

Personal

William Vizquete, Ph.D. ¹
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Education

Ph.D. Chemical Engineering, University of Texas - Austin,	2005
M.S. Chemical Engineering, University of Texas - Austin,	2003
B.S. Chemical Engineering, University of Missouri - Rolla, <i>Cum Laude</i>	1998

Professional Experience

Associate Professor Department of Environmental Sciences & Engineering University of North Carolina - Chapel Hill	2012–Present
Assistant Professor Department of Environmental Sciences & Engineering University of North Carolina - Chapel Hill	2005–2012
Founder, Chief Scientific Officer, BioDepronix LLC	2011–present
Member, Women’s Health Initiative (WHI) Southeast Regional Center Scientific Interest Group	2011–present
Member, Texas Environmental Research Consortium Air Quality Research Program Independent Technical Advisory Committee	2010–present
Member, Houston Advance Research Center Science Advisory Board	2009-2010
Research Assistant - Ph.D. Candidate University of Texas - Austin Department of Chemical Engineering Research Advisor: David T. Allen Ph.D. Ph.D. Dissertation: <i>Implementation of Process Analysis in a Three-dimensional Air Quality Model</i>	2003–2005

¹Last revision: September 2014

Research Assistant - Masters Candidate University of Texas - Austin Department of Chemical Engineering Research Advisor: David T. Allen Ph.D.	2000–2003
Process Engineer Exxonmobil, Baton Rouge, LA	1998–2000

Memberships in Professional Societies

American Meteorological Society	2007–present
American Geophysical Union	2005–present
Association of Environmental Engineering and Science Professors	2005–present
Air & Waste Management Association	2004–present
Tau Beta Pi Honor Society	2001–2005
American Association for Aerosol Research	2000–2005
American Institute of Chemical Engineers	1997–2006
Chemical Engineer Honor Society - Omega Chi Epsilon	1995–1998
National Society of Hispanic Professional Engineers	1995–1998

Publications

Refereed articles (full listing)

Symbols denote:

#, a doctoral student supervised by Dr. Vizuetete

&, a masters student supervised by Dr. Vizuetete

*, Dr. Vizuetete serving as an equally contributing senior author

39. Vennam L.P.#, Arunachalam S., Vizuetete W., “Evaluation of model-predicted Hazardous Air Pollutants (HAPs) near a mid-sized U.S. airport” *in review Atmospheric Environment*, approx. 25 pp of manuscript (2015)

38. Chang S.#, Arunachalam S., Valencia A., Talgo K., Naess B., Isakov V., Schultz B., Palma T., Vizuetete W., “ A Modeling Framework for Characterizing Near-Road Exposure in urban areas” *in press Science of the Total Environment*, approx. 25 pp of manuscript (2015)

37. Riedel T., Lin Y-H, Budisulistiorini S, Gaston C, Thornton J., Zhang Z., Vizuetete W., Gold A., Surratt J., “Heterogeneous reactions of isoprene-derived epoxides: reaction probabilities and molar secondary organic aerosol yield estimates” *in press Environmental Science & Technology Letters*, approx. 25 pp of manuscript (2015)

36. Couzo E.#, Lefer B., Stutz J., Yarwood G., Karamchandani P., Henderson B., Vizuetete W., “Impacts of heterogeneous HONO formation on radical sources and ozone chemistry in Houston, Texas” *Atmospheric Environment*, Volume 112, pp. 344-355 (2015)

35. Karamchandani P., Emery C., Yarwood G., Lefer B., Stutz J., Couzo E.#, Vizuete W., "Implementation and Refinement of a Surface Model for Heterogeneous HONO Formation in a 3-D Chemical Transport Model" *Atmospheric Environment*, Volume 112, pp. 356-368 (2015)
34. Seltzer K., Pinder R., Vizuete W., Henderson B., "Evaluation of updated nitric acid chemistry on ozone precursors and radiative effects" *Atmos. Chem. Phys.*, 15, 5973-5986 (2015)
33. Chen Y.&, Sexton K., Jerry R., Surratt J., Vizuete W., "Assessment of SAPRC07 with updated Isoprene Chemistry against Outdoor Chamber Experiments" *Atmospheric Environment*, Vol. 105, pp. 109-120 (2015)
32. Vennam, L. #, Arunachalam, S., Baek B.H., Omary M., Binkowski F.S., Olsen S., Mathur R., Vizuete W., Fleming G., "A Multiscale Modeling Study to Assess Impacts of Full-Flight Aircraft Emissions on Upper Troposphere and Surface Air Quality, Air Pollution Modeling and its Application XXIII", D.G. Steyn and R. Mathur (eds.), ISBN: 978-3-319-04378-4 (Print) 978-3-319-04379-1 (Online), Springer, The Netherlands, (2014)
31. Lin Y., Sexton K., Jaspers I., Li Y., Surratt J., Vizuete W., "Application of chemical vapor generation systems to deliver constant gas concentrations for in vitro exposure to volatile organic compounds" *Environmental Science Processes & Impacts*, Vol. 16, pp. 2703-2710 (2014)
30. Zavala J.#, Lichtveld K., Ebersviller S, Carson J.L., Walters G.W., Jaspers I., Jeffries H.E., Sexton K.G., Vizuete W., "The Gillings Sampler A Portable Electrostatic Air Sampler as an Alternative Method for Aerosol In Vitro Exposure Studies" *Chemico-Biological Interactions*, Vol. 220, pp. 158-168 (2014)
29. Haman C.L., Couzo E.#, Flynn J.H., Vizuete W., Heffron B., Lefer B.L., "Boundary Layer Height and Ground-Level Ozone Evolution in Houston, Texas" *Journal of Geophysical Research Atmospheres*, Vol. 119, Issue 10, pp. 6230-6245 (2014)
28. Weir C.H.#, Yeatts K.B., Sarnat J.A., Vizuete W., Salo P.M., Jaramillo R., Cohn R., Chu H., Zeldin D.C., London S.J., "Nitrogen Dioxide and Allergic Sensitization in the 2005-2006 National Health and Nutrition Examination Survey" *Respiratory Medicine*, 107(11) pp. 1763-72 (2013)
27. Parikh H.M.#, Jeffries H.E., Sexton K.G., Luecken D.J., Kamens R.M., Vizuete W., "Evaluation of Aromatic Oxidation Reactions in Seven Chemical Mechanisms with an Outdoor Chamber" *Environmental Chemistry*, Vol. 10, pp. 245-259 (2013)
26. Couzo E.#, Jeffries H.E., Vizuete W., "Houstons rapid ozone increases: Preconditions and geographic origins" *Environmental Chemistry*, Vol. 10, pp. 260-268 (2013)

