the CACM and MPMPO modules using the CMAQ model for the Eastern United States, *J. Geophys. Res.*, 111, D23S25, doi: 10.1029/2006JD007603, 2006.
25. X. Cai and R.J. Griffin, Secondary aerosol formation from the oxidation of biogenic hydrocarbons by chlorine atoms, *J. Geophys. Res.*, 111, D14206, doi: 10.1029/2005JD006857, 2006.
24. S. Vutukuru, R.J. Griffin, and D. Dabdub, Simulation and analysis of secondary organic aerosol dynamics in the South Coast Air Basin of California, *J. Geophys. Res.*, 111, D10S12, doi: 10.1029/2005JD006139, 2006.
23. M. Barth et al., Coupling between land ecosystems and the atmospheric hydrologic cycle through biogenic aerosol pathways, *Bull. Amer. Met. Soc.*, 86, 1738-1742, 2005.

22. J. Chen and R.J. Griffin, Modeling secondary organic aerosol formation from oxidation of  $\alpha$ -pinene,  $\beta$ -pinene, and d-limonene, *Atmos. Environ.*, 39, 7731-7744, 2005.
21. X. Cai and R.J. Griffin, The size-dependent influence of surface tension on the absorptive partitioning of semi-volatile organic compounds, *J. Atmos. Chem.*, 50, 139-158, 2005.
20. M. Carreras-Sospedra, R.J. Griffin, and D. Dabdub, Calculations of incremental aerosol reactivities for secondary organic aerosol precursors, *Environ. Sci. Technol.*, 39, 1724-1730, 2005.
19. R.J. Griffin, D. Dabdub, and J.H. Seinfeld, Development and initial evaluation of a dynamic species-resolved model for gas-phase chemistry and size-resolved gas/particle partitioning associated with secondary organic aerosol formation, *J. Geophys. Res.*, 110, D05304, doi:10.1029/2004JD005219, 2005.
18. R.J. Griffin, C.A. Johnson, R.W. Talbot, H. Mao, R.S. Russo, Y. Zhou, and B.C. Sive, Quantification of ozone formation metrics at Thompson Farm during NEAQS 2002, *J. Geophys. Res.*, 109, D24032, doi: 10.1029/2004JD005344, 2004.
17. C.J. Colville and R.J. Griffin, The roles of individual oxidants in secondary organic aerosol formation from  $\Delta^3$ -carene: 1. Gas-phase chemical mechanism, *Atmos. Environ.*, 38, 4001-4012, 2004.
16. C.J. Colville and R.J. Griffin, The roles of individual oxidants in secondary organic aerosol formation from  $\Delta^3$ -carene: 2. SOA formation and oxidant contribution, *Atmos. Environ.*, 38, 4013-4023, 2004.
15. R.J. Griffin, M. Revelle, and D. Dabdub, Modeling the oxidative capacity of the atmosphere of the South Coast Air Basin of California: 1. Ozone formation metrics, *Environ. Sci. Technol.*, 38, 746-752, 2004.
14. R.J. Griffin, Modeling the oxidative capacity of the atmosphere of the South Coast Air Basin of California: 2. HO<sub>x</sub> radical production, *Environ. Sci. Technol.*, 38, 753-757, 2004.
13. B.K. Pun, S.-Y. Wu, C. Seigneur, J.H. Seinfeld, R.J. Griffin, and S.N. Pandis, Uncertainties in modeling secondary organic aerosols: Three-dimensional modeling studies in Nashville, TN, *Environ. Sci. Technol.*, 37, 3647-3661, 2003.
12. X. Cai and R.J. Griffin, Modeling the formation of secondary organic aerosol in coastal areas: The role of the sea salt organic layer, *J. Geophys. Res.*, 108, 4440, doi:10.1029/2002JD003053, 2003.
11. R.J. Griffin, K. Nguyen, D. Dabdub, and J.H. Seinfeld, A combined hydrophobic-hydrophilic module for predicting secondary organic aerosol formation, *J. Atmos. Chem.*, 44, 171-190, 2003.
10. R.J. Griffin, D. Dabdub, and J.H. Seinfeld, Secondary organic aerosol: I. Atmospheric chemical mechanism for production of molecular constituents, *J. Geophys. Res.*, 107, 4332, doi: 10.1029/2001JD000541, 2002.
9. B.K. Pun, R.J. Griffin, C. Seigneur, and J.H. Seinfeld, Secondary organic aerosol: II. Thermodynamic model for gas/particle partitioning of molecular constituents, *J. Geophys. Res.*, 107, 4333, doi: 10.1029/2001JD000542, 2002.
8. R.J. Griffin, D. Dabdub, M.J. Kleeman, M.P. Fraser, G.R. Cass, and J.H. Seinfeld, Secondary organic aerosol: III. Urban/regional scale model of size and composition resolved aerosols, *J. Geophys. Res.*, 107, 4334, doi: 10.1029/2001JD000544, 2002.

7. R.J. Griffin, D. Dabdub, D.R. Cocker III, and J.H. Seinfeld, Estimate of global atmospheric organic aerosol from oxidation of biogenic hydrocarbons, *Geophys. Res. Lett.*, 26, 2721-2724, 1999.
6. R.J. Griffin, D.R. Cocker III, and J.H. Seinfeld, Incremental aerosol reactivity: Application to aromatic and biogenic hydrocarbons, *Environ. Sci. Technol.*, 33, 2403-2408, 1999.
5. R.J. Griffin, D.R. Cocker III, R.C. Flagan, and J.H. Seinfeld, Organic aerosol formation from the oxidation of biogenic hydrocarbons, *J. Geophys. Res.*, 104, 3555-3567, 1999.
4. J. Yu, R.J. Griffin, D.R. Cocker III, R.C. Flagan, J.H. Seinfeld, and P. Blanchard, Observation of gaseous and particulate products of monoterpene oxidation in forest atmospheres, *Geophys. Res. Lett.*, 26, 1145-1148, 1999.
3. J. Yu, D.R. Cocker III, R.J. Griffin, R.C. Flagan, and J.H. Seinfeld, Gas-phase ozone oxidation of monoterpenes: Gaseous and particulate products, *J. Atmos. Chem.*, 34, 207-258, 1999.
2. J.R. Odum, T.P.W. Jungkamp, R.J. Griffin, R.C. Flagan, and J.H. Seinfeld, The atmospheric aerosol forming potential of whole gasoline vapor, *Science*, 276, 96-99, 1997.
1. J.R. Odum, T.P.W. Jungkamp, R.J. Griffin, H.J.L. Forstner, R.C. Flagan, and J.H. Seinfeld, Aromatics, reformulated gasoline, and atmospheric organic aerosol formation, *Environ. Sci. Technol.*, 31, 1890-1897, 1997.

#### COMMENTS IN PRINT

- N.P. Sanchez, Y. Yu, L. Dong, R.J. Griffin, and F.K. Tittel, Mid-IR laser-based sensor for hydrogen peroxide detection, *SPIE Newsroom*, 2016.
- D. Henze and R. Griffin, Interactive comment on 'Change in global aerosol composition since preindustrial times' by Tsigaridis et al., *Atmos. Chem. Phys. Discuss.*, 6, S1896-1898, 2006.
- K.C. Barsanti, D. Dabdub, R.J. Griffin, J.H. Seinfeld, and J.F. Pankow, Comment on 'Semiempirical model for organic aerosol growth by acid-catalyzed heterogeneous reactions of carbonyls' by Jang et al., *Environ. Sci. Technol.*, 39, 8108-8109, 2005.
- E.M. Knipping, R.J. Griffin, F.M. Bowman, B. Pun, C. Seigneur, D. Dabdub, and J.H. Seinfeld, Comment on 'Instantaneous secondary organic aerosol yields and their comparison with overall aerosol yields for aromatic and biogenic hydrocarbons' by W. Jiang, *Atmos. Environ.*, 38, 2759-2761, 2004.

#### PAPERS IN REVIEW

- N.L. Ng, S.S. Brown, et al., Nitrate radicals and biogenic volatile organic compounds: oxidation, mechanisms, and organic aerosol, in second review for *Atmos. Chem. Phys.*, submitted November 2016.
- L.G. Suci, R.J. Griffin, and C.A. Masiello, Long-term changes in regional background O<sub>3</sub> and NO<sub>x</sub> in the Houston-Galveston-Brazoria (TX) area, in review for *Atmos. Chem. Phys.*, submitted October 2016.
- Y. Yu, N. Sanchez, F. Yi, C. Zheng, W. Ye, H. Wu, R. Griffin, and F. Tittel, Dual quantum cascade laser based sensor for simultaneous NO and NO<sub>2</sub> detection using a wavelength modulation- division multiplexing technique, in review for *Opt. Expr.*, submitted January 2017.



## **PAPERS IN PREPARATION (full draft in existence)**

R.J. Griffin, M.L. Dawson, and D. Dabdub, Simulated sensitivity of urban secondary organic aerosol to nitrogen oxides and other chemical parameters, to be submitted to *Aerosol Sci. Technol.*, expected submission February 2017.

