

**Publications/Presentations  
Fiscal Year 2000**

**Environmental Research Division**

**1. Refereed Publications**

Bangalore, A.S., Demirgian, J.C., Boparai, A.S., and Small, G.W., "Effect of Spectral Resolution on Pattern Recognition Analysis Using Passive Fourier Transform Infrared Sensor Data," *Applied Spectroscopy* 53(11):1382-1391 (1999).

Cheng, L., Fenter, P., Sturchio, N.C., Zhong, Z., and Bedzyk, M.J., "X-ray Standing Wave Study of Arsenite Incorporation at the Calcite Surface," *Geochimica et Cosmochimica Acta* 63:3153-3157 (1999).

Cook, D.R., Liaw, Y.P., Sisterson, D.L., and Miller, N.L., "Production of Nitrogen Oxides by a Large Spark Generator," *Journal of Geophysical Research* 105:7103-7110 (2000).

Cooper, L.W., Kelley, J.M., Bond, L.A., Orlandini, K.A., and Grebmeier, J.M., "Sources of the Transuranic Elements Plutonium and Neptunium in Arctic Marine Sediments," *Marine Chemistry* 69:253-276 (2000).

Coulter, R.L., and Kallistratova, M.A., "The Role of Acoustic Sounding in a High-Technology Era," *Meteorology and Atmospheric Physics* 71:3-13 (1999).

Coulter, R.L., Klazura, G., Lesht, B.M., Martin, T.J., Shannon, J.D., Sisterson, D.L., and Wesely, M.L., "The Argonne Boundary Layer Experiments Facility: Using Minisodars to Complement a Wind Profiler Network," *Meteorology and Atmospheric Physics* 71:53-59 (1999).

Crombie, M.K., Gillies, R.R., Arvidson, R.E., Brookmeyer, P., Weil, G.J., Sultan, M., and Harb, M., "An Application of Remotely Derived Climatological Fields for Risk Assessment of Vector-Borne Diseases: A Spatial Study of Filariasis Prevalence in the Nile Delta, Egypt," *Photogrammetric Engineering and Remote Sensing* 65(12):1401-1410 (1999).

Doskey, P.V., "The Air-Surface Exchange of C<sub>15</sub>-C<sub>31</sub> n-Alkanes in a Precipitation-Dominated Seepage Lake," *Atmospheric Environment* 34:3981-3993 (2000).

Doskey, P.V., and Talbot, R.W., "Sediment Chronologies of Atmospheric Deposition in a Precipitation-Dominated Seepage Lake," *Limnology and Oceanography* 45(4):895-904 (2000).

Edgerton, S.A., Arriaga, J.L., Archuleta, J., Bian, X., Bossert, J.E., Chow, J.C., Coulter, R.L., Doran, J.C., Doskey, P.V., Elliot, S., Fast, J.D., Gaffney, J.S., Guzman, F., Hubbe, J.M., Lee, J.T., Malone, E.L., Marley, N.A., McNair, L.A., Neff, W., Ortiz, E., Petty, R., Ruiz, M., Shaw, W.J., Sosa, G., Vega, E., Watson, J.G., Whiteman, C.D., Zhong, S., "Particulate Air Pollution in Mexico City — A Collaborative Research Project," *Journal of the Air and Waste Management Association* 49:1221-1229 (1999).

