

# CURRICULUM VITAE

**BARRY L. LEFER**

**UNIVERSITY OF HOUSTON**  
**DEPARTMENT OF GEOSCIENCES, MS: 312 SR-1**  
**4800 CALHOUN ROAD, HOUSTON, TX 77204-5007**  
**email: blefer@uh.edu • tel: 713-743-3250 • fax: 713-748-7906**

---

## EDUCATION

- 1992-1997 University of New Hampshire, Durham, New Hampshire  
Ph.D., Earth Sciences - Geochemical Systems  
Dissertation: "The chemistry and dry deposition of atmospheric Nitrogen at a rural site in the northeastern United States"  
*Committee: Robert W. Talbot (advisor), Jack E. Dibb, J. William Munger, John D. Aber, and William H. McDowell*
- 1989-1992 University of New Hampshire, Durham, New Hampshire  
M.S. Earth Sciences- Geochemical Systems  
Thesis: "Enhancement of Phosphorus and carboxylic acids in biomass burning plumes over Canada during ABLE-3B"  
*Committee: Robert W. Talbot (advisor), Robert C. Harriss, and John D. Aber*
- 1985-1989 University of Virginia, Charlottesville, Virginia  
B.A. Environmental Sciences  
*Advisors: James N. Galloway and William C. Keene*

## PROFESSIONAL EXPERIENCE

- 2005 – Present Assistant Professor, Department of Geosciences, University of Houston
- Megacity Impacts on the Regional and Global Environment – Mexico (MIRAGE-Mex): NSF Atmospheric Science Funding (\$275,000) to investigate impacts of aerosols and clouds on the ozone photochemistry in Mexico City. A two-year project with a 5-week field campaign (26 March to April 02, 2006).
  - Antarctic Tropospheric Chemical Investigation (ANTCI) NSF Office of Polar Programs Funding (\$100,000) for a Twin Otter aircraft study to measure photolysis frequencies and investigate the impact of snowpack photochemistry on the boundary layer and free troposphere of the Antarctic Continent. See <http://antci.blogspot.com> for more information).
  - Assessment of the Impact of Biomass Burning in Mexico and Central America on Texas Air Quality (MexCAMTex) project funded by EPA Region 6 (UH portion \$165,000) in collaboration with Baylor University to use Piper Aztec aircraft flying along the US – Mexico Border to sample biomass burning plumes to investigate the impact of these emissions on Texas air quality (18 months: March 2006 – August 2007).
  - TexAQS II Radical Measurement Project (TRAMP) funded by Houston Area Research Council (\$400,000) from April 2006 – March 2008 to investigate photochemical production and loss of atmospheric radicals during the 2006 Texas Air Quality Study: August - September 2006.
  - Continuing snowpack photochemistry research in Niwot Ridge, CO and Summit, Greenland.
- 2000-2004 Project Scientist I, Atmospheric Chemistry Division (ACD), National Center for Atmospheric Research.
- September 2004 – Present: HIAPER Atmospheric Radiation Package (HARP), NSF funded project (\$900,000) to building and install both actinic flux and irradiance spectroradiometers for the new NSF Gulfstream V High-performance Instrumented Airborne Platform for Environmental Research (HIAPER) aircraft. Joint project with NCAR, University of Colorado, and Institute for Tropospheric Research (Germany).
  - Winter/Spring 2004 and 2005: Investigation of volatile organic compounds produced via snowpack photochemistry and/or directly emitted by soil microbes at the CU Mountain Research Station, Niwot Ridge, CO. I have secured NCAR funds to measure the UV flux into Niwot Ridge snowpack and examine

with my co-PIs the trace gases that our produced and/or emitted from the snowpack in an effort to understand the importance of mid-latitude snow cover on local to regional air quality.