## **PAPERS IN CONFERENCE PROCEEDINGS**

- W. Ren, W. Jiang, N.P. Sanchez, P. Patimisco, V. Spagnolo, C. Zah, F. Xie, L.C. Hughes, R.J. Griffin, and F.K. Tittel, Quantum cascade laser-based sensor for hydrogen peroxide detection, *Proc. Photonics West – Intl. Soc. for Opt. Photonics*, 2014.
- L. Nielsen, X. Cai, L. Cottrell, R.J. Griffin, H.R. Mayne, and B.C. Sive, Reaction of chlorine atoms with monoterpene-air mixtures, *Abstr. Pap. Amer. Chem. Soc.*, 231, 318, 2006.
- X. Cai and R.J. Griffin, The role of surface tension in the partitioning of semi-volatile organic compounds, *J. Aerosol Sci.*, 35, S1237-S1238, 2004.
- R.J. Griffin, K. Nguyen, D. Dabdub, and J.H. Seinfeld, A combined hydrophobic-hydrophilic module for predicting secondary organic aerosol formation, *J. Aerosol Sci.*, 32, S955-S956, 2001.
- J.H. Seinfeld, D.R. Cocker III, R.J. Griffin, J. Yu, B. Hemming, and R.C. Flagan, Aerosol formation from atmospheric oxidation of hydrocarbons, *Abstr. Pap. Amer. Chem. Soc.*, 217, 62, 1999.
- J.R. Odum, T.P.W. Jungkamp, R.J. Griffin, R.C. Flagan, and J.H. Seinfeld, Aromatics, reformulated gasoline, and atmospheric aerosol formation, *Abstr. Pap. Amer. Chem. Soc.*, 214, 107, 1997.

## **PEER-REVIEWED RESEARCH REPORTS**

- B.C. Sive, D. Shively, B. Pape, K. Carpenter, R. Griffin, R.N. Mower, R. Russo, E. Scheuer, Y. Zhou, and O. Wingenter, Spatial variation of volatile organic compounds associated with snowmobile emissions in Yellowstone National Park, submitted to the National Park Service, United States Department of the Interior, 2003.
- J.F. Pankow, W.E. Asher, R.J. Griffin, and J.H. Seinfeld, A study of the secondary organic aerosol formation potentials of important compounds in the atmosphere, submitted to the Coordinating Research Council, Project A-41, 2003.

## **INVITED PRESENTATIONS**

- Atmospheric chemistry and air quality impacts associated with the mixing of biogenic and anthropogenic emissions, Department of Chemical and Environmental Engineering, Yale University, New Haven, CT, November 2016.
- Air quality panel, Earth Day Texas, Dallas, TX, April 2016.
- The future of air pollution engineering and atmospheric chemistry, AEESP Grand Challenges Workshop, Houston, TX, April 2016.
- The influence of oil and gas operations on local air quality, Department of Chemical and Biomolecular Engineering, Georgia Institute of Technology, Atlanta, GA, March 2016.
- Mechanisms controlling HONO mixing ratios in the urban Texas atmosphere, Berkeley Atmospheric Sciences Research Center, University of California – Berkeley, Berkeley, CA, October 2015.
- Measurements and modeling of NO<sub>3</sub>-BVOC reactions in Houston, Workshop on NO<sub>3</sub>-BVOC Reactions, Georgia Institute of Technology, Atlanta, GA, June 2015. (keynote)
- Houston Aerosol Characterization and Health Experiment (HACHE), Health: Global Lens,

Local Focus Conference, Houston, TX, May 2015.

Particulate matter research at Rice, Texas Air Quality Symposium, Austin, TX, April 2015.

New spectroscopic techniques for trace gas measurements, Technology Collaboration Center of Houston Air Quality Technologies Event, Houston, TX, March 2015.

Insight into the chemistry associated with PM in Houston from recent field campaigns, Houston Regional Monitoring Technical Advising Committee, LaPorte, TX, March 2014.

Houston Aerosol Characterization and Health Experiment (HACHE), University of Texas at Houston, School of Public Health, Houston, TX, January 2014.

Houston Aerosol Characterization and Health Experiment (HACHE), Houston Regional Air Quality Planning Advisory Committee Meeting, Houston, TX, January 2014.

Characterization of primary and secondary particulate matter during DISCOVER-AQ, NASA Air Quality Applied Sciences Team (AQAST) Semi-Annual Meeting, Houston, TX, January 2014.

Chemical characterization of submicron aerosol emissions in the greater Houston area using an aerosol mass spectrometer on a mobile platform, American Chemical Society Southwestern Regional Meeting, Waco, TX, November 2013 (presented by H.W. Wallace).

Highly time resolved characterization of chemical and physical processes affecting air quality in major metropolitan areas of Texas, National Academy of Science Workshop on Air Quality in Mega-cities, Irvine, CA, September 2013.

Recent advances in our understanding of particulate matter in Houston, TX, Nankai University, College of Environmental Science and Engineering, Tianjin, China, July 2012.

Recent research results, Texas Commission on Environmental Quality, Air Quality Planning and Implementation Division, Austin, TX, June 2012.

Monitoring of atmospheric ammonia in Houston using a CW-QCL spectroscopic technique, University of Houston, Department of Earth and Atmospheric Sciences (Air Quality in Texas: A Tribute to Daewon Byun), Houston, TX, April 2011.

Characterization of organic aerosol in New England, Texas A&M University – Galveston, Department of Marine Science, Galveston, TX, March 2011.

Heterogeneous processes involving atmospheric organic particulate matter and nitric acid, University of California Riverside, Department of Chemical and Environmental Engineering, Riverside, CA, June 2010.

Mechanisms of particle formation from BVOCs, Gordon Research Conference on Biogenic Hydrocarbons in the Atmosphere, Les Diablerets, Switzerland, May 2010.

Particulate matter in Houston, Texas A&M University, Center for Atmospheric Chemistry and the Environment (Texas Air Quality Symposium), College Station, TX, April 2010.

Modeling of secondary organic aerosol from first principles: How much does water matter?, Columbia University, Department of Chemical Engineering, New York, NY, March 2010.

Modeling of secondary organic aerosol from first principles: How much does water matter?, Rice University, Department of Computational and Applied Mathematics, Houston, TX, February 2010.

Modeling of secondary organic aerosol from first principles: How much does water matter?, University of California Irvine, Department of Chemistry (UCAir

Conference), Laguna Beach, CA, January 2010.

Introduction to atmospheric particulate matter, Baylor College of Medicine (Environmental Health Panel), Houston, TX, October 2009.

The link between air and water pollution in Houston, Rice University, Shell Center for Sustainability (Houston Water Conference), Houston, TX, October 2009.

Atmospheric aerosols and their role in Houston air quality, American Meteorology Society, Houston Section, February 2009.

Cl-aromatic reactions as a source of secondary organic aerosol in the atmosphere, University of Houston, Department of Earth and Atmospheric Sciences, February 2009.

Interactions of nitrogen-containing acids and primary organic aerosol in an urban atmosphere, Texas A&M, University Department of Atmospheric Sciences, February 2009.

The role of organic aerosol in air quality, Rice University, Shell Center for Sustainability (Houston Air Conference), Houston, TX, October 2008.

Cl-aromatic reactions as a source of secondary organic aerosol in the atmosphere, Telluride Specialty Workshop on Organic Aerosols, Telluride, CO, August 2008.

Potential heterogeneous aerosol processes in Houston: Results from TRAMP 2006, University of Göteborg, Department of Chemistry, Göteborg, Sweden, May 2008.

Potential heterogeneous aerosol processes in Houston: Results from TRAMP 2006, Rice University, Department of Civil and Environmental Engineering, Houston, TX, January 2008.

Development and applications of CACM/MPMPO, Aerodyne Research, Inc., Aerosol and Cloud Chemistry Group, Billerica, MA, January 2008.

Development and applications of CACM/MPMPO, University of Houston, Department of Geosciences, Houston, TX, November 2007.

Potential heterogeneous aerosol processes in Houston: Results from TRAMP 2006, National Center for Atmospheric Research, Atmospheric Chemistry Division, Boulder, CO, August 2007.

Potential heterogeneous aerosol processes in Houston: Results from TRAMP 2006, Colorado State University, Department of Atmospheric Sciences, Fort Collins, CO, August 2007.

Secondary aerosol formation from chlorine-initiated oxidation of aromatic compounds, Pacific Northwest National Laboratory, Atmospheric Science and Global Change Division, Richland, WA, July 2007.

Chemical character of organic aerosol in the Northeastern United States, Aerosols – Properties, Processes, Climate, Heraklion, Greece, April 2007.

Laboratory studies of secondary aerosol formation from chlorine-initiated oxidation of volatile organic compounds, University of Wisconsin at Madison, Department of Civil and Environmental Engineering, Madison, WI, March 2007.

Development and applications of CACM/MPMPO, International Conference on Atmospheric Chemical Mechanisms, Davis, CA, December 2006.

Chemical and optical characterization of summer atmospheric aerosol in and near the Gulf of Maine, Massachusetts Institute of Technology Atmospheric Sciences, Cambridge, MA, May 2006.

Atmospheric nitrogen oxides during New England summer: An indication of halogen chemistry in the troposphere, Bowdoin College, Departments of Chemistry and

Environmental Sciences, Brunswick, ME, March 2006.

The role of organic species in ice nucleation, Forum on Organics in the Atmosphere, Alpe d'Huez, France, January 2006. (discussion leader)

Characterization of New England air quality using modeling tools, University of New Hampshire, Environmental Research Group, Durham, NH, September 2005.

Characterization of atmospheric aerosol in New Hampshire, Carnegie Mellon University, Department of Civil and Environmental Engineering, Pittsburgh, PA, April 2005.

Characterization of atmospheric aerosol in New Hampshire, University of New Hampshire, Department of Earth Sciences, Durham, NH, March 2005.

Field measurements of atmospheric organic aerosol, Assumption College, Department of Natural Sciences, Worcester, MA, March 2005.

Simulation of organic aerosol concentrations in emissions-based three-dimensional atmospheric models, EMEP Workshop on Particulate Matter Measurement and Modeling, New Orleans, LA, April 2004.

Modeling oxidant contributions to secondary organic aerosol formation, Harvard University, Department of Earth and Atmospheric Sciences, Cambridge, MA, October 2003.

Modeling the formation of secondary organic aerosol in coastal areas, University of New Hampshire, Department of Chemistry, Durham, NH, March 2003.