- El-Araby, H., and Sultan, M., "Integrated Seismic Risk Map of Egypt," *Seismological Research Letters* 71(1):53-66 (2000).
- Fast, J.D., Doran, J.C., Shaw, W.J., Coulter, R.L., and Martin, T.J., "The Evolution of the Boundary Layer and Its Effect on Air Chemistry in the Phoenix Area," *Journal of Geophysical Research* 105(D18):22,833-22,848 (2000).
- Fenter, P., and Sturchio, N.C., "Structure and Growth of Stearate Monolayers on Calcite: First Results of an *In Situ* X-ray Reflectivity Study," *Geochimica et Cosmochimica Acta* 63:3145-3152 (1999).
- Fenter, P., Cheng, L., Rihs, S., Machesky, M., Bedzyk, M.J., and Sturchio, N.C., "Probing the Double-Layer Structure at the Rutile-Water Interface with X-ray Standing Waves," *Journal of Colloid and Interface Science* 225:154-165 (2000).
- Fenter, P., Geissbuhler, P., DiMasi, E., Srajer, G., Sorenson, L., and Sturchio, N.C., "Surface Speciation of Calcite Observed *In Situ* by X-ray Scattering," *Geochimica et Cosmochimica Acta* 64(7):1221-1228 (2000).
- Fenter, P., Teng, H., Geissbuhler, P., Hanchar, J.M., Nagy, K., and Sturchio, N.C., "Atomic-Scale Structure of the Orthoclase (001)-Water Interface Measured with High-Resolution X-ray Reflectivity," *Geochimica et Cosmochimica Acta* 64:3663-3673 (2000).
- Fukui, Y., and Doskey, P.V., "Identification of Nonmethane Organic Compound Emissions from Grassland Vegetation," *Atmospheric Environment* 34:2947-2956 (2000).
- Gaffney, J.S., Marley, N.A., Cunningham, M.M., and Doskey, P.V., "Measurements of Peroxyacyl Nitrates (PANs) in Mexico City: Implications for Megacity Air Quality Impacts on Regional Scales," *Atmospheric Environment* 33:5003-5012 (1999).
- Gaffney, J.S., Marley, N.A., Steele, H.D., Drayton, P.J., and Hubbe, J.M., "Aircraft Measurements of Nitrogen Dioxide and Peroxyacyl Nitrates Using Luminol Chemiluminescence with Fast Capillary Gas Chromatography," *Environmental Science and Technology* 33(19):3285-3289 (1999).
- Hanchar, J.M., Finch, R.J., Nagy, K.L., Beno, D.J., Fenter, P., and Sturchio, N.C., "Quantification of Minor Phases in Growth Kinetics Experiments with Powder X-ray Diffraction," *American Mineralogist* 85:1217-1222 (2000).
- Heraty, L.J., Fuller, M.E., Huang, L., Abrajano, Jr., T., and Sturchio, N.C., "Isotopic Fractionation of Carbon and Chlorine by Microbial Degradation of Dichloromethane," *Organic Geochemistry* 30:793-799 (1999).
- Jacobs, J.M., Coulter, R.L., and Brutsaert, W., "Surface Heat Flux Estimation with Wind-Profiler/RASS and Radiosonde Observations," *Advances in Water Resources* 23:339-348 (2000).
- Jastrow, J.D., Miller, R.M., and Owensby, C.E., "Long-Term Effects of Elevated Atmospheric CO<sub>2</sub> on Belowground Biomass and Transformation to Soil Organic Matter in Grassland," *Plant and Soil* 224:85-97 (2000).

Kemner, K.M., Lai, B., Maser, J., Schneegurt, M.A., Cai, Z., Ilinski, P., Kulpa, Jr., C.F., Legnini, D.G., Neelson, K.H., Pratt, S.T., Rodrigues, W., Tischler, M.L., and Yun, W., "Use of the High-Energy X-ray Microprobe at the Advanced Photon Source to Investigate the Interactions between Metals and Bacteria," pp. 319-322 in *X-ray Microscopy: Proceedings of the Sixth International Conference*, edited by W. Meyer-Ilse, T. Warwick, and D. Attwood, American Institute of Physics (2000).

Klazura, G.E., Thomale, J.M., Kelly, D.S., and McCullough, J., "A Comparison of Radar Estimates of Rainfall Accumulation from the WSR-88D Precipitation Algorithm with Rain Gauge Data," *Journal of Atmospheric and Oceanic Technology* 16:1842-1850 (1999).

LeMone, M.A., Grossman, R.L., Coulter, R.L., Wesely, M.L., Klazura, G.E., Poulos, G.S., Blumen, W., Lundquist, J., Cuenca, R.H., Kelly, S., Brandes, E.A., Oncley, S.P., McMillen, R.T., and Hicks, B.B., "Land-Atmosphere Interaction Research, Early Results, and Opportunities in the Walnut River Watershed in Southeast Kansas: CASES and ABLE," *Bulletin of the American Meteorological Society* 81:757-779 (2000).

Marley, N.A., Gaffney, J.S., Drayton, P.J., Cunningham, M.M., Orlandini, K.A., and Paode, R., "Measurement of  $^{210}\text{Pb}$ ,  $^{210}\text{Po}$ , and  $^{210}\text{Bi}$  in Size-Fractionated Atmospheric Aerosols: An Estimate of Fine-Aerosol Residence Times," *Aerosol Science and Technology* 32:569-583 (2000).

Pekour, M.S., and Coulter, R.L., "A Technique for Removing the Effects of Migrating Birds in 915-MHz Wind Profiler Data," *Journal of Atmospheric and Oceanic Technology* 16:1941-1948 (1999).