25. Li Y., Puggioni G., Jat P. Hasan M., Serre M., Sexton K., West J.J., Arunachalam S., Shankar U., Vizuete W*, Farooqui Z., “Burden of Disease from Outdoor Air Pollution” in Gibson J.M., Brammer A., Davidson C., Folley T., Launay F., Thomasen J., eds. “Environmental Burden of Disease Assessment” Springer, New York, pp. 73-108 (2013)

24. Lin Y.-H., Zhang H., Pye H.O.T., Zhanga Z., Martha W.J., Parka S., Arashiroa M., Cuia T., Budisulistiorinia S.H., Sexton K.G., Vizuete W., Xie Y., Luecken D., Piletic I.R., Edney E.O., Bartolotti L.C., Gold A., Surratt J.D., “Epoxide as a precursor to Secondary Organic Aerosol Formation from the Photooxidation of Isoprene in the Presence of Nitrogen Oxides” *Proceedings of the National Academy of Sciences*, Vol. 110, pp. 6718-6723 (2013)

23. Kolling J.&, Pleim J.E., Jeffries H.E., Vizuete W., “A Multisensor Evaluation of the Asymmetric Convective Model, Version 2 in Southeast Texas” *Journal of the Air and Waste Management Association*, Vol. 63, Issue 1, pp. 41-53 (2012)

22. Lichtveld K., Ebersviller S.M., Sexton K.G., Vizuete W.*, Jaspers I., Jeffries H.E., “In Vitro Exposures in Diesel Exhaust Atmospheres: Resuspension of PM from Filters Verses Direct Deposition of PM from Air” *Environmental Science & Technology*, Vol. 46, Issue 16, pp. 9062-9070 (2012)

21. Parikh H. M.#, Carlton A.G., Zhou Y., Zhang H., Kamens R.M., Vizuete W., “Modeling Secondary Organic Aerosol from Aromatic Mixtures Using a Dynamic Partitioning Approach Incorporating Particle Aqueous-phase Chemistry (II)” *Atmospheric Environment*, vol. 56, pp. 250-260 (2012)

20. Couzo E.#, Olatosi A.&, Jeffries H. E., Vizuete W., “Assessment of a Regulatory Model Performance Relative to Large Spatial Inhomogeneity in Observed Ozone in Houston, TX” *Journal of the Air and Waste Management Association*, vol. 62, pp. 696-706 (2012)

19. Henderson B.H.#, Pinder R.W., Crooks J., Cohen R.C., Carlton A.G., Pye H.O.T., Vizuete W., “Combining Bayesian Methods and Aircraft Observations to Constrain the HO+NO₂ Reaction Rate” *Atmos. Chem. Phys.*, vol. 11, 1, pp. 275-291 (2012)

18. Henderson B. H.#, Kimura Y., McDonald-Buller E., Allen D. T., Vizuete W., “Comparison of Lagrangian Process Analysis Tools for Eulerian Air Quality Models” *Atmospheric Environment*, vol. 45, 29, pp. 5200-5211 (2011)

17. Parikh H. M.#, Carlton A.G., Vizuete W., Chen E.H., Kamens R.M., “Modeling Secondary Organic Aerosol Using a Dynamic Partitioning Approach and Particle Aqueous-phase Processes” *Atmospheric Environment*, vol. 45, 5, pp. 1126-1137 (2011)