Modeling the formation of secondary organic aerosol in coastal areas: The role of the sea salt organic layer, University of North Carolina at Chapel Hill, Department of Environmental Science and Engineering, Chapel Hill, NC, October 2002.

Prediction of secondary organic aerosol in atmospheric models, National Oceanic and Atmospheric Administration, Aeronomy Laboratory, Boulder, CO, June 2002.

Prediction of secondary organic aerosol in atmospheric models, Johns Hopkins University, Department of Geography and Environmental Engineering, Baltimore, MD, May 2002.

Prediction of secondary organic aerosol in atmospheric models, Worcester Polytechnic Institute, Department of Chemical Engineering, Worcester, MA, April 2002.

Prediction of secondary organic aerosol in atmospheric models, Amherst College, Department of Chemistry, Amherst, MA, April 2002.

Prediction of secondary organic aerosol in atmospheric models, Vanderbilt University, Department of Chemical Engineering, Nashville, TN, February 2002.

Prediction of secondary organic aerosol in atmospheric models, University of New Hampshire, Institute for the Study of Earth, Oceans, and Space, Durham, NH, February 2002.

Implications for new findings in atmospheric chemistry: The effects of diesel engine emissions, Duke University, Center for Environmental Solutions, Durham, NC, May 2001.

Thermodynamic simulation of organic aerosol in Los Angeles, United States Environmental Protection Agency, National Exposure Research Laboratory, Research Triangle Park, NC, November 2000.

The solution of the advection equation in three-dimensional air quality models, Duke University, Department of Civil and Environmental Engineering, Durham, NC, October 2000.

Aerosol formation from atmospheric organic oxidation, Duke University, Pratt School of Engineering and Nicholas School of the Environment, Durham, NC, September 2000.

- Military effects on the environment, California Institute of Technology, Environmental Quality Laboratory Seminar Series, Pasadena, CA, June 2000.
- Secondary organic aerosol formation from the atmospheric oxidation of organics, Brookhaven National Laboratory, Division of Environmental Chemistry, Upton, NY, April 2000.
- Secondary organic aerosol formation from the atmospheric oxidation of organics, Duke University, Department of Civil and Environmental Engineering, Durham, NC, April 2000.
- An overview of the importance of organic species in atmospheric aerosols, University of California Irvine, Department of Mechanical and Aerospace Engineering, Irvine, CA, March 2000.
- Secondary organic aerosol formation from the atmospheric oxidation of organics, University of California San Diego, Department of Chemistry and Biochemistry, San Diego, CA, March 2000.
- Secondary organic aerosol formation from the atmospheric oxidation of organics, University of Massachusetts at Amherst, Department of Chemical Engineering, Amherst, MA, February 2000.
- Killer trees?, California Institute of Technology, Environmental Quality Laboratory Seminar Series, Pasadena, CA, September 1998.
- Aerosol formation from the oxidation of organics in the atmosphere, Jet Propulsion Laboratory, Atmospheric Chemistry Seminar Series, Pasadena, CA, September 1998.

#### **CONTRIBUTED PRESENTATIONS**

(Presenting author in bold, underlined author indicates member of my research group)

- J.H. Slade, et al., The influence of monoterpene and isoprene nitrates on the chemistry and phase state of secondary organic aerosol in a low-NO<sub>x</sub> mixed deciduous/coniferous forest, *American Geophysical Union Annual Meeting*, San Francisco, CA, December 2016.
- K. Tuite, et al., Impact of iodine chemistry on coastal ozone levels at the Gulf of Mexico, *American Geophysical Union Annual Meeting*, San Francisco, CA, December 2016.
- B.C. Schulze**, H.W. Wallace, and **R.J. Griffin**, Oxidation of BVOCs and SOA formation above and below a forest canopy, *American Association for Aerosol Research Annual Meeting*, Portland, OR, October 2016.
- H.W. Wallace, N.P. Sanchez, Y. Han, **R.J. Griffin**, C.L. Herring, T.M. VanReken, J.H. Flynn, M.H. Erickson, and B.L. Lefer, Measurement of emissions and air quality in an area of heavy refining, *American Association for Aerosol Research Annual Meeting*, Portland, OR, October 2016. (poster)
- D.S. Wang**, A. Bui, S. Bhandari, J.K. Bean, S.V. Dhulipala, H.W. Wallace, R.J. Griffin, and L. Hildebrandt Ruiz, Volatility and particle-phase hydrolysis of alkyl nitrates from anthropogenic alkanes and alkenes, *American Association for Aerosol Research Annual Meeting*, Portland, OR, October 2016.
- A.N. Myers-Pigg**, P. Louchouart, M.J. Norwood, R.M.W. Amon, R. Griffin, A. Prokushkin, A. Sterne, K. Pierce, A. Rubstov, B.K. Cevik, N. Tananaev, and R. Teisserenc, New insights on the characterization and fate of pyrogenic carbon during transport in aquatic and atmospheric environments, *Organic Geochemistry Gordon Research Conference*, Holderness, NH, July 2016. (poster)

- A. Bui, Y.J. Leong, N. Sanchez, H.W. Wallace, and R. Griffin**, Distribution, influential factors, and sources of aerosol liquid water during the DISCOVER-AQ 2013 campaign in Houston, TX, *American Association for Aerosol Research Annual Meeting*, Minneapolis, MN, October 2015. (poster)
- M. Dawson**, **J. Xu**, R. Griffin, and D. Dabdub, Dynamics of aromatic-derived SOA in the South Coast Air Basin of California, *American Association for Aerosol Research Annual Meeting*, Minneapolis, MN, October 2015.
- C. Hernandez, Y.J. Leong**, and R. Griffin, Analysis of particle number concentrations in Houston, *American Association for Aerosol Research Annual Meeting*, Minneapolis, MN, October 2015. (poster)
- B. Karakurt Cevik, Y.J. Leong, C. Hernandez**, and R. Griffin, Characterization of ambient aerosol concentration, composition, and aging during the Southern Oxidant and Aerosol Study, *American Association for Aerosol Research Annual Meeting*, Minneapolis, MN, October 2015. (poster)
- Y.J. Leong, N. Sanchez, H.W. Wallace, B. Karakurt Cevik, J. Flynn, Y. Han, P. Massoli, C. Flerchinger, E. Fortner, S. Herndon, B. Lefer, and R. Griffin**, Overview of surface measurements of submicron particulate matter in the greater Houston area during the DISCOVER-AQ 2013 field campaign, *American Association for Aerosol Research Annual Meeting*, Minneapolis, MN, October 2015.
- N. Sanchez**, Y.J. Leong, H.W. Wallace, B. Karakurt Cevik, J. Flynn, B. Lefer, and R. Griffin, Understanding the character and dynamics of organic aerosol in the Houston area using multi-way factor analysis, *American Association for Aerosol Research Annual Meeting*, Minneapolis, MN, October 2015.
- B. Schulze, H.W. Wallace**, and R. Griffin, Modeling nitrate radical oxidation of biogenic volatile organic compounds above and below the canopy during CABINEX 2009, *American Association for Aerosol Research Annual Meeting*, Minneapolis, MN, October 2015. (poster)
- H.W. Wallace, Y.J. Leong, N. Sanchez, B. Schulze, J. Flynn, B. Lefer, and R. Griffin**, Houston Aerosol Characterization and Health Experiment: A two-year health impacts survey of chemically resolved, non-refractory PM<sub>1</sub> in the Houston, TX metropolitan area, *American Association for Aerosol Research Annual Meeting*, Minneapolis, MN, October 2015. (poster)
- B. Czader**, D. Cohan, N. Sanchez, F. Tittel, and R. Griffin, Mapping the spatial distribution of methane in Houston, Texas, *Community Modeling and Analysis System Conference*, Chapel Hill, NC, October 2015.
- Y.J. Leong, N.P. Sanchez, H.W. Wallace IV, A.T Bui, C.S. Hernandez, B. Karakurt Cevik, J.H. Flynn, B. Lefer, and **R.J. Griffin**, Overview of surface PM<sub>1</sub> measurements during DISCOVER-AQ Houston 2013, *Atmospheric Chemistry Gordon Research Conference*, Waterville Valley, NH, August 2015.
- R.J. Griffin** and B.L. Lefer, Surface data analyses for Houston during DISCOVER-AQ 2013, *Texas Commission on Environmental Quality Air Quality Research Program Workshop*, Austin, TX, June 2015.
- L. Judd**, **Y. Han**, B. Lefer, and R. Griffin, Photochemical modeling of ozone production during DISCOVER-AQ Texas, *Texas Air Quality Symposium*, Austin, TX, April 2015. (poster)
- B. Karakurt Cevik, Y.J. Leong, C. Hernandez**, R. Griffin, and D. Collins, Characterization of ambient aerosol concentration, composition, and aging during the