- Fall 2003 – 2005: PI on a 2-year project (with Rick Shetter) to downsize and upgrade our Actinic Flux Spectroradiometer. This effort will include developing a smaller data acquisition (DAQ) system and well as new monochromator/detector system. We plan to construct a LabVIEW based PC-104 DAQ system and will attempt to replace our current scanning double monochromator and a UV-photomultiplier tube detector with a monolithic single monochromator and CCD detector without sacrificing measurement performance.
- Spring 2003 – 2006: PI on a 3-year project to develop an automated Snowpack Spectroradiometer to continuously collect actinic flux spectra at several depths at a remote site at the Summit of the Greenland Ice Sheet (NSF Office of Polar Programs: \$265,000).
- Spring 2003: Measured the transmission of UV actinic flux in Niwot Ridge (CO) snow pack and the snow pack profiles of non-methane hydrocarbons, CFCs and organic nitrates with Aaron Swanson (NOAA/CIRES).
- Fall 2002 – 2005: Development of a direct beam solar spectral photometer for deployment on NASA DC-8 during the SOLVE-2 campaign in Kiruna, Sweden. Funded by a NASA grant (\$350,000 co-PI with Rick Shetter) to measure overhead ozone column and UV/VIS aerosol optical depth as a function of wavelength during the mission (December 2002 – February 2003).
- Summer 2002 – 2003: Development of a Chemical Ionization Mass Spectrometer to measure eddy covariance  $\text{NH}_3$  fluxes (EPA funding \$120,000).
- Summer 2001: Performed tower-based actinic flux measurements in Pellston, MI for the NSF Program for Research on Oxidants: PHotochemistry, Emissions and Transport (PROPHET 2001); NSF Funding \$90,000.
- Spring 2001: Collected actinic flux measurements aboard NASA P-3B in effort to quantify the impact of urban aerosol and Asian dust plumes on insitu photolysis frequencies during the NASA TRansport And Chemical Evolution over the Pacific (TRACE-P) experiment to Hong Kong and Japan. NASA Funding (\$250,000)
- Winter 2000: Deploy ground-based actinic flux spectroradiometer and NO instruments at South Pole as part of ISCAT-2000 project to investigate ultraviolet light induced production of nitrogen oxides in the Antarctic snow pack(NSF OPP Funding \$70,000).
- Summer 2000: Performed tower-based actinic flux measurements in Pellston, MI for the NSF Program for Research on Oxidants: PHotochemistry, Emissions and Transport (PROPHET 2000).
- Spring 2000: Installed, calibrated, and operated aircraft actinic flux spectroradiometers on NCAR C-130 during the Tropospheric Ozone Production about the Spring Equinox (TOPSE) aircraft expedition to Churchill (Manitoba), and Thule (Greenland).
- Spring 2000: Investigated the attenuation of actinic flux with depth in snow pack (Niwot Ridge, CO) and the production of HONO, HCOOH, and  $\text{CH}_3\text{COOH}$  from the photolysis of dissolved ions in snow pack.

1997-1999 Postdoctoral Fellow, Advanced Study Program (ASP), National Center for Atmospheric Research.

- Summer 1998: Maintained and operated  $j(\text{NO}_2)$  and  $j\text{-O}(^1\text{D})$  chemical flow actinometers at the International Photolysis Frequency Measurement and Modeling Intercomparison (IPMMI), Marshall, CO.
- Fall 1998: Integrated aircraft actinic flux spectroradiometers on to NASA P-3B as part of Global Troposphere Experiment 1998 Wallops Summer Test Flights.
- Winter 1998: Deployed ground-based actinic flux spectroradiometer to South Pole Air Research Observatory as part of the Investigation of Sulfur Chemistry in the Antarctic Troposphere (ISCAT).
- Spring 1999: Responsible for the aircraft actinic flux spectroradiometers on NASA P-3B during the NASA Pacific Exploratory Mission-Tropics B (PEM-West B) aircraft expedition to Hawaii, Christmas Island, and Tahiti to study photochemical processes in the tropical Pacific.
- Summer 1999: Integrated a ground-based scanning actinic flux Spectroradiometer in Nashville, TN for the NOAA 1999 Southern Oxidant Study (SOS 1999).