Richardson, S.J., Splitt, M.E., and Lesht, B.M., "Enhancement of ARM Surface Meteorological Observations during the Fall 1996 Water Vapor Intensive Observation Period," *Journal of Atmospheric and Oceanic Technology* 17:312-322 (2000).

Sultan, M., Fiske, M., Stein, T., Gamal, M., El Araby, H., Madani, A., Mehanee, S., and Becker, R., "Monitoring the Urbanization of the Nile Delta, Egypt," *AMBIO* 28(7):628-631 (1999).

Sultan, M., Sturchio, N.C., Abdel Hady, Y., El Anbeawy, M., and El Bahar, O., "Preserving Nile Water Resources and Ecosystems through the use of Alternative Renewable Ground Water Resources: A Pilot Case — the Eastern Desert of Egypt," pp. 703-712 in *Environment '99*, Proceedings of the Second International Conference and Trade Fair for Environmental Management and Technologies, Cairo, Egypt, November 24-26, 1999 (1999).

Sultan, M., Sturchio, N.C., Gheith, H., Abdel Hady, Y., and El Anbeawy, M., "Chemical and Isotopic Constraints on the Origin of Wadi El-Tarfa Ground Water, Eastern Desert, Egypt," *Ground Water* 38(5):743-751 (2000).

Tsapin, A.I., Goldfeld, M.G., McDonald, G.D., Neelson, K.H., Moskovitz, B., Solheid, P., Kemner, K.M., Kelly, S.D., and Orlandini, K.A., "Iron(VI): Hypothetical Candidate for the Martian Oxidant," *Icarus* 147:68-78 (2000).

Twine, T.E., Kustas, W.P., Norman, J.M., Cook, D.R., Houser, P.R., Meyers, T.P., Prueger, J.H., Starks, P.J., and Wesely, M.L., "Correcting Eddy-Covariance Flux Underestimates over a Grassland," *Agricultural and Forest Meteorology* 103:279-300 (2000).

Wesely, M.L., and Hicks, B.B., "A Review of the Current Status of Knowledge on Dry Deposition," *Atmospheric Environment* 34:2261-2282 (2000).

Yan, E., and Schwartz, F., "Kinetics and Mechanisms for TCE Oxidation by Permanganate," *Environmental Science and Technology* 34:2535-2541 (2000).

## 2. Books (written or edited), Book Chapters (written), and Collections of Conference Proceedings (edited or compiled)

Alvarado, J.S., "Radioanalytical Methodology for Water Analysis," pp. 101-114 (Chapter 7) in *Handbook of Water Analysis*, edited by L.M. Nollet, Marcel Dekker, Inc., New York (2000).

Burton, J.C., and LaFreniere, L.M. (editors), *The Third International Symposium on Integrated Technical Approaches to Site Characterization: Proceedings Volume*, Argonne National Laboratory, Argonne, Illinois, September 12-14, 2000 (2000).

Wuebbles, D.J., Hayhoe, K.A.S., and Kotamarthi, V.R., "Methane in the Global Environment," pp. 304-341 in *Atmospheric Methane*, edited by M.A.K. Khalil, Springer-Verlag, New York (2000).

## 3. Reports

Barr, S., and Sisterson, D.L., *Locale Analysis Report for the Southern Great Plains*, ARM-00-001, Atmospheric Radiation Measurement Program, U.S. Department of Energy, <http://arm.gov/docs/sites/sgp/documents/arm00001.pdf> (2000).

Boyanov, M., Fowle, D., Kemner, K.M., Bunker, B.A., and Fein, J.B., *Binding of Cd Ions to the Cell Wall of B. subtilis — An EXAFS Study*, Advanced Photon Source Activity Report, Argonne National Laboratory, Argonne, Illinois (2000).

Burton, J.C., *Final Phase I Report and Phase II Work Plan: QuickSite<sup>SM</sup> Investigation, Milford, Nebraska*, prepared for Commodity Credit Corporation, U.S. Department of Agriculture, by Argonne National Laboratory, Argonne, Illinois (2000).

Burton, J.C., *Final Report: Phase III QuickSite<sup>SM</sup> Expedited Site Characterization, Raymond, Nebraska*, prepared for Commodity Credit Corporation, U.S. Department of Agriculture, by Argonne National Laboratory, Argonne, Illinois (2000).

Burton, J.C., *Final Report: Phase III QuickSite<sup>SM</sup> Expedited Site Characterization, Ceresco, Nebraska*, prepared for Commodity Credit Corporation, U.S. Department of Agriculture, by Argonne National Laboratory, Argonne, Illinois (1999).