- Southern Oxidant and Aerosol Study, *Texas Air Quality Symposium*, Austin, TX, April 2015. (poster)
- Y.J. Leong**, **N.P. Sanchez**, **H.W. Wallace IV**, **B. Karakurt Cevik**, **A. Bui**, **Y. Han**, J.H. Flynn, B. Lefer, R.W. Talbot, P.L. Laine, X. Lan, D. Anderson, and R.J. Griffin, Overview of surface measurements of PM during the DISCOVER-AQ 2013 campaign in Houston, TX, *Texas Air Quality Symposium*, Austin, TX, April 2015. (poster)
- Y.J. Leong**, **A.P. Rutter**, **H.Y. Wong**, **C.V. Gutierrez**, **M. Junaid**, E. Scheuer, **L. Gong**, R. Lewicki, J.E. Dibb, F.K. Tittel, and R.J. Griffin, Impact of environmental variables on the reduction of HNO<sub>3</sub> by proxies for VOCs emitted by motor vehicles, *Texas Air Quality Symposium*, Austin, TX, April 2015. (poster).
- N.P. Sanchez**, Y. Cao, M. Jahjah, W. Jiang, W. Ren, S.C. Herndon, R.J. Griffin, and F.K. Tittel, Detection of atmospheric hydrogen peroxide, methane and nitrous oxide by mid-infrared laser spectroscopy, *Texas Air Quality Symposium*, Austin, TX, April 2015. (poster)
- B.C. Schulze**, **H.W. Wallace IV**, and R.J. Griffin, Modeling nitrate radical oxidation of BVOCs above and below the forest canopy during CABINEX 2009, *Texas Air Quality Symposium*, Austin, TX, April 2015. (poster)
- H.W. Wallace IV**, K.M. Osiecki, J.H. Flynn, B. Lefer, S. Alvarez, **B.C. Schulze**, **Y.J. Leong**, **N.P. Sanchez**, M. Brewer, R.T. Kimbro, J.T. Denney, and R.J. Griffin, Houston Aerosol Characterization and Health Experiment: A two-year health impacts survey of chemically resolved, non-refractory PM<sub>1</sub> in the Houston, TX metropolitan area, *Texas Air Quality Symposium*, Austin, TX, April 2015. (poster)
- H.W. Wallace IV**, **Y.J. Leong**, **B.C. Schulze**, **B. Karakurt Cevik**, J.H. Flynn, D. Anderson, **M. Camp**, B.L. Lefer, and R.J. Griffin, Characterization of nocturnal aerosol formation in Houston during DISCOVER-AQ, *Texas Air Quality Symposium*, Austin, TX, April 2015. (poster)
- B. Lefer**, J. Flynn, L. Judd, X. Ren, M. Estes, and R. Griffin, The spatial and temporal variability of ozone in the Houston metropolitan area during DISCOVER-AQ and its relation to meteorological conditions, *American Geophysical Union Winter Meeting*, San Francisco, CA, December 2014.
- P. Louchouart**, R. Griffin, M. Norwood, A. Sterne, and **B. Karakurt Cevik**, Signatures of biomass burning aerosols during a smoke plume event from a saltmarsh wildfire in South Texas, *American Geophysical Union Winter Meeting*, San Francisco, CA, December 2014. (poster)
- R. Sheesley**, T. Barrett, S. Yoon, A. Clark, L. Hildebrandt-Ruiz, R. Griffin, **B. Karakurt Cevik**, R. Long, R. Duvall, and S. Usenko, Spatial trends in surface-based carbonaceous aerosol, including organic, water-soluble, and elemental carbon, during DISCOVER-AQ in Houston, TX, *American Geophysical Union Winter Meeting*, San Francisco, CA, December 2014. (poster)
- H.W. Wallace**, **Y.J. Leong**, **B.K. Cevik**, **M.G. Camp**, J.H. Flynn, B.L. Lefer, and **R.J. Griffin**, Characterization of nocturnal aerosol formation in Houston during DISCOVER-AQ, *American Association for Aerosol Research Annual Meeting*, Orlando, FL, October 2014.
- R. Ferrare, J. Crawford, R. Griffin, C. Hostetler, B. Anderson, B. Holben, R. Hoff, A. Beyersdorf, and L. Ziemba, DISCOVER-AQ investigation of aerosol impacts on air quality over Houston, *American Association for Aerosol Research Annual Meeting*, Orlando, FL, October 2014.

- H.W. Wallace, Y.J. Leong, B.K. Cevik, M.G. Camp, J.H. Flynn, B.L. Lefer, and **R.J. Griffin**, Characterization of nocturnal aerosol formation in Houston during DISCOVER-AQ, *International Global Atmospheric Chemistry Quadrennial Meeting*, Natal, Brazil, September 2014. (poster)
- Y.J. Leong, A.P. Rutter, C.V. Gutierrez, H.Y. Wong, M. Junaid, E. Scheuer, J.E. Dibb, and R.J. Griffin, The impact of environmental variables on the reduction of HNO<sub>3</sub> by volatile organic compounds emitted by motor vehicles, *American Chemical Society Annual Meeting*, San Francisco, CA, August 2014.
- H.W. Wallace, Y.J. Leong, B. Lefer, B.K. Cevik, J.H. Flynn, R.W. Talbot, P.L. Laine, B.C. Sive, X. Lan, D. Anderson, Y. Zhou, M. Camp, and R.J. Griffin, Characterization of aerosol organic nitrate in the outflow from Houston, TX, during the DISCOVER-AQ campaign, *American Chemical Society Annual Meeting*, San Francisco, CA, August 2014.
- F.K. Tittel**, W. Ren, N.P. Sanchez, W. Jiang, P. Patimisco, V. Spangolo, and R.J. Griffin, Mid-infrared semi-conductor laser-based trace gas sensor technologies: Recent advances and applications, *FLAIR – Field Laser Applications in Industry and Research*, Pratolino, Italy, May 2014.
- N. Sanchez, M. Jahjah, W. Jiang, W. Ren, P. Patimisco, V. Spagnolo, S. Herndon, R.J. Griffin, and F.K. Tittel, Atmospheric CH<sub>4</sub> and N<sub>2</sub>O measurements near greater Houston area landfills using a QCL-based QEPAS sensor system during DISCOVER-AQ 2013, *AQAST Semi-Annual Meeting*, Houston, TX, January 2014. (poster)
- Y.J. Leong, H.W. Wallace, B. Lefer, B.K. Cevik, J.H. Flynn, R.W. Talbot, P.L. Laine, B.C. Sive, X. Lan, D. Anderson, Y. Zhou, M. Camp, and R.J. Griffin, Chemical characterization of submicron aerosol emissions in the greater Houston area using an aerosol mass spectrometer on a mobile platform, *AQAST Semi-Annual Meeting*, Houston, TX, January 2014. (poster)
- J. Xu**, Y. Liu, S. Nakao, D.R. Cocker III, and R.J. Griffin, Simulation of SOA formation and composition from oxidation of toluene and m-xylene in chamber experiments, *AQAST Semi-Annual Meeting*, Houston, TX, January 2014. (poster)
- B.K. Cevik, Y.J. Leong, C. Hernandez, R.J. Griffin, Characterization of ambient aerosols during the Southern Oxidant and Aerosol Study (SOAS) in Centreville, AL, with a high-resolution time-of-flight aerosol mass spectrometer, *American Geophysical Union Winter Meeting*, San Francisco, CA, December 2013. (poster)
- Y.J. Leong, H.W. Wallace, B. Lefer, B.K. Cevik, J.H. Flynn, R.W. Talbot, P.L. Laine, B.C. Sive, X. Lan, D. Anderson, Y. Zhou, M. Camp, R.J. Griffin, Chemical characterization of submicron aerosol emissions in the greater Houston area using an aerosol mass spectrometer on a mobile platform, *American Geophysical Union Winter Meeting*, San Francisco, CA, December 2013. (poster)
- J. Xu**, Y. Liu, S. Nakao, D.R. Cocker III, and R.J. Griffin, Simulation of SOA formation and composition from oxidation of toluene and m-xylene in chamber experiments, *American Geophysical Union Winter Meeting*, San Francisco, CA, December 2013. (poster)
- D. Collins, **N. Taylor**, J. Matus, C. Antonietti, C. Spencer, R. Griffin, Y.J. Leong, B.K. Cevik, Measurement of the sensitivity of biogenic SOA formation under ambient conditions to anthropogenic factors using a new captive aerosol growth and evolution chamber system during the Southern Oxidant and Aerosol Study, *American Association for Aerosol Research Annual Conference*, Portland, OR, October 2013. (poster)



- S. Kim**, A.B. Guenther, T. Karl, B.L. Lefer, J.H. Flynn, R.J. Griffin, and **A.P. Rutter**, Sub-urban OH response to isoprene chemistry: A case study in the Dallas Fort-Worth area, *American Geophysical Union Winter Meeting*, San Francisco, CA, December 2012. (poster)
- A.P. Rutter**, **Q. Malloy**, E. Scheuer, **C. Gutierrez**, **M. Calzada**, J.E. Dibb, and R.J. Griffin, The reduction of HNO<sub>3</sub> to HONO by volatile organic compounds associated with rush hour traffic, *American Geophysical Union Winter Meeting*, San Francisco, CA, December 2012. (poster)
- L. Gong**, R. Lewicki, R.J. Griffin, **A. Rutter**, F.K. Tittel, B.L. Lefer, J.H. Flynn, J.E. Dibb, and E. Scheuer, Gas-particle partitioning of ammonia in the Fort Worth, TX area, *American Association for Aerosol Research Annual Conference*, Minneapolis, MN, October 2012. (poster)
- B. Karakurt Cevik**, **L. Gong**, R. Lewicki, R.J. Griffin, **A. Rutter**, F.K. Tittel, B.L. Lefer, J.H. Flynn, J.E. Dibb, and E. Scheuer, Comparison of estimates of air mass aging using particle and other measurements near Fort Worth, TX, *American Association for Aerosol Research Annual Conference*, Minneapolis, MN, October 2012.
- Y.J. Leong**, **C. Gutierrez**, R.J. Griffin, and B.L. Lefer, Measurement of aerosol number concentrations in Houston, TX, *American Association for Aerosol Research Annual Conference*, Minneapolis, MN, October 2012. (poster)
- A. P. Rutter**, **B. Karakurt Cevik**, **K.M. Shakya**, **L. Gong**, **C. Gutierrez**, **M. Calzada**, **S. Kim**, R.J. Griffin, J.H. Flynn, and B.L. Lefer, Source apportionment of organic aerosols and VOCs near Fort Worth, TX, *American Association for Aerosol Research Annual Conference*, Minneapolis, MN, October 2012.
- L. Gong**, R. Lewicki, R.J. Griffin, J.H. Flynn, B.L. Lefer, and F.K. Tittel, Atmospheric ammonia measurements in Houston, TX and their implications for particulate matter formation, *American Association for Aerosol Research Annual Conference*, Orlando, FL, October 2011.
- Y. Liu**, S. Nakao, P. Tang, D. Cocker, and R.J. Griffin, Computational simulation of secondary organic aerosol from toluene oxidation, *American Association for Aerosol Research Annual Conference*, Orlando, FL, October 2011. (poster)
- K.M. Shakya**, P. Louchouart, and R.J. Griffin, Lignin-derived phenols in Houston aerosols: Implications for natural background sources, *American Association for Aerosol Research Annual Conference*, Orlando, FL, October 2011. (poster)
- Rutter, A. P.**; **Shakya, K.M.**, **Lehr, R.M.**, Parman, A.M., Schauer, J. J., Griffin, R.J., Oxidation of gaseous elemental mercury in simulated urban smog, *International Conference on Mercury as a Global Pollutant*, Halifax, NS, Canada, July 2011. (poster)
- L. Gong**, R. Lewicki, R.J. Griffin, J.H. Flynn, B.L. Lefer, and F.K. Tittel, Atmospheric ammonia measurements in Houston, TX using an external cavity-quantum cascade laser-based sensor, *American Geophysical Union Fall Meeting*, San Francisco, CA, December 2010 (poster).
- K.M. Shakya**, **P.F. Place, Jr.**, R.J. Griffin, A.P. Ouimette, and R. Talbot, Characterization of stable carbon and nitrogen isotopes in aerosols at a semi-rural New England location: Temporal variations and implications for sources, *American Geophysical Union Fall Meeting*, San Francisco, CA, December 2010 (poster).
- K.M. Shakya**, **P.F. Place, Jr.**, **L.D. Ziemba**, and R.J. Griffin, Seasonal characterization of atmospheric organic aerosols at a rural location in New Hampshire, *American*