1992-1997 Ph.D. Student, Department of Earth Sciences, University of New Hampshire

- Winter 1994: Investigated Asian dust outflow during the NASA Pacific Exploratory Mission (PEM-WEST B) DC-8 aircraft expedition to Guam, Hong Kong, and Japan.
- Fall 1994: Participated in NSF/NIST Gaseous Sulfur Dioxide Intercomparison Experiment (GASIE) in Lewes, Delaware with UNH/Mist Chamber gas sampler.

- Summers 91, 92, 93, 94, 95: Designed, fabricated, and employed gas and aerosol sampler for use at The Harvard Forest, Petersham, MA in an effort to quantify the dry deposition of HNO<sub>3</sub>, NH<sub>3</sub>, and NO<sub>3</sub><sup>-</sup> to the forest, identify the mechanisms of atmospheric N incorporation into this mid-latitude forest ecosystem, and understand aerosol formation processes above a forest canopy.
  - Summer 1996: Visiting scientist to the Forest Ecosystem Research Group, University College-Dublin.
- 1989-1992 Master's Student, Department of Earth Sciences, University of New Hampshire.
- Summer 1990: Collected and analyzed biomass burning impacted gas and aerosol samples on the NASA Arctic Boundary Layer Experiment (ABLE-3B) Electra aircraft expedition to Canada.
  - Fall 1992: Investigated trace gas biomass burning emissions during the NASA Transport and Atmospheric Chemistry Near the Equator- Atlantic (TRACE-A) DC-8 aircraft expedition to Brazil, South Africa, and Namibia.
- 1987-1988 Laboratory Assistant, Department of Environmental Sciences, University of Virginia.
- Measured the distribution of Pb aerosol on the island of Bermuda as a summer intern at the Bermuda Biological Station for Research. Tracked Bermudian plume of CO and aerosols off-shore from a sailing vessel during the 1988 Western Atlantic Ocean Experiment (WATOX-88). Equipment manager for the Global Precipitation Chemistry network as work-study student in Galloway Lab.