Burton, J.C., *Final Report: QuickSite<sup>SM</sup> Analysis for Canada, Kansas*, prepared for Commodity Credit Corporation, U.S. Department of Agriculture, by Argonne National Laboratory, Argonne, Illinois (1999).

Burton, J.C., *Final Report: Stage I Investigations of the Agricultural/Environmental Enhancement Pilot Program, Utica, Nebraska*, prepared for Commodity Credit Corporation, U.S. Department of Agriculture, by Argonne National Laboratory, Argonne, Illinois (2000).

Burton, J.C., *Final Report: Summary of Argonne QuickSite<sup>SM</sup> Investigations at Hubbard, Nebraska*, prepared for Commodity Credit Corporation, U.S. Department of Agriculture, by Argonne National Laboratory, Argonne, Illinois (2000).

Burton, J.C., *Final Work Plan: Phase I QuickSite<sup>SM</sup> Investigation, Adams, Kansas*, prepared for Commodity Credit Corporation, U.S. Department of Agriculture, by Argonne National Laboratory, Argonne, Illinois (2000).

Burton, J.C., *Final Work Plan: Phase I QuickSite<sup>SM</sup> Investigation, Everest, Kansas*, prepared for Commodity Credit Corporation, U.S. Department of Agriculture, by Argonne National Laboratory, Argonne, Illinois (2000).

Jacobs, G.K., Hendrey, G.R., . . . , Jastrow, J.D., et al., "Carbon Sequestration in Terrestrial Ecosystems," Chapter 4 (pp. 4-1 through 4-29) in *Carbon Sequestration: Research and Development*, DOE/SC/FE-1, U.S. Department of Energy, Office of Science, Office of Fossil Energy, 1999.

Kemner, K.M., Feng, X., Liu, J., Fryxell, G.E., Wang, L.-Q., Kim, A.Y., Gong, M., and Mattigod, S., *X-ray Absorption Spectroscopy Investigation of the Local Chemical Interactions between Hg and Self-Assembled Monolayers on Mesoporous Supports*, Advanced Photon Source Activity Report, Argonne National Laboratory, Argonne, Illinois (2000).

Peppler, R.A., Sisterson, D.L., and Lamb, P., *Site Scientific Mission Plan for the Southern Great Plains CART Site, July-December 1999*, ARM-99-002, prepared for the U.S. Department of Energy, Office of Science, Office of Biological and Environmental Research, Environmental Sciences Division (1999).

#### **4. Published Conference Papers (Unrefereed)**

Coulter, R.L., and Doran, J.C., "Intermittent Turbulent Events Observed with a Sonic Anemometer during CASES99," pp. 622-625 in *Preprints*, 14th Symposium on Boundary Layers and Turbulence, American Meteorological Society, Boston, Massachusetts (2000).

Doskey, P.V., Cook, D.R., and Wesely, M.L., "Measurements of the Dry Deposition Velocity of PAN above Grass," pp. 33-36 in *Preprint Volume*, Symposium on Atmospheric Chemistry Issues in the 21st Century, American Meteorological Society, Boston, Massachusetts (2000).

Doskey, P.V., Rudolph, J., and Kotamarthi, V.R., "Measurements of Nonmethane Hydrocarbons in Phoenix, Arizona," pp. 30-32 in *Preprint Volume*, Symposium on Atmospheric Chemistry Issues in the 21st Century, American Meteorological Society, Boston, Massachusetts (2000).

Drayton, P.J., Blazer, C.A., Marley, N.A., and Gaffney, J.S., "Improved Instrumentation for Near Real-Time Measurement of Reactive Hydrocarbons, NO<sub>2</sub>, and Peroxyacyl Nitrates (PANs)," pp. 56-59 in *Preprint Volume*, Symposium on Atmospheric Chemistry Issues in the 21st Century, American Meteorological Society, Boston, Massachusetts (2000).

Gaffney, J.S., Marley, N.A., and Ravelo, R., "Puerto Rico — 2002: Field Studies to Resolve Aerosol Processes," pp. 37-42 in *Preprint Volume*, Symposium on Atmospheric Chemistry Issues in the 21st Century, American Meteorological Society, Boston, Massachusetts (2000).