16. Vizquete W., Jeffries H., Tesche TW, Couzo E.&, “Issues with Ozone Attainment Methodology for Houston, TX” *Journal of the Air and Waste Management Association*, vol. 61, 3, pp. 238-253 (2011)
15. Henderson B.H.#, Pinder R. W., Crooks J., Cohen R.C., Wennberg P.O., Hutzell W.T., Sarwar G., Goliff W.S., Stockwell W.R., Fahr A., Mathur R., Carlton A.G., Vizquete W., “Evaluation Of Simulated Photochemical Partitioning Of Oxidized Nitrogen in the Upper Troposphere” *Atmos. Chem. Phys*, vol. 11, 1, pp. 275-291 (2011)
14. Li Y., Gibson J.M., Jat P., Puggioni G., Hasan M., West J.J., Vizquete W*., Sexton K., Serre M., “Burden of Disease Attributed to Anthropogenic Air Pollution in the United Arab Emirates: Estimates Based on Observed Air Quality Data” *Science of the Total Environment*, 408, pp. 5748-5793 (2010)
13. Henderson B.H.&, Vizquete W., Jeffries H., Kim B., “The Influence of Model Resolution on Industrial Releases And Ozone Formation” *Journal of the Air and Waste Management Association*, Vol. 60, 9, pp 1105-1117 (2010)
12. Vizquete W., Biton L.&, Jeffries H., Couzo E.&, “Evaluation of Relative Reduction Factor Methodology for Demonstrating Attainment of 8-Hr Ozone In Houston, TX” *Journal of the Air and Waste Management Association*, vol. 60, 7, pp. 838-848 (2010)
11. Olaguer E. P., Rappenglueck B., Lefer B., Stutz J., Dibb J., Griffin R., Brune B., Shauck M., Buhrg M., Jeffries H., Vizquete W.*, Pinto J., “Deciphering the Role of Radical Sources During the Second Texas Air Quality Study” *Journal of the Air and Waste Management Association*, Vol. 59, 11, pp. 1,258-1,277 (2009)
10. Vizquete W., Kim B., Jeffries H. E., Kimura Y., Allen D. T., Kioumourtzoglou M.&, Biton L.&, Henderson, B.H.&, “Modeling Ozone Formation from Industrial Emission Events in Houston, Texas” *Atmospheric Environment*, 42, pp. 7641-7650, (2008)
9. Kimura Y., McDonald-Buller E., Vizquete W.*, Jeffries H. E., Allen D. T., “Application of a Lagrangian Process Analysis Tool to Characterize Ozone Formation in Southeast Texas” *Atmospheric Environment*, 42, pp. 5743-5759, (2008)
8. Nam J., Webster M., Kimura Y., Jeffries H., Vizquete W.*, Allen D. T., “Reductions in Ozone Concentrations Due to Controls On Variability in Industrial Flare Emissions in Houston, Texas” *Atmospheric Environment*, 42, 4198 - 4211 (2008)
7. Song J., Vizquete W.*, Chang S., Allen D. T., Kimura Y., Yarwood G., Kioumourtzoglou M., McDonald-Buller E., “Comparisons of Modeled and Observed Isoprene Concentrations in Southeast Texas.” *Atmospheric Environment*, 42, pp. 1922-1944, (2008)

6. Webster M., Nam J., Kimura Y., Jeffries H., Vizuete W.*, Symons M., Allen D., "The Effect of Variability in Industrial Emissions on Ozone Formation in Houston, Texas" *Atmospheric Environment*, 41, pp. 9580-9593, (2007)
5. Nam J., Kimura Y., Vizuete W.*, Murphy C., Allen D.T., "Modeling the Impacts of Emission Events on Ozone Formation in Houston, Texas," *Atmospheric Environment*, 40, pp. 5329 - 5341 (2006)
4. Junquera V., Russell M., Vizuete W.*, Kimura Y., Allen D. T., "Wildfires in Eastern Texas in August and September 2000: Emissions, Aircraft Measurements and Impact on Photochemistry" *Atmospheric Environment* 39 (27) pp. 4983-4996 (2005)
3. Vizuete W.*, Junquera V., Allen D. T., "Sesquiterpene Emissions and Secondary Organic Aerosol Formation Potentials for Southeast Texas," *Aerosol Science & Technology*, 38 (S1), pp. 167-181 (2004)
2. Vizuete W.*, Junquera V., McDonald-Buller E., McGaughey G., Yarwood G., Allen D. T., "Effects of Temperature and Land Use on Predictions of Biogenic Emissions in Eastern Texas, USA", *Atmospheric Environment* 36 (20) pp. 3321-3337 (2002)
1. Barnett, W.M., Baughman R.G., Collier H.L., Vizuete W.*, "Synthesis and Crystal Structure of 1,1-di(ethylpropionato)-2,2-biimidazole, a macromolecular precursor", *Journal of Chemical Crystallography* 29 (7), pp. 765 - 768 (1999)

Refereed oral presentations (since 2005)

"Evaluation of aromatic chemical mechanisms" Parikh, H.M, Carlton, A.G, Zhang, H, Zhou, Y, Chen, E.H, Kamens, R.M ,Vizuete, W* presented at the International Aerosol Modeling Algorithms Conference, Davis, CA, (December 2015).

"Heterogeneous HONO sources and ozone chemistry in Houston, Texas" W. Vizuete*, E. Couzo, P. Karamchandani, G. Yarwood, J. Stutz, and B. Lefer presented at the Annual Community Modeling and Analysis System (CMAS) Conference, (October 2014).

"Assessment of a regulatory model performance relative to large spatial inhomogeneity in observed ozone in Houston, TX" Couzo, E., Jeffries, H.E., Vizuete W.*, presented at the American Geophysical Union Fall Meeting. (December 2011).