## PUBLICATIONS

- Beyersdorf, A.J., N.J. Blake, A.L. Swanson, S. Meinardi, J.E. Dibb, S. Sjostedt, G. Huey, B. Lefer, F.S. Rowland, and D.R. Blake, Hydroxyl Concentration Estimates in the Sunlit Snowpack at Summit, Greenland, *Atmospheric Environment*, *in press*, 2006.
- Galbavy, E.S., C. Anastasio, B.L. Lefer, and S.R. Hall, Light Penetration in the Snowpack at Summit, Greenland: Part 1. Nitrite and Hydrogen Peroxide Photolysis, *Atmospheric Environment*, *in press*, 2006.
- Galbavy, E.S., C. Anastasio, B.L. Lefer, and S.R. Hall, Light Penetration in the Snowpack at Summit, Greenland: Part 2. Nitrate Photolysis, *Atmospheric Environment*, *in press*, 2006.
- Sjostedt, S.J., L.G. Huey, D.J. Tanner, J. Pieschl, G. Chen, J.E. Dibb, B. Lefer, M.A. Hutterlie, A.J. Beyersdorf, N.J. Blake, D.R. Blake, D.Sueper, and T. Ryerson, HOx observations at Summit, Greenland during the 2003 summer field study, *Atmospheric Environment*, *in press*, 2006.
- Swanson, A.L., N.J. Blake, D.R. Blake, F.S. Rowland, J.E. Dibb, B.L. Lefer, and E. Atlas, Are Methyl Halides Produced on all ice surfaces? observations from snow laden field sites, *Atmospheric Environment*, *in press*, 2006.
- Jäkel, E., M. Wendisch, and B.L. Lefer, Parameterization of ozone photolysis frequency in the lower troposphere using data from photodiode array detector spectrometers, *Journal of Atmospheric Chemistry* DOI: 10.1007/s10874-006-9014-1, 21 pp, 2006.
- Laepfle, T.; Schultz, M. G.; Lamarque, J. F.; Madronich, S.; Shetter, R. E.; Lefer, B. L.; Atlas, E., Improved albedo formulation for chemistry transport models based on satellite observations and assimilated snow data and its impact on tropospheric photochemistry, *J. Geophys. Res.*, Vol. 110, No. D11, D11308, 10.1029/2004JD005463, 2005.
- Swanson, A.L., B.L. Lefer, V. Stroud, and E. Atlas, Trace gas emissions through a winter snowpack in the subalpine ecosystem at Niwot Ridge, Colorado, *Geophysical Research Letters*, 32 (3), 2005.
- Swartz, W.H., J.H. Yee, R.E. Shetter, S.R. Hall, B.L. Lefer, J.M. Livingston, P.B. Russell, E.V. Browell, and M.A. Avery, Column ozone and aerosol optical properties retrieved from direct solar irradiance measurements during SOLVE II, *Atmospheric Chemistry and Physics*, 5, 611-622, 2005.
- Chen, G., D. Davis, J. Crawford, L.M. Hutterli, L.G. Huey, D. Slusher, L. Mauldin, F. Eisele, D. Tanner, J. Dibb, M. Buhr, J. McConnell, B. Lefer, R. Shetter, D. Blake, C.H. Song, K. Lombardi, and J. Arnoldy, A reassessment of HOx South Pole chemistry based on observations recorded during ISCAT 2000, *Atmospheric Environment*, 38 (32), 5451-5461, 2004.
- Davis, D., G. Chen, M. Buhr, J. Crawford, D. Lenschow, B. Lefer, R. Shetter, F. Eisele, L. Mauldin, and A. Hogan, South Pole NOx chemistry: an assessment of factors controlling variability and absolute levels, *Atmospheric Environment*, 38 (32), 5375-5388, 2004.
- Davis, D.D., F. Eisele, G. Chen, J. Crawford, G. Huey, D. Tanner, D. Slusher, L. Mauldin, S. Oncley, D. Lenschow, S. Semmer, R. Shetter, B. Lefer, R. Arimoto, A. Hogan, P. Grube, M. Lazzara, A. Bandy, D. Thornton, H. Berresheim, H. Bingemer, M. Hutterli, J. McConnell, R. Bales, J. Dibb, M. Buhr, J. Park, P. McMurry, A.