Gaffney, J.S., Marley, N.A., Drayton, P.J., Cunningham, M.M., Baird, J.C., and Dintaman, J., "Phoenix, Arizona, Revisited: Indications of Aerosol Effects on O<sub>3</sub>, NO<sub>2</sub>, UV-B, and NO<sub>3</sub>," pp. 43-50 in *Preprint Volume*, Symposium on Atmospheric Chemistry Issues in the 21st Century, American Meteorological Society, Boston, Massachusetts (2000).

Glover, K.C., Kolm, K.E., Sedivy, R.A., and Meyer, W.T., "Hazardous Waste Remediation in Critical Wetland Habitat: Integrating Groundwater, Wetland, and Watershed Models to Bridge Diverse Water Management Needs," p. 3 in *The Third International Symposium on Integrated Technical Approaches to Site Characterization: Proceedings Volume*, Argonne National Laboratory, Argonne, Illinois, September 12-14, 2000 (2000).

Keller, C., Rossabi, J., Riha, B., Walker, J., Nashold, B., and Werenko, P., "Utility of Flexible Liners Installed via Push Rods," pp. 61-64 in *The Third International Symposium on Integrated Technical Approaches to Site Characterization: Proceedings Volume*, Argonne National Laboratory, Argonne, Illinois, September 12-14, 2000 (2000).

Kolm, K.E., and Burton, J.C., "Integrated, Hierarchical Systems Analysis and Management: How Is It Done and Why Bother?" pp. 1-2 in *The Third International Symposium on Integrated Technical Approaches to Site Characterization: Proceedings Volume*, Argonne National Laboratory, Argonne, Illinois, September 12-14, 2000 (2000).

Marley, N.A., Gaffney, J.S., Drayton, P.J., Cunningham, M.M., Meilcarek, C., and Wagner, C., "Residence Times of Fine Tropospheric Aerosols as Determined by <sup>210</sup>Pb Progeny," pp. 1-5 in *Preprint Volume*, Symposium on Atmospheric Chemistry Issues in the 21st Century, American Meteorological Society, Boston, Massachusetts (2000).

Misra, K.C., Walker, J.L., and Burton, J.C., "Local Meteoric Water Line for the Region around Lincoln, Nebraska: Implications for Sources of Subsurface Waters at Contaminated CCC/USDA Sites," pp. 97-98 in *The Third International Symposium on Integrated Technical Approaches to Site Characterization: Proceedings Volume*, Argonne National Laboratory, Argonne, Illinois, September 12-14, 2000 (2000).

Segre, C.U., Leyarovska, N.E., Chapman, L.D., Lavender, W.M., Plag, P.W., King, A.S., Kropf, A.J., Bunker, B.A., Kemner, K.M., Dutta, P., Duran, R.S., and Kaduk, J., "The MRCAT Insertion Device Beamline at the Advanced Photon Source," pp. 419-422 in *Synchrotron Radiation Instrumentation: Eleventh U.S. National Conference*, edited by P. Pianetta, J. Arthur, and S. Brennan, CP521, American Institute of Physics, College Park, Maryland (2000).

Shafer, J.M., Walker, J.L., Sedivy, R.A., Burton, J.C., Nashold, B.W., and Dennis, C.B., "Solute Transport Modeling and 3-D Visualization as the Basis for Long-Term Groundwater Monitoring Recommendations at Murdock, Nebraska," pp. 13-16 in *The Third International Symposium on Integrated Technical Approaches to Site Characterization: Proceedings Volume*, Argonne National Laboratory, Argonne, Illinois, September 12-14, 2000 (2000).

Shannon, J.D., "Examining Emissions Policy Issues with an Integrated Assessment Model," pp. 441-446 in *Preprint Volume*, 11th Joint Conference on the Applications of Air Pollution Meteorology with the Air and Waste Management Association, Boston, Massachusetts (2000).

Song, J., and Wesely, M.L., "Estimating Root-Zone Moisture and Evapotranspiration with AVHRR Data," pp. 293-296 in *Preprints*, 15th Conference on Hydrology, American Meteorological Society, Boston, Massachusetts (2000).

Spokas, K., and LaFreniere, L., "Stronger Pore Pressure Cone Design and Effect of Filter Material on Collected Data in CPTU Testing," pp. 53-56 in *The Third International Symposium on Integrated Technical Approaches to Site Characterization: Proceedings Volume*, Argonne National Laboratory, Argonne, Illinois, September 12-14, 2000 (2000).