"New Algorithms to Describe Secondary Organic Aerosol Formation" Parikh, H.M, Carlton, A.G, Zhang, H, Zhou, Y, Chen, E.H, Kamens, R.M ,Vizuete, W* presented at the 3rd International Aerosol Modeling Algorithms Conference, Davis, CA, (December 2011).

"The Implications of Uncertain NO₂ + OH for Ozone and Precursors" Henderson, B.H., Pinder R.W., Akhtar F., Pye, H., Vizuete W.* presented at the Annual Community Modeling and Analysis

System (CMAS) Conference, (October 2011).

“An Assessment of Aviation-related Hazardous Air Pollutants from a U.S. airport using CMAQ” Vennam, L.P., Vizuete W.*, Arunachalam S. presented at the Annual Community Modeling and Analysis System (CMAS) Conference, (October 2011).

“NO_x Chemical Sinks in the Upper Troposphere.” Henderson, B.H.; Pinder, R.; Crooks, J.; Cohen, R.; Goliff, W.; Stockwell, W.R.; Fahr, A.; Sarwar, G.; Hutzell, B.; Mathur, R.; Carlton, A.; Vizuete, W.* presented at the American Geophysical Union Fall Meeting. (December 2010).

“Inter-mechanism Upper Tropospheric NO_x Evaluation: Findings and Implications” Henderson, B.H., Pinder, R., Crooks, J., Cohen, R., Goliff, W., Stockwell, W.R., Fahr, A., Sarwar, G., Hutzell, B., Mathur, R., Carlton, A., Vizuete, W.*, presented at Atmospheric Chemical Mechanisms Conference (December 2010).

“An Intercomparison of Chemical Mechanisms for Aromatic VOCs using Data From UNC Outdoor Chambers” Parikh, H.M, Jeffries, H.E, Sexton, K.G, Kamens, R.M, Vizuete, W.* presented at the International Conference on Atmospheric Chemical Mechanisms, Davis, CA, (December 2010).

“Importance of Aqueous-phase Secondary Organic Aerosol Formation from Aromatics in an Atmospheric Hydrocarbon Mixture” Parikh, H.M, Carlton, A.G, Vizuete, W*, Zhang, H, Zhou, Y, Chen, E.H, Kamens, R.M. presented at the 2010 American Geophysical Union Fall Meeting, San Francisco, CA, (December 2010).

“An Improved Mechanism to Predict Secondary Organic Aerosols from Toluene” Parikh, H.M, Carlton, A.G, Vizuete, W*, Chen, E.H, Kamens, R.M. presented at the American Association for Aerosol Research 29th Annual Conference, Portland, OR, (October 2010).

“Evaluation of the simulated planetary boundary layer in eastern Texas,” Kolling, J. S., J. E. Pleim, H. Jeffries, Vizuete W.*, presented at the 9th Annual Community Modeling and Analysis System (CMAS) Conference, (October 2010).

“Windblown Dust and Air Quality of the United Arab Emirates Based on Observations from Multiple Satellites and WRF Model Simulations” Kunhikrishnan T., Davis N., Xiu A., Adelman Z., Vizuete W.*, West J., presented at the International Symposium on Computational Wind Engineering (May 2010).

“Comparison of the ACM2 vertical mixing scheme with observations taken during the TexAQS II field study,” Kolling, J. S. and J. E. Pleim, H. Jeffries, and W. Vizuete, presented at the 90th Annual Meeting of the American Meteorological Society, (January 2010).

“An Assessment of the Efficacy of VOC Cap and Trade in Houston” Couzo, E., Jeffries H., Vizuete W*., presented at the American Geophysical Union Fall Meeting, (December 2009).

“The Role of Chemistry in Upper Troposphere NO₂ Under-predictions” Henderson, B., Pinder, R., Goliff, W., Stockwell, W., Fahr, A., Sarwar, G., Hutzell, B., Mathur, R., Vizuete, W.*, Cohen, R., presented at the 8th Annual CMAS Conference. (October 2009).

“Assessment of Dust Storms within UAE using Observational Data and CMAQ-WRF Modeling Framework” Farooqui Z., Parikh H., Vizueté W.*, Henderson B., Davis N., Shankar U., Arunachalam S., Jeffries H., West J., presented at the 8th Annual CMAS Conference. (October 2009).

“Visualization of 3-dimensional Model Mixing Volume Heights for CMAQ and CAMx” Parikh, H., Henderson, B., Vizueté, W.*, Jeffries, H., presentation at the 7th Annual CMAS Conference (October 2008).

“The Influence of Model Resolution on Ozone Chemistry in Industrial VOC Releases” Vizueté W.*, Henderson B., Tesche T., presented at the American Meteorological Society 10th Conference on Atmospheric Chemistry, (January 2008).

“Emission Event Investigation With a Detailed Plume Tracking Process Analysis Tool” Vizueté, W.*, Henderson, B., Jeffries, H., Kim, B.U., Air & Waste Management Associations 100th Annual Conference & Exhibition, Pittsburgh, PA (June 2007).

“A Detailed Process Based Evaluation of Photochemical Air Quality Model Simulations of Houston, TX” Vizueté W*., Jeffries H., Kioumourtoglou M., presented at American Geophysical Union Fall Meeting (December 2006).

“Process Analysis for Photochemical Reaction Mechanisms” Vizueté W.*, Jeffries H., presented at International Conference on Atmospheric Chemical Mechanisms (December 2006).