- Swanson, S. Meinardi, and D. Blake, An overview of ISCAT 2000, *Atmospheric Environment*, 38 (32), 5363-5373, 2004.
- Hofzumahaus, A., B.L. Lefer, P.S. Monks, S.R. Hall, A. Kylling, B. Mayer, R.E. Shetter, W. Junkermann, A. Bais, J.G. Calvert, C.A. Cantrell, S. Madronich, G.D. Edwards, A. Kraus, M. Muller, B. Bohn, R. Schmitt, P. Johnston, R. McKenzie, G.J. Frost, E. Griffioen, M. Krol, T. Martin, G. Pfister, E.P. Roth, A. Ruggaber, W.H. Swartz, S.A. Lloyd, and M. Van Weele, Photolysis frequency of O-3 to O(D-1): Measurements and modeling during the International Photolysis Frequency Measurement and Modeling Intercomparison (IPMMI), *Journal of Geophysical Research-Atmospheres*, 109 (D8), 2004.
- Mauldin, R.L., E. Kosciuch, B. Henry, F.L. Eisele, R. Shetter, B. Lefer, G. Chen, D. Davis, G. Huey, and D. Tanner, Measurements of OH, HO<sub>2</sub>+RO<sub>2</sub>, H<sub>2</sub>SO<sub>4</sub>, and MSA at the south pole during ISCAT 2000, *Atmospheric Environment*, 38 (32), 5423-5437, 2004.
- Murphy, J.G., J.A. Thornton, P.J. Wooldridge, D.A. Day, R.S. Rosen, C. Cantrell, R.E. Shetter, B. Lefer, and R.C. Cohen, Measurements of the sum of HO<sub>2</sub>NO<sub>2</sub> and CH<sub>3</sub>O<sub>2</sub>NO<sub>2</sub> in the remote troposphere, *Atmospheric Chemistry and Physics*, 4, 377-384, 2004.
- Olson, J.R., J.H. Crawford, G. Chen, A. Fried, M.J. Evans, C.E. Jordan, S.T. Sandholm, D.D. Davis, B.E. Anderson, M.A. Avery, J.D. Barrick, D.R. Blake, W.H. Brune, F.L. Eisele, F. Flocke, H. Harder, D.J. Jacob, Y. Kondo, B.L. Lefer, M. Martinez, R.L. Mauldin, G.W. Sachse, R.E. Shetter, H.B. Singh, R.W. Talbot, and D. Tan, Testing fast photochemical theory during TRACE-P based on measurements of OH, HO<sub>2</sub>, and CH<sub>2</sub>O, *Journal of Geophysical Research-Atmospheres*, 109 (D15), 2004.
- Stroud, C., S. Madronich, E. Atlas, C. Cantrell, A. Fried, B. Wert, B. Ridley, F. Eisele, L. Mauldin, R. Shetter, B. Lefer, F. Flocke, A. Weinheimer, M. Coffey, B. Heikes, R. Talbot, and D. Blake, Photochemistry in the arctic free troposphere: Ozone budget and its dependence on nitrogen oxides and the production rate of free radicals, *Journal of Atmospheric Chemistry*, 47 (2), 107-138, 2004.
- J. G. Murphy, et al., Measurements of the sum of HO<sub>2</sub>NO<sub>2</sub> and CH<sub>3</sub>O<sub>2</sub>NO<sub>2</sub> in the remote troposphere, *Atmos. Chem. Phys. Discuss.*, 3, 5689-5710, 2003.
- Nakamura, K., et al., Measurement of NO<sub>2</sub> by the photolysis conversion technique during the Transport and Chemical Evolution Over the Pacific (TRACE-P) campaign, *Journal of Geophysical Research-Atmospheres*, 108 (D24), 2003.
- Fried A., et al., Airborne tunable diode laser measurements of formaldehyde during TRACE-P: Distributions and box model comparisons, *J. Geophys. Res.*, 108 (D20), 8798, doi:10.1029/2003JD003451, 2003.
- Cantrell C. A., et al., Peroxy radical behavior during the Transport and Chemical Evolution over the Pacific (TRACE-P) campaign as measured aboard the NASA P-3B aircraft, *J. Geophys. Res.*, 108 (D20), 8797, doi:10.1029/2003JD003674, 2003.
- Crawford J., et al., Clouds and trace gas distributions during TRACE-P, *J. Geophys. Res.*, 108 (D21), 8818, doi:10.1029/2002JD003177, 2003.
- Tang Y., et al., Impacts of aerosols and clouds on photolysis frequencies and photochemistry during TRACE-P: 2. Three-dimensional study using a regional chemical transport model, *J. Geophys. Res.*, 108 (D21), 8822, doi:10.1029/2002JD003100, 2003.
- Carmichael G. R., et al., Regional-scale chemical transport modeling in support of the analysis of observations obtained during the TRACE-P experiment, *J. Geophys. Res.*, 108 (D21), 8823, doi:10.1029/2002JD003117, 2003.
- Lefer B. L., R. E. Shetter, S. R. Hall, J. H. Crawford, J. R. Olson, Impact of clouds and aerosols on photolysis frequencies and photochemistry during TRACE-P: 1. Analysis using radiative transfer and photochemical box models, *J. Geophys. Res.*, 108 (D21), 8821, doi:10.1029/2002JD003171, 2003.
- Davis D. D., et al., An assessment of western North Pacific ozone photochemistry based on springtime observations from NASA PEM-West B (1994) and TRACE-P (2001) field studies, *J. Geophys. Res.*, 108 (D21), 8829, doi:10.1029/2002JD003232, 2003.
- Stroud, C., et al., Photochemistry in the Arctic free troposphere: NO<sub>x</sub> budget and the role of odd nitrogen reservoir recycling, *Atmospheric Environment*, 37, 3351-3364, 2003.
- Eisele, F.L., et al., Summary of measurement intercomparisons during TRACE-P, *Journal of Geophysical Research*, 108 (D20), 8791, doi:10.1029/2002JD00316, 2003.
- Cantrell, C.A., J.G. Calvert, A. Bais, R.E. Shetter, B.L. Lefer, and G.D. Edwards, Overview and conclusions of the International Photolysis Frequency Measurement and Modeling Intercomparison (IPMMI) study, *Journal of Geophysical Research*, 108 (D16), 8542, doi:10.1029/2002JD002962, 2003.
- Crawford, J., R. E. Shetter, B. Lefer, C. Cantrell, W. Junkermann, S. Madronich, and J. Calvert, Cloud impacts on UV spectral actinic flux observed during the International Photolysis Frequency Measurement and Model