- Association for Aerosol Research Annual Conference*, Portland, OR, October 2010 (poster).
- Q.J.G. Malloy**, R.J. Griffin, and J.E. Dibb, Formation of HONO via heterogeneous reaction of nitric acid and primary organic aerosol, *American Association for Aerosol Research Annual Conference*, Portland, OR, October 2010.
- W.L. Chang**, R.J. Griffin, and D. Dabdub, Phase partitioning preference for secondary organic aerosol in an urban atmosphere, *American Association for Aerosol Research Annual Conference*, Portland, OR, October 2010.
- Q.J.G. Malloy**, R.J. Griffin, and J.E. Dibb, Formation of HONO via heterogeneous reaction of nitric acid and primary organic aerosol, *International Aerosol Conference*, Helsinki, Finland, August 2010 (poster).
- K.M. Shakya**, A.P. Rutter, **R.M. Lehr**, A.M. Parman, J.J. Schauer, and R.J. Griffin, Net oxidation rates of gaseous elemental mercury in simulated urban smog, *American Geophysical Union Fall Meeting*, San Francisco, CA, December 2009. (poster)
- O. Klemm**, **L.D. Ziemba**, B.C. Sive, R.J. Griffin, and R.W. Talbot, Highly time-resolved observation of a particle growth event, *European Aerosol Conference*, Karlsruhe, Germany, November 2009. (poster)
- C.E. Jordan**, P. Ziemann, R. Griffin, Y. Lim, R. Atkinson, and J. Arey, Modeling SOA formation from OH reactions with C<sub>8</sub> - C<sub>17</sub> n-alkanes, *American Association for Aerosol Research Annual Meeting*, Orlando, FL, October 2008. (poster)
- P. Place**, **L.D. Ziemba**, and R.J. Griffin, Observations of nucleation-mode particle events and size distributions at a rural New England site, *American Association for Aerosol Research Annual Meeting*, Orlando, FL, October 2008. (poster)
- K.M. Shakya** and R.J. Griffin, Characteristics of carbonaceous aerosols during winter in Kathmandu, Nepal, *American Association for Aerosol Research Annual Meeting*, Orlando, FL, October 2008. (poster)
- L.D. Ziemba**, R. Griffin, J. Dibb, and P. Beckman, Summertime aerosol size distributions at Summit, Greenland, *American Association for Aerosol Research Annual Meeting*, Orlando, FL, October 2008. (poster)
- B. Rappenglück** et al., Texas Air Quality Study II Radical and Aerosol Measurement Program, *European Geosciences Union Annual Meeting*, Vienna, Austria, April 2008.
- L.D. Ziemba**, R.J. Griffin, C.H. Anderson, **J.E. Dibb**, S.I. Whitlow, B. Lefer, J. Flynn, and B. Rappenglück, Interactions of gas-phase nitric/nitrous acids and primary organic aerosol in the atmosphere of Houston, TX, *Workshop on Nitrous Acid: Tropospheric Chemistry, Measurement Techniques and Future Directions*, Wuppertal, Germany, March 2008. (poster)
- J. Stutz** et al., Influence of vertical mixing on the distribution of trace gases during the 2006 TRAMP experiment in Houston, TX, *10<sup>th</sup> Conference on Atmospheric Chemistry*, *American Meteorological Society*, New Orleans, LA, January 2008.
- K.M. Shakya** and R.J. Griffin, Secondary organic aerosol formation from the oxidation of polycyclic aromatic hydrocarbons with two aromatic rings, *American Geophysical Union Winter Meeting*, San Francisco, CA, December 2007. (poster)
- J. Stutz** et al., Overview of the Texas Air Quality Study II Radical Measurement Program, *American Geophysical Union Winter Meeting*, San Francisco, CA, December 2007.
- L.D. Ziemba**, R.J. Griffin, J.E. Dibb, C.H. Anderson, S.I. Whitlow, B. Lefer, J. Flynn, and B. Rappenglück, Interactions of gas-phase nitric/nitrous acids and primary organic

- aerosol in the atmosphere of Houston, TX, *American Geophysical Union Winter Meeting*, San Francisco, CA, December 2007. (poster)
- J. Chen** and R.J. Griffin, Simulating secondary organic aerosol formation from cloud processing of organic compounds in CMAQ-MADRID, *International Aerosol Modeling Algorithms Conference*, Davis, CA, December 2007.
- S.L. Clegg**, M.J. Kleeman, R.J. Griffin, and J.H. Seinfeld, Effects of uncertainties in the thermodynamic properties of organic aerosol components in an air quality model, *American Association for Aerosol Research Annual Meeting*, Reno, NV, September 2007.
- K. Dzepina** et al., Comparison of several secondary organic aerosol (SOA) models for a Mexico City case study of April 9, 2003, *American Association for Aerosol Research Annual Meeting*, Reno, NV, September 2007. (poster)
- L.D. Ziemba**, **R.J. Griffin**, C.H. Anderson, J.E. Dibb, S.I. Whitlow, B. Lefer, J. Flynn, and B. Rappenglück, Interaction of gas-phase nitric acid and primary organic aerosol in the atmosphere of Houston, TX, *American Association for Aerosol Research Annual Meeting*, Reno, NV, September 2007.
- G. Hagler**, M.H. Bergin, E. Smith, J.E. Dibb, C. Anderson, R. Griffin, J.J. Schauer, M.M. Shafer, E. von Schneidemesser, and E. Steig, Atmospheric and snow-phase carbonaceous species on the Greenland Ice Sheet, *European Geophysical Union Annual Meeting*, Vienna, Austria, April 2007. (poster)
- L.D. Ziemba**, R.J. Griffin, S.I. Whitlow, and R.W. Talbot, Chemical characterization of the water-soluble fraction of size segregated organic aerosol at two sites in New England, *Northeast Section Geological Society of America Meeting*, Durham, NH, March 2007. (poster)
- C.H. Anderson**, J.E. Dibb, R.J. Griffin, G.S.W. Hagler, and M.H. Bergin, Water-soluble organic carbon measurements at Summit, Greenland, *Northeast Section Geological Society of America Meeting*, Durham, NH, March 2007. (poster)
- X. Cai** and R.J. Griffin, Aerosol formation from the oxidation of aromatic hydrocarbons by chlorine, *American Geophysical Union Winter Meeting*, San Francisco, CA, December 2006. (poster)
- J. Chen**, R.J. Griffin, H. Mao, and R. Talbot, Modeling secondary organic aerosol formation through the aqueous-phase processing of organic compounds, *American Geophysical Union Winter Meeting*, San Francisco, CA, December 2006. (poster)
- C.E. Jordan**, P.J. Ziemann, R.J. Griffin, Y.-B. Lim, R. Atkinson, and J. Arey, Modeling the transition from predominantly gas- to predominantly aerosol-phase products from OH reactions with the homologous series of C<sub>10</sub> to C<sub>15</sub> n-alkanes, *American Geophysical Union Winter Meeting*, San Francisco, CA, December 2006. (poster)
- A.A.P. Pszenny** et al., Aerosol and inorganic gaseous iodine at Appledore Island, Maine, during summers 2004, 2005, and 2006, *American Geophysical Union Winter Meeting*, San Francisco, CA, December 2006.
- Q. Zhang** et al., Organic aerosols in rural and remote atmospheric environments: Insights from aerosol mass spectrometry, *American Geophysical Union Winter Meeting*, San Francisco, CA, December 2006.
- L.D. Ziemba**, R.J. Griffin, S.I. Whitlow, and R.W. Talbot, Chemical characterization of the water soluble fraction of size segregated organic aerosol at two sites in New England, *American Geophysical Union Winter Meeting*, San Francisco, CA, December 2006. (poster)