“A Holistic Evaluation of the Houston, Texas Ozone Attainment Episode” Biton, L., Vizueté, W.*, Kim, B.U., and Jeffries, H.E., American Geophysical Union Fall Meeting San Francisco, CA (December 2006).

“Emission Event Investigation: Quantifying Impacts with a Detailed Plume Tracking Process Analysis Tool” Henderson, B., Kioumourtoglou, M.A., Kim, B.U., Vizueté, W.*, American Geophysical Union Fall Meeting, San Francisco, CA (December 2006).

“Feature Tracking Process Analysis” Henderson, B.H., Vizueté, W.*, Jeffries, H.E., presented at Annual CMAS Models-3 Users’ Conference. (October 2006).

“Development, implementation, and application of an improved model performance evaluation and diagnostics approach” Kim, B.U., Vizueté, W.*, Jeffries, H.E., 5th Annual CMAS Conference, Chapel Hill, NC (October 2006).

“Process Analysis Application: The 2000 Houston Ozone Attainment Simulations” Kioumourtoglou M., Vizueté W.*, Jeffries H., Henderson B., presented at Annual CMAS Models-3 Users’ Conference (October 2006).

“Feature Tracking Process Analysis” Henderson B., Vizueté W.*, Jeffries H., presented at Annual CMAS Models-3 Users’ Conference (October 2006).

“Development, Implementation, and Application of an Improved Model Performance Evaluation and Diagnostics Approach” Kim B., Vizueté W., Jeffries H., presented at CMAS Annual Conference (October 2006).

“Comparison of CAMx and CMAQ Simulations of Houston, TX” Vizuite W.*, Kim B., Biton L., presented at Air & Waste Management Association’s Annual Conference (June 2006).

“Application of Process Analysis for Evaluating Biogenic Emission Inventories” Vizuite W.*, McDonald- Buller E., Song J., Chang S., Kimura Y., Allen D., presented at Air & Waste Management Association’s Annual Conference, Minneapolis, MN (June 2005).

“The Development of a Stochastic Emissions Inventory for Industrial Emissions in Houston/Galveston Texas and Its Use in Photochemical Modeling” Vizuite W.*, Allen D., Murphy C., Kimura Y., Jeffries H., Kim B., Webster M., Symens M., presented at the Air & Waste Management Association Annual Meeting, Minneapolis, MN (June 2005).

“Wildfires in Eastern Texas in August and September 2000: Emissions, Aircraft Measurements and Impact on Chemical and Physical Processes” Vizuite W.*, McDonald-Buller E., Song J., Chang S., Kimura Y., Allen D., presented at the 2005 American Association for Aerosol Research Particulate Matter Supersites Program & Related Studies conference, Atlanta, GA (February 2005).

Invited Research and Educational Presentations (since 2005)

“Insights into Atmospheric Chemistry” Invited Speaker The National GEM Consortiums 2015 Annual Meeting for Minority STEM researchers (August 2015)

“In vitro biosensors” Invited Speaker University of Munster (October 2014)

“Effects of anthropogenic air pollution on health in the U.A.E.” Invited speaker Qatar University Life Science Symposium, Doha, Qatar (December 2013)

“Houston: A tale of two ozones” Invited speaker at Barcelona University, Barcelona Spain (December 2013)

“Patentable instrument for analyzing airborne substances and their toxicity.” Invited seminar at Research Triangle Park (March 2013)

“A tale of two Ozones: Houston Texas” Invited seminar at University of Houston (November 2012)

“Lunch with a Scientist” presented at the ScienceWriters conference (October 2012)

“Outdoor Air Quality: Improving Understanding Informing Decisions” presented at the Abu Dhabi Environment Agency, United Arab Emirates (September 2011)

“Issues with Ozone Attainment Methodology for Houston, TX” presented at North Carolina State Marine, Earth, & Atmospheric Sciences Seminar (August 2011).

“Air Pollution: A global killer” Presented at Universidad Nacional de Asuncion, Paraguay (April 2011).

“Air Pollution: A global killer” Presented at Universidad Catolica Asuncion, Paraguay (April 2011).

“UAE Environmental Health Project Final Results” presented at at the Abu Dhabi Environment Agency, United Arab Emirates (October 2010)

“Air quality modeling” presented at the Clean Air Institute Workshop on Critical review of methodologies to assess greenhouse gas and local pollutant emission impacts of transport interventions, (September 2010).

“Modeling and Monitoring Outdoor Air Quality” at the Abu Dhabi Environment Agency, United Arab Emirates (May 2010)

“EPA Ozone Attainment Demonstration and Houston, TX” presented at the Southeast Texas Photochemical Modeling Technical Committee meeting (April 2010).

“Assessment of the Attainment Guidance for 8-hr Ozone in Houston, TX” presented at Center for Environmental and Energy Research at University of Texas-Austin (October 2009).

“Influence of Highly Variable Spatial and Temporal VOC Emissions in Houston Texas on 1-h and 8-h Ozone SIP Modeling” presented at EPA Earth Day Seminar (April 2009).

“A Detailed Process Based Evaluation of Photochemical Air Quality Model Simulations of Houston, TX” presented at NCAR ACD division seminar (June 2007).