- Intercomparison (IPMMI), *Journal of Geophysical Research*, 108 (D16), 8545, doi:10.1029/2002JD002731, 2003.
- Bais, A., *et al.*, International Photolysis Frequency Measurement and Model Intercomparison: Spectral actinic solar flux measurements and modeling, *Journal of Geophysical Research*, 108 (D16), 8543, doi:10.1029/2002JD002891, 2003.
- Shetter, R.E., *et al.*, Photolysis frequency of NO<sub>2</sub>: Measurement and modeling during the International Photolysis Frequency Measurement and Modeling Intercomparison (IPMMI), *Journal of Geophysical Research*, 108(D16), 8544, doi:10.1029/2002JD002932, 2003.
- Fried, A., *et al.*, Tunable diode laser measurements of formaldehyde during the TOPSE 2000 study: Distributions, trends, and model comparisons, *Journal of Geophysical Research*, 108 (D4), 8365, doi:10.1029/2002JD002208, 2003.
- Dibb, J.E., *et al.*, Stratospheric influence on the northern North American free troposphere during TOPSE: <sup>7</sup>Be as a stratospheric tracer, *Journal of Geophysical Research*, 108 (D4), doi:10.1029/2001JD001347, 2003.
- Cantrell, C.A., *et al.*, Steady state free radical budgets and ozone photochemistry during TOPSE, *Journal of Geophysical Research*, 108 (D4), 8361, doi:10.1029/2002JD002198, 2003.
- Scheuer, E., R. W. Talbot, J. E. Dibb, G. K. Seid, L. DeBell, and B. Lefer, Seasonal distributions of fine aerosol sulfate in the North American Arctic basin during TOPSE, *Journal of Geophysical Research*, 108 (D4), 8370, doi:10.1029/2001JD001364, 2003.
- Browell, E. *et al.*, Ozone, aerosol, potential vorticity, and trace gas trends observed at high latitudes over North America from February to May 2000, *Journal of Geophysical Research*, 108 (D4), 8369, doi:10.1029/2001JD001390, 2003.
- Wang, Y., *et al.*, Springtime photochemistry at northern mid and high latitudes, *Journal of Geophysical Research*, 108 (D4), 8358, doi:10.1029/2002JD002227, 2003.
- Ridley, B.A., *et al.*, Ozone depletion events observed in the high latitude surface layer during the TOPSE aircraft program, *Journal of Geophysical Research*, 108 (D4), doi:10.1029/2001JD001507, 2003.
- Shetter, R.E., L. Cinquini, B.L. Lefer, S.R. Hall, and S. Madronich, Comparison of airborne measured and calculated spectral actinic flux and derived photolysis frequencies during the PEM Tropics B mission, *Journal of Geophysical Research*, 108 (D2), 8234, doi:10.1029/2001JD001320, 2003.
- Slusher, D.L., *et al.*, Measurements of Pernitric Acid at the South Pole During ISCAT 2000, *Geophysical Research Letters*, 29 (21), 2011, doi:10.1029/2002GL015703, 2002.
- Lefer, B.L., S.R. Hall, L. Cinquini, and R.E. Shetter, Photolysis frequency measurements at the South Pole during ISCAT-98, *Geophysical Research Letters*, 28 (19) 3637-3640, 2001.
- Lefer, B.L., and R. Talbot, .W., Summertime measurements of aerosol nitrate and ammonium at a northeastern U.S. site, *Journal of Geophysical Research*, 106 (D17), 20365-20378, 2001.
- Lefer, B.L., S.R. Hall, L. Cinquini, J.D. Barrick, J.H. Crawford, and R.E. Shetter, A comparison of spectroradiometer and filter radiometer NO<sub>2</sub> photolysis frequency measurements during PEM-Tropics B, *Journal of Geophysical Research*, 106 (D23), 23645-23656, 2001.
- Davis, D., *et al.*, Unexpected high levels of NO observed at South Pole, *Geophysical Research Letters*, 28 (19), 3625-3628, 2001.
- Mauldin, R. L., III., *et al.*, Measurements of OH, H<sub>2</sub>SO<sub>4</sub>, and MSA at the South Pole during ISCAT, *Geophysical Research Letters*, 28 (19), 3629-3632, 2001.
- Crawford, J.H., *et al.*, Evidence for photochemical production of ozone at the South Pole surface, *Geophysical Research Letters*, 28 (19), 3641-3644, 2001.
- Olson, J.R., *et al.*, Seasonal differences in the photochemistry of the South Pacific: A comparison of observations and model results from PEM-Tropics A and B, *Journal of Geophysical Research*, 106 (D23), 32749-32766, 2001.
- Davis, D., *et al.*, Marine latitude/altitude OH distributions: Comparison of Pacific Ocean observations with models, *Journal of Geophysical Research*, 106 (D23), 32691-32708, 2001.
- Mauldin, R.L., III, *et al.*, Measurements of OH aboard the NASA P-3 during PEM-Tropics B, *Journal of Geophysical Research*, 106 (D23), 32657-32666, 2001.
- Chen, G., *et al.*, An investigation of South Pole HO<sub>x</sub> chemistry: Comparison of model results with ISCAT observations, *Geophysical Research Letters*, 28 (19), 3633-3636, 2001.
- Lefer, B.L., R.W. Talbot, and J.W. Munger, Nitric acid and ammonia at a rural northeastern U.S. site, *Journal of Geophysical Research*, 104 (D1), 1645-1661, 1999.