- J. Chen**, R.J. Griffin, H. Mao, and R. Talbot, Modeling secondary organic aerosol formation through the aqueous-phase processing of organic compounds, *International Conference on Atmospheric Chemical Mechanisms*, Davis, CA, December 2006. (poster)
- C.E. Jordan**, P.J. Ziemann, R.J. Griffin, Y.-B. Lim, R. Atkinson, and J. Arey, Modeling the transition from predominantly gas- to predominantly aerosol-phase products from OH reactions with the homologous series of C<sub>10</sub> to C<sub>15</sub> n-alkanes, *International Conference on Atmospheric Chemical Mechanisms*, Davis, CA, December 2006. (poster)
- S. Vutukuru**, R.J. Griffin, and D. Dabdub, A dynamic approach to model secondary organic aerosol, *International Aerosol Conference/American Association for Aerosol Research Annual Meeting*, St. Paul, MN, September 2006. (poster)
- C.A. Corr**, **L.D. Cottrell**, **L.D. Ziemba**, **P.J. Beckman**, R.W. Talbot, and R.J. Griffin, Measurements of aerosol chemical composition and optical properties in the polluted summer marine boundary layer, *International Aerosol Conference/American Association for Aerosol Research Annual Meeting*, St. Paul, MN, September 2006. (poster)
- L.C. Nielsen**, **X. Cai**, R.J. Griffin, R.P. Johnson, I.D. Mackie, **H.R. Mayne**, and B.C. Sive, Reaction of monoterpene-air mixtures with Cl atoms, *19<sup>th</sup> International Symposium on Gas Kinetics*, Orleans, France, July 2006. (poster)
- L.C. Nielsen**, **X. Cai**, **L. Cottrell**, R.J. Griffin, R.P. Johnson, H.R. Mayne, and B.C. Sive, Reaction of chlorine atoms with monoterpene-air mixtures, *American Chemical Society Spring Meeting*, Atlanta, GA, March 2006. (poster)
- L.D. Cottrell**, **L.D. Ziemba**, **J. Chen**, L.C. Nielsen, **P.J. Beckman**, B.C. Sive, H. Mao, R.W. Talbot, and **R.J. Griffin**, Characterization of organic aerosols at Thompson Farm during ICARTT, *Forum on Organics in the Atmosphere*, Alpe d'Huez, France, January 2006. (poster)
- C.E. Jordan**, B. Lim, P.J. Ziemann, R. Atkinson, J. Arey, and R.J. Griffin, Simulation of the secondary organic aerosol formation potential of long-chain alkanes, *American Geophysical Union Annual Meeting*, San Francisco, CA, December 2005. (poster)
- X. Cai** and R.J. Griffin, Secondary organic aerosol formation from the Cl-initiated oxidation of monoterpenes, *American Association for Aerosol Research Annual Meeting*, Austin, TX, October 2005. (poster)
- J. Chen**, H. Mao, and R.J. Griffin, Simulation of ozone and particulate matter for the Eastern United States using the CMAQ model implemented with the CACM and MPMPO modules, *American Association for Aerosol Research Annual Meeting*, Austin, TX, October 2005.
- J. Medina**, A. Nenes, **L. Cottrell**, and R. Griffin, Mixing state of CCN in the Northeastern United States, *American Association for Aerosol Research Annual Meeting*, Austin, TX, October 2005.
- B. Pun**, J.F. Pankow, R.J. Griffin, and E.M. Knipping, An upgraded absorptive secondary organic aerosol partitioning module for three-dimensional air quality applications, *American Association for Aerosol Research Annual Meeting*, Austin, TX, October 2005.
- R.J. Griffin** and **P.J. Beckman**, An analysis of the O<sub>3</sub>-NO<sub>x</sub> photostationary state at Thompson Farm during ICARTT, *Gordon Research Conference on Atmospheric Chemistry*, Big Sky, MT, September 2005. (poster)

- B.B. Cook, C.E. Jordan, L.D. Ziemba, R.J. Griffin, and **P.J. Beckman**, Analysis of sources and distribution of aerosol nitrate at Thompson Farm, *European Aerosol Conference*, Ghent, Belgium, September 2005. (poster)**
- L.D. Cottrell, L.D. Ziemba, P.J. Beckman**, and R.J. Griffin, Chemical composition and size distribution of submicron particles at Thompson Farm in Durham, New Hampshire, during the ICARTT 2004 campaign, *European Aerosol Conference*, Ghent, Belgium, September 2005. (poster)
- L.D. Ziemba**, R.J. Griffin, and R.W. Talbot, Spatial and temporal trends in particle acidity in northern New England, *European Aerosol Conference*, Ghent, Belgium, September 2005.
- S. Vutukuru**, R.J. Griffin, and D. Dabdub, Sensitivity of modeled secondary organic aerosol concentrations, *American Association for Aerosol Research PM Specialty Meeting*, Atlanta, GA, February 2005.
- M.J. Kleeman**, Q. Ying, **J. Chen**, and R.J. Griffin, Source apportionment of secondary organic aerosol in the South Coast Air Basin, *American Association for Aerosol Research PM Specialty Meeting*, Atlanta, GA, February 2005.
- D. Dabdub, R.J. Griffin**, and J.H. Seinfeld, Update on the development and application of CACM and MPMPO, *Electric Power Research Institute Roundtable on Modeling Secondary Organic Aerosol*, Palo Alto, CA, February 2005.
- B. Sive**, C. Nielsen, R. Griffin, R. Varner, Y. Zhou, **P. Beckman**, R. Russo, and R. Talbot, Atmospheric VOC measurements at Thompson Farm and Appledore Island during the ICARTT 2004 summer campaign, *2nd International Conference on Proton Transfer Reaction Mass Spectrometry and Its Applications*, Obergurgl, Austria, January 2005.
- X. Cai** and R.J. Griffin, Secondary organic aerosol formation from the Cl-initiated oxidation of VOCs, *American Association for Aerosol Research Annual Meeting*, Atlanta, GA, October 2004. (poster)
- J. Chen** and R.J. Griffin, Modeling secondary organic aerosol formation from the oxidation of biogenic hydrocarbons, *American Association for Aerosol Research Annual Meeting*, Atlanta, GA, October 2004. (poster)
- L. Ziemba**, R.W. Talbot, and R.J. Griffin, Spatial and temporal trends in particle acidity in northern New England, *American Association for Aerosol Research Annual Meeting*, Atlanta, GA, October 2004. (poster)
- X. Cai** and **R.J. Griffin**, Secondary organic aerosol formation from the Cl-initiated oxidation of VOCs, *8<sup>th</sup> International Conference on Carbonaceous Particles in the Atmosphere*, Vienna, Austria, September 2004.
- X. Cai** and **R.J. Griffin**, The role of surface tension in the partitioning of semi-volatile organic compounds, *European Aerosol Conference*, Budapest, Hungary, September 2004.
- R.J. Griffin** and **C.A. Johnson**, Secondary pollutant formation metrics during the New England Air Quality Study 2002, *American Geophysical Union Winter Meeting*, San Francisco, CA, December 2003. (poster)
- M. Carreras**, R.J. Griffin, and D. Dabdub, On-line calculation of incremental aerosol reactivities for secondary organic aerosol precursors, *American Association for Aerosol Research Annual Meeting*, Anaheim, CA, October 2003. (poster)
- R.J. Griffin**, D. Dabdub, and J.H. Seinfeld, Next generation model for predicting atmospheric gas-to-particle conversion in inorganic/organic systems, *American Association for Aerosol Research Annual Meeting*, Anaheim, CA, October 2003.

- R.J. Griffin**, B.C. Sive, Y. Zhou, R. Russo, and O. Wingenter, Estimation of the formation rate of secondary organic aerosol in suburban/rural locations: Application to Yellowstone National Park and suburban southern New Hampshire, *American Association for Aerosol Research Annual Meeting*, Anaheim, CA, October 2003.
- R.J. Griffin**, M. Revelle, and D. Dabdub, Modeling ozone formation metrics in the South Coast Air Basin of California, *Atmospheric Chemistry Gordon Research Conference*, Big Sky, MT, September 2003. (poster)
- X. Cai and **R.J. Griffin**, Modeling the formation of secondary organic aerosol in coastal areas: The role of the sea salt organic layer, *American Geophysical Union and European Geophysical Union Joint Assembly*, Nice, France, April 2003.
- C.J. Colville and R.J. Griffin, Individual oxidant contributions to secondary organic aerosol formation: Application to  $\Delta^3$ -carene, *Air and Waste Management Association Annual Southern Atlantic States Meeting*, Research Triangle Park, NC, December 2002. (poster)
- E.A. Ralston, D. Vasudevan, E.M. Cooper, and R.J. Griffin, Experimental and modeling studies of the sorption of ionic adsorbents to oxide surfaces, *Air and Waste Management Association Annual Southern Atlantic States Meeting*, Research Triangle Park, NC, December 2002. (poster, won student poster competition)
- C.J. Colville and R.J. Griffin, Individual oxidant contributions to secondary organic aerosol formation: Application to  $\Delta^3$ -carene, *American Association for Aerosol Research Annual Meeting*, Charlotte, NC, October 2002.
- R.J. Griffin**, K. Nguyen, D. Dabdub, and J.H. Seinfeld, A combined hydrophobic-hydrophilic module for predicting secondary organic aerosol formation, *American Association for Aerosol Research Annual Meeting*, Portland, OR, October 2001.
- B.K. Pun**, C. Seigneur, J.H. Seinfeld, R.J. Griffin, and S.N. Pandis, Comparison of three secondary organic aerosol models using the Models-3/CMAQ framework, *American Association for Aerosol Research Annual Meeting*, Portland, OR, October 2001.
- R.J. Griffin**, K. Nguyen, D. Dabdub, and J.H. Seinfeld, A combined hydrophobic-hydrophilic module for predicting secondary organic aerosol formation, *European Aerosol Conference Special Session on Secondary Organic Aerosol*, Leipzig, Germany, September 2001.
- R.J. Griffin**, K. Nguyen, D. Dabdub, and J.H. Seinfeld, A combined hydrophobic-hydrophilic module for predicting secondary organic aerosol formation, *Atmospheric Chemistry Gordon Research Conference*, Newport, RI, June 2001. (poster)
- R.J. Griffin**, D. Dabdub, M.J. Kleeman, M.P. Fraser, G.R. Cass, and J.H. Seinfeld, Thermodynamic simulation of secondary organic aerosol using a three-dimensional air quality model for Los Angeles, *American Association for Aerosol Research Annual Meeting*, St. Louis, MO, October 2000.
- B.K. Pun**, R.J. Griffin, C. Seigneur, and J.H. Seinfeld, Application of a new organic aerosol partition module, *American Association for Aerosol Research Annual Meeting*, St. Louis, MO, October 2000.
- R.J. Griffin**, D.R. Cocker III, J. Yu, R.C. Flagan, and J.H. Seinfeld, The formation of organic aerosol from  $\beta$ -pinene, *Gordon Research Conference on Biogenic Hydrocarbons in the Atmosphere*, Ventura, CA, February 2000.
- R.J. Griffin**, D. Dabdub, D.R. Cocker III, and J.H. Seinfeld, An estimate of the global annual formation of secondary organic aerosol from biogenic precursors, *Atmospheric*