“Investigation of Limited Radical Source Strength in the Houston Regulatory Ozone Model” presented at TERC Science advisor committee (November 2006).

“Analysis of Houston’s 2000 CAMx SIP Model: Radical sensitivity” presented at Rapid Science Synthesis Group workshop (October 2006).

“A Process Based Method for Understanding Model Predictions” presented at U.S. EPA Seminar, RTP, NC (May 2006).

“Houston Galveston Beaumont SIP-Relevant Research” presented at TERC Science advisory committee, Houston, TX (April 2006).

“Simulating our Atmosphere: Challenges and Opportunities” presented at UNC-Chapel Hill Seminar, Chapel Hill, NC (February 2006).

“Houston Galveston Beaumont Problem Statement” presented at TERC Science advisory committee, Houston, TX (November 2005).

“How Should We Design the TexAQS II-2006 Intensive” presented at TERC Science advisory committee, Houston, TX (November 2005).

Other unrefereed works

Macdonald-Gibson, J. (editor), “National Strategy and Action Plan for Environmental Health United Arab Emirates” Environment Agency Abu Dhabi, United Arab Emirates, 2010.

Macdonald-Gibson, J. (editor), “The State of Environmental Health in the United Arab Emirates 2010” Environment Agency Abu Dhabi, United Arab Emirates, 2010.

Vizuete, W.*, Jeffries, H., Valencia, A., Couzo, E., Christoph, E., Wilkinson, J., Henderson, B., Parikh, H., Kolling, J., “HARC Project H97 Final Report ” Houston Advanced Research Center, 2009.

Olaguer, E.J., Byun, D. W., Lefer, B., Rappenglueck, B., Nielsen-Gammon, J., Jeffries, H., Vizuete, W.*, Gillani, N., “The 2009 TERC Science Synthesis.” Texas Environmental Research Consortium, 2009.

Vizuete, W.*, Jeffries, H., Christoph, E., Henderson, B., Parikh, H., Valencia, A., “Multi-resolution simulation and analysis of TexAQS II Air Pollution Events Project H87” Houston Advanced Research Center, 2008.

Cowling, E., Furiness, C., Dimitriades, B., Parrish, D., Editors, “Final Rapid Science Synthesis Report: Findings from the Second Texas Air Quality Study (TexAQS II)” TCEQ Contract Number 582-4-65614, 2007.

Vizuete, W.*, Jeffries, H., Biton, L., Henderson, B., Kioumourtzoglou, M., “Regional Transport Modeling for East Texas Project H60” Houston Advanced Research Center, 2006.

Teaching Activities

Summary of Courses Taught (since 2005)

Spring 2015

Modeling Atmospheric Chemistry Course Director (ENVR 890 section 4) 5 Students

Fall 2014

Elements of Chemical Reaction Engineering Course Director (ENVR 451) 15 Students

Fall 2013

Elements of Chemical Reaction Engineering Course Director (ENVR 451) 5 Students

Spring 2013

Modeling Atmospheric Chemistry Course Director (ENVR 890 section 4) 5 Students

Fall 2012

Elements of Chemical Reaction Engineering Course Director (ENVR 451) 5 Students

Fall 2011

Elements of Chemical Reaction Engineering Course Director (ENVR 451) 13 Students

Spring 2011

Modeling Atmospheric Chemistry Course Director (ENVR 890 section 4) 9 Students

Unifying Concepts Module Course Director (ENVR 401)	22 Students
Fall 2010	
Elements of Chemical Reaction Engineering Course Director (ENVR 451)	5 Students
Spring 2010	
Unifying Concepts Module Course Director (ENVR 401)	15 Students
Fall 2009	
Process Dynamics in Environmental Systems Course Director (ENVR 451)	15 Students
Spring 2009	
Modeling Atmospheric Chemistry Course Director (ENVR 890 section 4)	5 Students
Ozone Attainment Course Director (ENVR 890)	1 Student
Fall 2008	
Process Dynamics in Environmental Systems Course Director (ENVR 451)	14 Students
Spring 2008	
Unifying Concepts Module Course Director (ENVR 401)	10 Students
Fall 2007	
Process Dynamics in Environmental Systems Course Director (ENVR 451)	9 Students
Spring 2007	
Modeling Atmospheric Chemistry Course Director (ENVR 890 section 4)	5 Students
Unifying Concepts Module Course Director (ENVR 401)	10 Students
Ozone formation Course Director (ENVR 890)	2 Students
Fall 2006	
Process Dynamics in Environmental Systems Course Director (ENVR 451)	14 Students
Spring 2006	
Unifying Concepts Module Course Director (ENVR 401)	5 Students
Fall 2005	
Unifying Concepts Module Course Director (ENVR 401)	26 Students

Advising

Undergraduate

Madi Delaney Pfaff 2015-2016

Bonny Blackard 2005-2007

Masters

Kevin Chu (M.S.) since 2014 (Committee Member)

Tom Roche (M.S.) since 2010 (Advisor)

Yuzhi Chen (M.S.E.E.) 2012-2014 (Advisor)
 “Assessment of SAPRC07 with updated isoprene oxidation chemistry against outdoor chamber experiments”
 Winner of UNC-CH 2014 George C. Bunker Award

James McCann (M.S.E.E.) 2011-2013 (Advisor)
 “Model Sensitivity of Ozone to Electricity Generation Emissions in the Northeastern US”
 Winner of UNC-CH 2014 George C. Bunker Award