- Talbot, R.W., *et al.*, Chemical characteristics of continental outflow from Asia to the troposphere over the western Pacific Ocean during February-March 1994: Results from PEM-West B, *Journal of Geophysical Research*, *102*, 28255-28275, 1997.
- Dibb, J.E., *et al.*, Distributions of beryllium 7 and lead 210 over the western Pacific: PEM-West B, February-March, 1994, *Journal of Geophysical Research*, *102*, 28287-28302, 1997.
- Talbot, R.W., *et al.*, Large-scale distributions of tropospheric nitric, formic, and acetic acids over the western Pacific basin during wintertime, *Journal of Geophysical Research*, *102*, 28303-28314, 1997.
- Stecher, H. A. III, *et al.*, Results of the gas-phase sulfur intercomparison experiment (GASIE): Overview of experimental set-up, results and general conclusions, *Journal of Geophysical Research*, *102*, 16219-16236, 1997.
- Talbot, R. W., E. M. Scheuer, B. L. Lefer, and W. T. Luke, Measurements of sulfur dioxide during GASIE with the mist chamber technique, *Journal of Geophysical Research*, *102*, 16273-16279, 1997.
- Talbot, R. W., *et al.*, Chemical characteristics of continental outflow over the tropical south Atlantic Ocean from Brazil and Africa, *Journal of Geophysical Research*, *101 (D19)*, 24187-24202, 1996.
- Talbot, R.W., *et al.*, Summertime distribution and relations of reactive odd-nitrogen species and NO<sub>y</sub> in the troposphere over Canada, *Journal of Geophysical Research*, *99 (D1)*, 1863-1886, 1994.
- Sandholm, S.T., *et al.*, Summertime partitioning and budget of NO<sub>y</sub> compounds in the troposphere over Alaska and Canada: ABLE-3B, *Journal of Geophysical Research*, *99 (D1)*, 1837-1863, 1994.
- Lefer, B.L., *et al.*, Enhancement of acidic gases in biomass-burning impacted air masses over Canada, *Journal of Geophysical Research*, *99 (D1)*, 1721-1738, 1994.
- Klemm, O., R.W. Talbot, D.R. Fitzjarrald, K.I. Klemm, and B.L. Lefer, Low to middle tropospheric profiles and biosphere/troposphere fluxes of acidic gases in the summertime Canadian Taiga, *Journal of Geophysical Research*, *99 (D1)*, 1687-1698, 1994.
- Gorzelska, K., R.W. Talbot, K. Klemm, B.L. Lefer, O. Klemm, G.L. Gregory, B. Anderson, and L.A. Barrie, Chemical composition of the atmosphere aerosol in the troposphere over the Hudson Bay lowlands and Quebec-Labrador regions of Canada, *Journal of Geophysical Research*, *99 (D1)*, 1763-1780, 1994.
- Kwiatkowski, B.L., C.E. Catricala, B.L. Lefer, G.L. Murray, S.M. Becker, and W.B. Lyons, A chemical interpretation of water chemistry from Lake Solitude, New Hampshire, *Northeastern Geology*, *13 (3)*, 191-204, 1991.