Sturchio, N., Sultan, M., El Sharkawi, M., El Alfy, Z., Taher, A., El Maghraby, A., and El Anbaawy, M.I.H., "Origin of Groundwaters in the Newly Reclaimed Agricultural Lands, Western Nile Delta, Egypt: Preliminary Isotopic Results," pp. 1094-1098 in *The Geology of the Arab World (GAW 4)*, Fourth International Conference, Cairo, Egypt, February 21-25, 1998 (1999).

Wesely, M.L., "On the Dry Deposition of Submicron Particles," pp. 93-94 in *Preprint Volume*, Symposium on Atmospheric Chemistry Issues in the 21st Century, American Meteorological Society, Boston, Massachusetts (2000).

Wesely, M.L., Kotamarthi, V.R., and Xu, Y., "On the Effects of Fast Chemical Reactions on the Vertical Fluxes of NO and NO<sub>2</sub> in the Atmospheric Surface Layer," pp. 184-185 in *Preprints*, 24th Conference on Agricultural and Forest Meteorology, American Meteorological Society, Boston, Massachusetts (2000).

Wesely, M.L., Shannon, J.D., and Doskey, P.V., "Gaseous Deposition Described with the Industrial Source Complex Model," pp. 204-206 in *Preprint Volume*, 11th Joint Conference on the Applications of Air Pollution Meteorology with the Air and Waste Management Association, American Meteorological Society, Boston, Massachusetts (2000).

## 5. Published Abstracts, Notes, Reviews, Comments, and Letters

Bar-Sever, Y., Emardson, R., Liljegren, J., and Vandegerghe, F., "Validating GPS-Based Estimates of Line-of-Sight Precipitable Water," abstract in *EOS, Transactions, American Geophysical Union*, 80:F263 (1999).

Bever, J.D., Chaudhary, V., Schultz, P.A., Miller, R.M., and Jastrow, J.D., "Evidence for Increasing Dependence on Mycorrhizal Fungi with Successional Stage within Tallgrass Prairie Species: Response to Soil Community Inoculations," pp. 248-249 in *Annual Meeting Abstracts*, The Ecological Society of America 85th Annual Meeting, Snowbird, Utah, August 6-10, 2000 (2000).

Dell, C.J., Smucker, A.J.M., Paul, E.A., and Jastrow, J.D., "Carbon Sequestration in Concentric Layers of Soil Aggregates in Agroecosystems," p. 131 in *Annual Meeting Abstracts*, Annual Meeting of the Soil Science Society of America, Salt Lake City, Utah, October 31-November 1, 1999 (1999).

Fenter, P., Cheng, L., Machesky, M.L., Bedzyk, M.J., and Sturchio, N.C., "Probing the Electrical Double-Layer Structure at the Rutile-Water Interface with X-ray Standing Waves," p. 397 in *Goldschmidt 2000 — Journal of Conference Abstracts*, vol. 5(2), Cambridge Publications, Cambridge, United Kingdom (on CD) (2000).

Gheith, H.M., and Sultan, M.I., "Assessment of the Renewable Ground Water Resources of the Sinai Peninsula, Egypt, Using Remote Sensing, Digital Terrain Elevation, and Meteorological Data," in *Abstracts, Remote Sensing and Hydrology 2000 Symposium*, Santa Fe, New Mexico, April 4-7, 2000 (2000).

Gheith, H.M., and Sultan, M.I., "Preliminary Assessment of the Renewable Ground Water Resources of the Eastern Desert," Egypt, pp. 37-39 in *Program with Abstracts*, National Ground Water Association Annual Meeting, Nashville, Tennessee, December 2-6, 1999 (1999).

Hering, J.G., Wilkie, J.A., Kneebone, P.E., and Salmassi, T., "Redox Cycling of Arsenic in Geothermally Influenced Surface Waters," *Geological Society of America Abstracts* 31(7):A-448 (1999).

Holdridge, D., *Atmospheric Radiation Measurement Program Facilities Newsletter, October 1999*, ANL/ER/NL-99-10, Argonne National Laboratory, Argonne, Illinois (1999).

Holdridge, D., *Atmospheric Radiation Measurement Program Facilities Newsletter, November 1999*, ANL/ER/NL-99-11, Argonne National Laboratory, Argonne, Illinois (1999).

Holdridge, D., *Atmospheric Radiation Measurement Program Facilities Newsletter, December 1999*, ANL/ER/NL-99-12, Argonne National Laboratory, Argonne, Illinois (1999).

Holdridge, D., *Atmospheric Radiation Measurement Program Facilities Newsletter, January 2000*, ANL/ER/NL-00-01, Argonne National Laboratory, Argonne, Illinois (2000).