Elizabeth Blayney (M.S.) 2010-2012 (Committee Member)
 “Premature Mortalities Attributable to Ozone and Fine Particulate Exposure: The Effect of Grid Size on Health Burden Estimates in the United States”

Christopher Werner (M.S.E.E.) 2010-2012 (Committee Member)
 “U.S. Air Quality Impacts of Nationwide Extension of the In-Use Off-road Diesel Vehicle Regulations Adopted by the California Environmental Protection Agency Air Resources Board (CARB)”

Evan Couzo (M.S.) 2009-2011 (Advisor)
 “High Ozone Events And Attainment Demonstrations In Houston, TX”
 Winner of UNC-CH 2012 Environmental Sciences Achievement Award
 Winner of American Geophysical Union 2011 Outstanding Student Paper Award

Jenna Kolling (M.S.) 2009-2011 (Advisor)
 “A Multisensor Evaluation of the Asymmetric Convective Model (version 2) in Eastern Texas”

Adey Olatosi (M.S.) 2009-2011 (Advisor)
 “Assessment of air quality model predictions of ozone concentrations characterized by large hourly changes in Houston, Texas.”

Yadong Xu (M.S.E.E.) 2009-2011 (Advisor)
 “Use of Process Analysis to Assess Predicted Ozone Formation in the United Arab Emirates”

Jeanette M. Reyes (M.S.) 2009-2011 (Committee Member)
 “Global Land Use Regression And Bayesian Maximum Entropy Spatiotemporal Estimation Of Pm2.5 Yearly Average Concentrations Across The United States”

Jyoti Bapat (M.S.) 2009-2011 (Committee Member)
 “The Generation Of An Experimental Database For Testing Predictive Models For α -Pinene Gas And Particle Phase Reactions In The Atmosphere”

Matt Woody (M.S.) 2008-2010 (Committee Member)
 “An Investigation of the Impacts of Aviation Emissions on Current and Future Fine Particulate Matter in the U.S.”

Weruka Rattanavaraha (M.S.) 2008-2010 (Committee Member)

“The Reactive Oxidant Potential Of Different Types Of Aged Atmospheric Particles: An Outdoor Chamber Study”

Julia Rager (M.S.) 2008-2010 (Committee Member)
“A Systems Biology Approach to Investigate Human Lung Cell Response to Air Pollutants”

Nicholas DeFelice (M.S.E.E.) 2009-2010 (Committee Member)
“How Water Subsidies Affect Air Quality In Abu Dhabi, United Arab Emirates”

Alejandro Valencia (M.S.E.E.) 2007-2009 (Advisor)
“Assessment of the Relative Reduction Factor for an Ozone Attainment Demonstration in Houston, TX”

Elizabeth Christoph (M.S.) 2007-2009 (Advisor)
“The Relationship between Rotational Wind Patterns and Ozone Exceedances in Houston, Texas”

Lars Perlmutter (M.S.) 2007-2009 (Committee Member)
“Spectrophotometric Determination Of Carbonyls In Air And Biological Samples; A Faster, Cheaper Method To Quantify Total Carbonyls In A Sample”

Barron Henderson (M.S.) 2006-2008 (Advisor)
“Air quality model resolution impacts odd oxygen and policy”
Winner of 2009 UNC-CH George C. Bunker Award

Leiran Biton (M.S.) 2005-2007 (Advisor)
“Issues in the analysis of air quality modeling data in attainment demonstration of the 8-hr ozone standard”

Marianthi-Anna Kioumourtzoglou (M.S.P.H.) 2005-2007 (Advisor)
“Tropospheric Ozone: Health Effects, Control Strategies, Process Analysis and Source Apportionment”

Deb Medlin (M.S.) 2005-2006 (Committee Member)
“Air Quality Policy Implications of the Highly Reactive Volatile Organic Compound Cap and Trade Program in the Houston Metropolitan Area”

Doctoral (Ph.D.)

Tim Weigand since 2014 (Committee Member)

Annie Jarabek since 2014 (Advisor)

Chitsan Wang since 2013 (Advisor)

Yuqiang Zhang since 2011 (Committee Member)

Jeanette Reyes since 2011 (Committee Member)

Shih Ying Chang since 2011 (Advisor)

Winner 2014 UNC Gillings School of Global Public Health's Koch Travel Award
3rd Place Winner Student Poster Competition 2015 Air & Waste Management Association Annual Conference

Yadong Xu since 2011 (Advisor)

Amanda Dye since 2011 (Committee Member)

Pradeepa Vennam since 2011 (Advisor)
Winner 2013 1st Place prize in the 9th annual Joseph A. Hartman Student Paper Competition from the PARTNER Center of Excellence
Winner 2014 UNC Gillings School of Global Public Health's Koch Travel Award

Zac Adelman since 2010 (Committee Member)

Uma Shankar since 2007 (Advisor)

Ben Allshouse since 2004 (Committee Member)

Ted Mansfield 2012-2015 (Committee Member)

Evan Couzo 2011-2014 (Advisor)

Charles Weir 2006-2013 (Advisor)

Meredith Fry 2009-2012 (Committee Member)

Kim Lichtveld 2010-2012 (Committee Member)