*Chemistry Colloquium for Emerging Senior Scientists*, South Kingstown, RI, June 1999.

- R.J. Griffin**, D. Dabdub, D.R. Cocker III, and J.H. Seinfeld, An estimate of the global annual formation of secondary organic aerosol from biogenic precursors, *Atmospheric Chemistry Gordon Research Conference*, Newport, RI, June 1999. (poster)
- J.H. Seinfeld**, D.R. Cocker III, R.J. Griffin, J. Yu, B. Hemming, and R.C. Flagan, Aerosol formation from atmospheric oxidation of hydrocarbons, *American Chemical Society Spring Meeting*, Anaheim, CA, March 1999.
- R.J. Griffin**, D.R. Cocker III, R.C. Flagan, and J.H. Seinfeld, Secondary organic aerosol from biogenic precursors, *American Association for Aerosol Research Annual Meeting*, Cincinnati, OH, June 1998.
- R.J. Griffin**, D.R. Cocker III, R.C. Flagan, and J.H. Seinfeld, The contribution of biogenic species to secondary organic aerosol formation, *Southern California Symposium on Photochemical and Kinetic Processes in the Atmosphere*, Riverside, CA, March 1998.
- J.R. Odum**, T.P.W. Jungkamp, R.J. Griffin, R.C. Flagan, and J.H. Seinfeld, Aromatics, reformulated gasoline, and atmospheric aerosol formation, *American Chemical Society Fall Meeting*, New Orleans, LA, September 1997.
- J.R. Odum**, T.P.W. Jungkamp, R.J. Griffin, R.C. Flagan, and J.H. Seinfeld, Aromatics, reformulated gasoline, and atmospheric aerosol formation, *Southern California Symposium on Photochemical and Kinetic Processes in the Atmosphere*, San Diego, CA, March 1997. (poster)

#### **CURRENT FUNDING (IN ORDER OF START DATE)**

- The Houston Endowment, *Houston Aerosol Characterization and Health Experiment*, 06/01/13-05/31/17, \$1,160,000. (PI, \$426,000 CEVE portion of collaborative proposal with University of Houston and other Rice faculty)
- The National Science Foundation, *Source Apportionment of Anthropogenic Secondary Organic Aerosol*, 07/01/14-06/30/17, \$400,000. (co-PI, \$39,156 Rice portion of collaborative proposal with University of Iowa)
- The Shell Center for Sustainability, *An Observational and Modeling Study of Natural Gas Leakage in Urban Houston*, 04/01/15-03/31/17, \$100,000. (PI with other Rice faculty)
- The National Science Foundation, *Collaborative Research: Formation of Organic Nitrogen and Secondary Organic Aerosol Related to Nitrate Radical Oxidation of Volatile Organic Compounds*, 02/01/16-1/31/18, \$486,858. (PI, \$238,544 Rice portion of collaborative proposal with University of Houston)
- The Energy and Environment Institute at Rice University, *Simulation of the Release and Fate of Petrochemical Materials from Aboveground Storage Tanks Following Severe Storms in Houston*, 02/01/17-05/31/18, \$50,000. (PI)

#### **PENDING FUNDING**

- The Texas Commission on Environmental Quality, *Additional Mobile Laboratory Monitoring in San Antonio during the Air Quality Research Program Field Study in 2017*, 02/01/17-12/31/17, \$250,000 (co-PI, \$115,326 Rice portion as subcontract to the University of Houston)
- The National Science Foundation, *Collaborative Research: Interactions of Hydroxyl Radicals with Particulate Matter Constituents*, 07/01/17-06/30/19, \$378,393. (PI, \$174,774 Rice portion of collaborative proposal with University of Houston and

Baylor University)

The Department of Energy, *Secondary Organic Aerosol from Marine and Anthropogenic Sources on the North Slope of Alaska during Summer at Two Sites: Barrow and Oliktok Point*, 07/01/17-06/30/20, \$677,728. (co-PI, \$228,631 Rice portion of collaborative proposal with Baylor University and University of California-Irvine)

#### **FUNDING HISTORY**

The Lord Foundation of North Carolina, *The Nucleation of Functionalized Organic Vapors*, 05/01/01-06/30/02, \$10,000. (PI)

The Coordinating Research Council, *A Study of the Secondary Organic Aerosol Formation Potentials of Important Compounds in the Atmosphere*, 02/15/02-02/14/03, \$120,000. (co-PI; \$35,207 subcontract from Oregon Health and Science University)

The National Science Foundation, *CAREER: The Role of the Chlorine Atom in Secondary Organic Aerosol Formation*, 04/01/02-01/31/09, \$400,000. (PI)

The National Oceanic and Atmospheric Administration, *AIRMAP*, multi-year (2003-2008), multi-million dollar project. (co-PI)

The United States Environmental Protection Agency, *Source-Oriented Chemical Transport Model for Primary and Secondary Organic Aerosol*, 09/01/03-09/30/07, \$450,000. (co-PI; \$135,000 subcontract from University of California Davis)

The National Aeronautics and Space Administration, *Development and Testing of a Mist-Chamber-Based System for Fast Measurement of Organic Aerosols from Airborne Platforms*, 02/01/04-01/31/06, \$237,000. (co-PI)

The United States Environmental Protection Agency, *A Coupled Modeling-Measurement Approach to Improve Biogenic Emissions Estimates: Application to Future Air Quality Assessments*, 02/01/04-01/31/08, \$750,000. (co-PI)

The National Science Foundation, *Computational Simulation of the Atmospheric Chemistry of Alkanes*, 09/01/04-08/31/08, \$268,104. (PI)

The National Science Foundation, *Collaborative Research: Particulate Organic Carbon in the Air and Snow at Summit, Greenland*, 09/15/04-08/31/08, \$600,000. (co-PI; \$262,873 subcontract from Georgia Institute of Technology)

The Electric Power Research Institute, *Continued Development of SOA Model/Aqueous-Phase Processing of Atmospheric Organics*, 11/01/05-12/31/08, \$78,384. (PI)

The American Chemical Society Petroleum Research Fund, *Formation of Secondary Organic Aerosol from the Oxidation of Polycyclic Aromatic Hydrocarbons*, 09/01/06-08/31/09, \$79,955. (PI)

The United States Environmental Protection Agency, *Sensitivity of Heterogeneous Atmospheric Mercury Processes to Climate Change*, 02/15/07-02/14/10, \$750,000. (co-PI; \$55,224 subcontract from University of Wisconsin)

HARC/TERC, *Modeling Secondary Organic Aerosol from Isoprene*, 09/01/08-11/30/09, \$143,616. (PI)

The Shell Center for Sustainability, 01/01/09-12/31/09, *Understanding Atmospheric Mercury Chemistry in Houston, TX*, \$34,000. (PI)

The National Aeronautics and Space Administration, *Laboratory Studies of Nitric Acid Uptake on Organic Aerosols*, 03/01/09-12/31/13, \$518,033. (PI)

HARC/TERC, *Measurement of Water-Soluble Aerosol During SHARP*, 04/01/09-11/30/09, \$23,261. (PI)

MIRTHE Engineering Research Center, *Monitoring Ammonia and Hydrogen Peroxide Mixing Ratios in Houston using MIRTHE Technology*, 05/01/09-04/30/16, \$404,557.