## PROFESSIONAL SERVICE and AFFILIATIONS

- 2006-Present: Proposal Reviewer, The Austrian Science Fund (FWF)
- 2003-2006: Associate Editor, *Journal of Geophysical Research - Atmospheres*.
- 2003-present: Reviewer, *Journal of Atmospheric and Solar-Terrestrial Physics*.
- 2002-present: Reviewer, *Journal of Atmospheric and Oceanic Technology*.
- 2001-present: Reviewer, *Advances in Environmental Research*.
- 2001: Chairperson, Spring AGU Session.
- 2000-present: Reviewer, *Journal of Atmospheric Chemistry*.
- 1999-present: Reviewer, *Atmospheric Environment*.
- 1998-present: Proposal reviewer, DOE-NIGEC (National Institute for Global Environmental Change).
- 1997-present: Proposal reviewer, NSF Division of Atmospheric Sciences.
- 1996-present: Reviewer, *Journal of Geophysical Research - Atmospheres*.
- 1990-present: Member, American Association for the Advancement of Science.
- 1990-present: Member, American Geophysical Union.

## AWARDS AND HONORS

NASA Group Achievement Award presented to SOLVE Science Team, July 2001.

NCAR Advanced Studies Program Postdoctoral Fellowship, 1997 – 1999.

Participant and co-coordinator of the German-American Academic Council Workshop on the "Challenges in tropospheric photochemistry", Boulder, CO, 8-11 June 1998.

NASA Group Achievement Award presented to PEM-Tropics B Science Team, March 1998.

NCAR Advanced Studies Program Summer Internship, to attend summer colloquium on "Terrestrial ecosystems and the atmosphere", Boulder, CO, July 1996.

Doctoral Student Final Dissertation Year Fellowship, University of New Hampshire, 1996-1997.

Outstanding Student Presentation in Atmospheric Sciences at the Spring 1996 AGU Meeting.

Graduate Research Fellowship, University of New Hampshire, 1993-1996.

NATO Advanced Studies Institute Internship, to attend summer course on "Low temperature chemistry of the atmosphere", Maratea, Italy, September 1993.

University Space Research Association Internship for symposium on "Observing the Earth from Space: Biogeochemical Cycles", Greenbelt, MD, June 1993.

NASA Group Achievement Award presented to ABLE-3B Science Team, July 1991.

NASA Graduate Student Researchers Program Fellowship, 1990-1993.

W.A. Tarr Award - Awarded by Sigma Gamma Epsilon to an undergraduate who demonstrates high potential for success and who exemplifies the goals and purposes of SGE, May 1989.

Sigma Gamma Epsilon: National Honor Society for the Earth Sciences, Inducted March 1988.