Alex Carll 2008-2012 (Committee Member)
"The Influence of Autonomic Imbalance on Diesel Exhaust-Induced Cardiac Dysfunction in Heart Failure-Prone Rats"

Haofei Zhang 2008-2012 (Committee Member)
"Characterization And Simulation Of Isoprene Photooxidation From Smog Chamber Studies"

Seth M. Ebersviller 2010-2012 (Committee Member)
"A Demonstration of Particle Uptake of Hazardous Air Pollutants in Urban Air Mixtures, and Its Effect on Toxicity to Cultured Human Epithelial Lung Cells"

Harshal Parikh 2007-2011 (Advisor)
"Evaluation of Parameterized SOA Formation Mechanisms for Aromatic Oxidation: Implications of Missing Processes, Gas/Particle Mass-Transfer Behavior and Reaction Pathways"
Winner of American Geophysical Union 2011 Outstanding Student Paper Award

Barron Henderson 2008-2011 (Advisor)
"Biased Ozone Precursors in the Upper Troposphere: Evaluation, Recommendations, and Implications"

2nd Place Winner of 2012 Air and Waste Management Association Doctoral Dissertation Award

Susan Casper 2007-2011 (Committee Member)
“Using Atmospheric Models to Estimate Global Air Pollution Mortality”

Yasu Akita 2007-2010 (Committee Member)
“Spatial Statistics And Regression Analysis Of Environmental Exposure And Disease: From Air Pollution And Microbial Groundwater Contamination Assessment To Diarrhea Disease Mapping”

Christopher Wedding 2005-2008 (Committee Member)
“Understanding Sustainability in Real Estate: A Focus on Measuring and Communicating Success in Green Building”

Post Doctoral

Zuber Farooqi 2009-2011
Kunhikrishnan Thengumthara 2009-2010

Professional service

Department of Environmental Sciences and Engineering

Member Admissions Committee 2013-2015
Chair Master of Science Environmental Engineering Group 2012-2014
Chair Learning and Libations Committee 2010-2011
Member One Year Masters Exploratory Committee 2010
Member Awards Committee since 2009
Member Atmospheric Chemist Faculty Search Committee 2009
Chair Departmental Flyer Design Committee 2007
Faculty advisor ENVRSO since 2005
Member Environmental Engineering Program Committee 2005

University of North Carolina at Chapel Hill

Mentor Finish Line Project to support underrepresented undergraduate men at UNC-CH 2015
Member Search Committee Executive Director of Scholars’ Latino Initiative 2015
Speaker NASA Teacher Workshop of Air Quality Concerns in a Changing Climate: Engaging Students with Emerging Atmospheric Science Research 2014
Volunteer UNC Project Uplift for high school seniors 2014-2015 Mentor UNC Carolina Millennial Scholars Program 2012
Member Advisory Board Scholars’ Latino Initiative 2012
Member SPH2020 Admission Practices Committee 2012
Member SPH2020 Teaching and Learning Task Force 2011
Member SPH Student Travel Fund Review Committee since 2009
Member National Children’s Study North Carolina Scientific Domain Working Team 2008
Member SPH Design Center Director Search Committee 2007

Within the Profession

Invited member Qatar National Research Fund Review Panel 2015
Invited member National Center Atmospheric Research ACCORD worksop 2015

Invited member U.S. National Academy of Sciences Committee to Review NSF's AGS Draft Science Goals and Objectives	2014
Invited Ph.D. Thesis Evaluator Department of Environmental Sciences Fatima Jinnah Women University, Rawalpindi, Pakistan	2013
Member Awards Committee of Air & Waste Management Association	2012
Invited Editorial Board of Dataset Papers in Atmospheric Sciences	2012
Session Chair CMAS Conference	2011
Invited representative for U.S. State Department to Paraguay	2011
Member NSF Graduate Fellowship Review Panel	2011
Member Qatar National Research Fund Review Panel	2011
Session Chair CMAS Conference	2010
Member Clean Air Institute Air Quality Workshop for Bogota, Columbia	2010
Chair United Arab Emirates Field Campaign Workshop	2010
Member EPA Human Exposure and Atmospheric Sciences Atmospheric Modeling and Analysis Division Chemistry Workgroup	2010
Member NSF Graduate Fellowship Review Panel	2010
Member EPA Review Panel Graduate Research Opportunities (GRO) Fellowships	2009
Member NSF Cyber-Enabled Discovery and Innovation Review Panel	2009
Reviewer of EPA Integrated Science Assessment for CO	2008
Member AGU Fall Meeting Planning Committee	2008
Member EPA Ozone NAAQS workshop	2008
Member EPA Review Panel Graduate Research Opportunities (GRO) Fellowships	2008
Member EPA Review Panel Graduate Research Opportunities (GRO) Fellowships	2007
Member EPA CMAQ Peer Review Panel	2006
Member EPA Modeling Guidance Workshop	2006

Invited Professional Journal and Book Reviews

Advances in Meteorology
 Atmospheric Environment
 Atmospheric Chemistry and Physics
 Engineering in Life Sciences
 Environmental Science & Technology
 Geophysical Research Letter
 Industrial & Engineering Chemistry Research
 John Wiley & Sons Publisher Book review
 Journal of the Air & Waste Management Association
 Journal of Geophysical Research
 Science of the Total Environment