- (PI, MIRTHE administered by Princeton University)
- The National Science Foundation, *Collaborative Research: SOA Formation from Aromatics as a Function of NO<sub>x</sub>*, 09/15/09-08/31/14, \$590,000. (co-PI, \$194,940 Rice portion of collaborative proposal with University of California Riverside)
- California Air Resources Board, *SOA Formation: Chamber Study and Model Development*, 12/01/09-11/30/11, \$474,334. (co-PI, \$25,343 Rice portion of collaborative proposal with University of California Riverside)
- The Dreyfus Foundation, *Postdoctoral Fellowship in Environmental Chemistry*, 09/01/10-08/31/13, \$120,000. (PI)
- The Texas Commission on Environmental Quality, *Surface Measurements and One-Dimensional Modeling Related to Ozone Formation in the Suburban Dallas-Fort Worth Area*, 01/01/11-8/31/11, \$459,100. (PI, \$225,662 Rice portion on collaborative project with University of Houston, University of New Hampshire, and University of Michigan)
- The Shell Center for Sustainability, *Measurement of Atmospheric Particle Number Concentrations in Houston, TX*, 01/01/12-06/30/14, \$35,560. (PI)
- The Texas Commission on Environmental Quality, *Measurements of PM, VOCs, and Photochemically Relevant Gases in Support of DISCOVER-AQ*, 02/01/13-11/30/13, \$206,815. (PI, \$89,912 Rice portion of collaborative proposal with University of Houston).
- The Texas Commission on Environmental Quality, *Analysis of Data from the 2011 Eagle Mountain Lake Field Campaign*, 03/01/13-09/30/13, \$203,708. (PI, \$69,033 Rice portion of collaborative proposal with University of Houston and University of New Hampshire).
- The Texas Commission on Environmental Quality, *Analysis of Surface Particulate Matter and Trace Gas Data Generated During the Houston Operations of DISCOVER-AQ*, 7/01/14-06/30/15, \$219,502. (PI, \$109,867 Rice portion of collaborative proposal with University of Houston)
- The National Science Foundation, *Collaborative Research: Sensitivity of Gas- and Aqueous-phase Production of Secondary Organic Aerosol to Chemical and Environmental Perturbations*, 04/01/13-03/31/16, \$408,882. (co-PI, \$188,882 Rice portion of collaborative proposal with Texas A&M University)
- The Texas Commission on Environmental Quality, *Analysis of Impacts of Nitrogen Oxides, Volatile Organic Compounds, and Meteorological Variables on Ozone and Ozone Production at Two Key Sites in Houston*, 02/23/15-5/31/16, \$136,790. (co-I, \$66,931 Rice portion of collaborative proposal with University of Houston)

## **COURSES TAUGHT**

- Aerosol and Precipitation Chemistry/Atmospheric Particulate Matter  
(undergraduate/graduate)
- Chemical Fate and Transport in the Environment (undergraduate)
- Combustion and Air Pollution Engineering (graduate)
- Energy and the Environment (undergraduate)
- Fluid Mechanics (undergraduate)
- Global Atmospheric Chemistry/Atmospheric Processes (undergraduate/graduate)
- Introduction to Air Pollution Control (undergraduate)
- Introduction to Civil/Environmental Engineering (air pollution section, undergraduate)
- Readings in Atmospheric Science (graduate)

## **ADVISING**

Supervision of one undergraduate honors thesis (Chelsea Corr, currently a visiting assistant professor at Bennington College), nine M.S. dissertations (Christopher Colville, currently employed as environmental consultant in Houston, TX; Xuyi Cai, went on to doctoral program at UNH; Luke Ziemba, went on to doctoral program at UNH; Philip Place, currently in graduate school; Meredith Cleveland, currently employed at USEPA in Washington, D.C.; Ying Liu, currently employed as a chemical engineer in Houston, TX; Jialu Xu, currently employed as an environmental engineer in Houston, TX; Benjamin Schulze, current student; Shiyang Bi, current student), eleven Ph.D. dissertations (Dr. Jianjun Chen, currently a Research Scientist at CARB; Dr. Xuyi Cai, currently on faculty at China University of Geosciences; Dr. Luke Ziemba, currently an Airborne Mission Scientist at NASA; Dr. Kabindra Man Shakya, currently an assistant professor at Villanova University; Dr. Longwen Gong, currently a Research Scientist at CARB; Dr. Ana McPhail, currently a consultant in Oakland, CA; Dr. Yu Jun Leong, currently an environmental consultant at Geosyntech, Inc.; Basak Karakurt Cevik, currently in Turkey; Loredana Suciu, current student; Alexander Bui, current student; Fangzhou Guo, current student), five post-doctoral scholars (Dr. Quentin Malloy, currently a Research Scientist at RTI; Dr. Saewung Kim, currently an assistant professor at UC-Irvine; Dr. Andrew Rutter, currently a senior associate at S.C. Johnson, Inc.; H. William Wallace, current post-doctoral scholar; Dr. Nancy Sanchez, currently a research scientist at Rice), and several undergraduate researchers.

Thesis committee membership for more than 30 M.S./Ph.D. dissertations

## **RICE UNIVERSITY SERVICE**

Department of Civil and Environmental Engineering, Chair (2015 – present); Accreditation (co-chair, 2010 - 2013), Awards (chair, 2008 - 2014), Curriculum (2010 - 2014), and Graduate Committees (2008 – 2012, environmental head 2008 - 2009); Faculty Search Committee (2009 – 2010, 2013 - 2014); Senior Administrator Search Committee (2009 - 2010, 2011 - 2012)

Judge, Rice Global Forum for Engineering and Construction, Engineering Design Competition, spring 2009

Engineering Leadership Alliance, Mentor (2010 - 2014)

Junior Faculty Triad Mentoring Program, Mentor (2011 – 2012, 2013 - 2014)

Participation in ADVANCE/Office of Faculty Development workshops (2010 – 2014)

Rice Center for Engineering Leadership (R-CEL), Internal Advisory Committee (2009 - present), freshmen engineering design team mentor (2011 – 2012, 2013 - 2014)

University Commencement Speaker Committee, Chair (2009 - 2013)

University Undergraduate Admissions Committee (2011 – 2014)

Dean of Undergraduates Search Committee (Spring/Summer 2010)

Hanszen College Master (Fall 2009 through Spring 2014); Chair of Masters Committee (Fall 2011)

Ken Kennedy Institute Internal Review Committee (Spring 2015)

Engineering Dean Review Committee (Spring 2016), Search Committee (2016-2017)

NCAA Faculty Athletic Representative and Rice University Athletics Committee (Fall 2011 – present)

University Corporation for Atmospheric Research, Member Representative (Spring 2012 – present)

## PROFESSIONAL ACTIVITIES

Memberships: Air and Waste Management Association, American Association for Aerosol Research (AAAR), American Chemical Society, American Geophysical Union, American Society of Civil Engineers, and Association of Environmental Engineering and Science Professors (AEESP)

Journal Peer Reviewer: *Aerosol Science and Technology, Atmospheric Chemistry and Physics, Atmospheric Environment, Chemosphere, Environmental Science and Technology, Geophysical Research Letters, Journal of Atmospheric Chemistry, Journal of the Air and Waste Management Association, Journal of Geophysical Research, Nature, Proceedings of the National Academy of Science, Journal of Physical Chemistry, Science, and Tellus*

Proposal Peer Reviewer: American Chemical Society Petroleum Research Fund, Defense Threat Reduction Agency, National Oceanic and Atmospheric Administration, National Research Council (UK), National Science Foundation

Proposal Review Panel: National Oceanic and Atmospheric Administration, Environmental Protection Agency, National Science Foundation

Doctoral Thesis Opponent, University of Göteborg, Sweden, May 2008

Texas Commission on Environmental Quality Air Quality Research Program Independent Technical Advisory Committee (2010 – present)

Houston Advanced Research Corporation Scientific Advisory Committee (2012-2015)

Air Alliance Houston Advisory Council (2016-present)

Clean Air Committee of the Greater Houston Partnership, Member (2008-2009)

Co-chair of platform/poster sessions at the AAAR Annual Meeting 2000, 2002, 2003, 2007, 2014-2016.

Co-organizer of Special Symposia on Semi-volatile Organic Carbon held at the AAAR Annual Meeting, Charlotte, NC, October 2002

Co-organizer of Special Symposia on ICARTT held at the AAAR Annual Meeting, Austin, TX, October 2005

Co-organizer of Special Symposia on Field Campaigns in the Southeastern United States held at the AAAR Annual Meeting, Orlando, FL, October 2014

Member (2001, 2002, 2006, 2007) of AAAR Atmospheric Aerosols Working Group, Vice-chair (2003), Chair (2004)

Member (2008, 2011-2015) of AAAR Aerosol Chemistry Working Group, Vice-Chair (2009), Chair (2010)

Member (2005) of AAAR Education Committee, Co-vice-chair (Tutorial organization, 2006), Co-chair (2007)

Member (2012, 2013) of AAAR By-laws Committee, Chair (2014)

Member (2015, 2016) of AAAR Young Investigators Committee

AAAR Student Poster Competition Judge (2008, 2009, 2012-2015)

AEESP Distinguished Speakers Committee (2012-present)

Member of Scientific Committee, International Conference on Carbonaceous Particles in the Atmosphere, Vienna, Austria, September 2004

Member of Scientific Committee, International Conference on Atmospheric Chemical Mechanisms, Davis, CA, December 2008

Chair of platform session at the Northeast Section Geological Society of America Meeting, Durham, NH, March 2007

Invited Participant, NCAR/UCAR Early Career Scientist Assembly Forum on Future Scientific Directions, 2003  
Outreach to Underrepresented Groups in Science and Engineering: Yearly (2003-2006) Presentations on Air Pollution to Elementary School Students in an Inner-City School in Providence, RI  
Career Day Participant, Katy, TX, Independent School District, Spring 2009; Houston, TX, Independent School District, Spring 2012  
University Corporation for Atmospheric Research, Community Programs Advisory Committee (2014-present)

## **HONORS**

George R. Brown Award for Superior Teaching (Rice University), Spring 2015  
Invited Speaker, Biogenic Hydrocarbon Gordon Research Conference, Spring 2010  
University Corporation for Atmospheric Research, Faculty Fellowship, 2007 (Summer 2008)  
UNH Center for International Education Travel Award, 2007  
National Science Foundation Career Award Recipient, 2002  
Biogenic Hydrocarbon Gordon Research Conference Early Career Scientist Award, 2000  
Atmospheric Chemistry Colloquium for Emerging Senior Scientists, 1999  
American Institute of Chemists Outstanding Senior Student, 1993  
Tau Beta Pi Engineering Honor Society (inducted 1991)