Holdridge, D., *Atmospheric Radiation Measurement Program Facilities Newsletter, February 2000*, ANL/ER/NL-00-02, Argonne National Laboratory, Argonne, Illinois (2000).

Holdridge, D., *Atmospheric Radiation Measurement Program Facilities Newsletter, March 2000*, ANL/ER/NL-00-03, Argonne National Laboratory, Argonne, Illinois (2000).

Holdridge, D., *Atmospheric Radiation Measurement Program Facilities Newsletter, April 2000*, ANL/ER/NL-00-04, Argonne National Laboratory, Argonne, Illinois (2000).

Holdridge, D., *Atmospheric Radiation Measurement Program Facilities Newsletter, May 2000*, ANL/ER/NL-00-05, Argonne National Laboratory, Argonne, Illinois (2000).

Holdridge, D., *Atmospheric Radiation Measurement Program Facilities Newsletter, June 2000*, ANL/ER/NL-00-06, Argonne National Laboratory, Argonne, Illinois (2000).

- Holdridge, D., *Atmospheric Radiation Measurement Program Facilities Newsletter, July 2000*, ANL/ER/NL-00-07, Argonne National Laboratory, Argonne, Illinois (2000).
- Holdridge, D., *Atmospheric Radiation Measurement Program Facilities Newsletter, August 2000*, ANL/ER/NL-00-08, Argonne National Laboratory, Argonne, Illinois (2000).
- Holdridge, D., *Atmospheric Radiation Measurement Program Facilities Newsletter, September 2000*, ANL/ER/NL-00-09, Argonne National Laboratory, Argonne, Illinois (2000).
- Jastrow, J.D., and Miller, R.M., "Soil Aggregation in the Rhizosphere: Optimal Conditions for Multiple Mechanisms," p. 21 in *Annual Meeting Abstracts*, The Ecological Society of America 85th Annual Meeting, Snowbird, Utah, August 6-10, 2000 (2000).
- Lesht, B.M., "In Situ Observations of Sediment Resuspension and Horizontal Sediment Flux in a Non-Depositional Region of Southern Lake Michigan," abstract, p. 0S227 in *EOS, Transactions, American Geophysical Union* (2000).
- Lesht, B.M., and Hawley, N., "Empirical Modeling of Sediment Resuspension in the Great Lakes," p. A89 in *Program and Abstracts*, 43rd Conference of the International Association for Great Lakes Research, Cornwall, Ontario, Canada, May 22-26, 2000 (2000).
- Liaw, Y.P., Cook, D.R., Sisterson, D.L., and Miller, N.L., "Direct Field Measurement of NO<sub>x</sub> Production by Lightning," p. F195 in *Abstracts*, 1999 Fall Meeting of the American Geophysical Union, San Francisco, California, December 13-17, 1999 (1999).
- Lu, D., Song, J., and Wesely, M.L., "Exploring a Scheme for Routine Atmospheric Corrections of Satellite Reflectances," p. 8 in *Book of Abstracts for 50th Annual Meeting*, West Lakes Division, Association of American Geographers, DeKalb, Illinois, September 30-October 1, 1999 (1999).
- Minissale, A., Kerrick, D.M., Magro, G., Rihs, S., and Sturchio, N.C., "The Origin, Transport, Crustal Storage and Expulsion of CO<sub>2</sub> Associated with Italian Thermal Springs and Travertines," p. 711 in *Goldschmidt 2000 — Journal of Conference Abstracts*, vol. 5(2), Cambridge Publications, Cambridge, United Kingdom (on CD) (2000).
- Nagy, K., Schlegel, M., Cheng, L., Fenter, P., and Sturchio, N.C., "Alteration of Muscovite to a Mg-Clay," p. 737 in *Goldschmidt 2000 — Journal of Conference Abstracts*, vol. 5(2), Cambridge Publications, Cambridge, United Kingdom (on CD) (2000).
- Reilly, C.A., "In Memoriam: Miriam Dorothy (Posner) Finkel (1916-1999)," *Radiation Research* 154:224-226 (2000).
- Schultz, P.A., Miller, R.M., Jastrow, J.D., Rivetta, C.V., and Bever, J.D., "Evidence of a Mycorrhizal Mechanism for the Adaptation of *Andropogon gerardii* to High- and Low-Nutrient Prairies," pp. 199-200 in *Annual Meeting Abstracts*, The Ecological Society of America 85th Annual Meeting, Snowbird, Utah, August 6-10, 2000 (2000).

Smucker, A.J.M., Dell, C.J., Kinyangi, J., and Jastrow, J.D., "Quantitative Removal of Concentric Layers from Soil Aggregates by Soil Aggregate Erosion Chambers," p. 130 in *Annual Meeting Abstracts*, Annual Meeting of the Soil Science Society of America, Salt Lake City, Utah, October 31-November 1, 1999 (1999).

Song, J., and Wesely, M.L., "Estimating Root-Zone Moisture and Evapotranspiration with AVHRR Data," in *Abstract Volume* (CD), 96th Annual Meeting, Association of American Geographers, Pittsburgh, Pennsylvania, April 4-8, 2000 (2000).

Song, J., and Wesely, M.L., "Using Remote Sensing Data to Infer Root-Zone Moisture and Evapotranspiration," p. 8 in *Book of Abstracts* for 50th Annual Meeting, West Lakes Division, Association of American Geographers, DeKalb, Illinois, September 30-October 1, 1999 (1999).

Stroud, J.R., Lesht, B.M., Stein, M., Meng, X.-L., Welty, L., Frederick, J.E., and Leshkevich, G.A., "Space-Time Modeling of Lake Michigan Chlorophyll Levels Estimated from Satellite Observations," pp. A152-A153 in *Program and Abstracts*, 43rd Conference of the International Association for Great Lakes Research, Cornwall, Ontario, Canada, May 22-26, 2000 (2000).

Sturchio, N.C., Fenter, P., and Teng, H.H., "New Evidence of Orthoclase Dissolution Mechanisms by *In Situ* X-ray Reflectivity and Atomic Force Microscopy," p. 965 in *Goldschmidt 2000 — Journal of Conference Abstracts*, vol. 5(2), Cambridge Publications, Cambridge, United Kingdom (on CD) (2000).

Sultan, M., and El Araby, H., "Seismic Risks in Egypt," p. 85 in *Abstract Book: Mantle Dynamic Implications for Tethyan Natural Hazard Mitigation*, IGCP 430, International Geological Correlation Program, Covasna, Romania, June 16-22, 2000 (2000).

Wei, C., Kotamarthi, V., Ogunsola, O.J., Wuebbles, D.J., Brasseur, G.P., Blake, D.R., Brune, H., Browell, E.V., Avery, M.A., Sachse, G.W., and Sandholm, S.T., "Seasonal Variability of Ozone Mixing Ratios and Budgets in the Tropical Southern Pacific: A GCTM Perspective," abstract in *EOS, Transactions, American Geophysical Union* 81:S126 (2000).

Wesely, M.L., Xu, Y., Song, J., and McMillen, R.T., "Effects of Soil Moisture Variations on Deposition Velocities above Vegetation," p. 4 in *Book of Abstracts* for the Sixth International Conference on Air-Surface Exchange of Gases and Particulates, Edinburgh, United Kingdom, July 3-7, 2000 (2000).

## 6. Oral Presentations (speaker underlined)

Bar-Sever, Y., Emardson, R., Liljegren, J., and Vandeberghe, F., "Validating GPS-Based Estimates of Line-of-Sight Precipitable Water," 1999 Fall Meeting, Geodetic Measurement and Modeling, American Geophysical Union, San Francisco, California, December 14, 1999.

Bever, J.D., Chaudhary, V., Schultz, P.A., Miller, R.M., and Jastrow, J.D., "Evidence for Increasing Dependence on Mycorrhizal Fungi with Successional Stage within Tallgrass Prairie Species: Response to Soil Community Inoculations," The Ecological Society of America 85th Annual Meeting, Snowbird, Utah, August 2000.

Coulter, R.L., "Scales and Heterogeneities of Surface Albedo and Fluxes," Atmospheric Radiation Measurement Science Team Meeting, U.S. Department of Energy, San Antonio, Texas, March 16, 2000.

Coulter, R.L., and Doran, J.C., "Intermittent Turbulence Events Observed with a Sonic Anemometer during CASES99," 14th Symposium on Boundary Layers and Turbulence, American Meteorological Society, Aspen, Colorado, August 11, 2000.

Coulter, R.L., Lesht, B.M., Klazura, G.E., Sisterson, D.L., Wesely, M.L., LeMone, M.A., and Grossman, R.L., "Atmospheric Boundary Layer Experiments at the Walnut River Watershed in Kansas," Second Science Symposium of the U.S. Weather Research Program, Boulder, Colorado, March 27-28, 2000.

Demirgian, J., "Cocaine Contamination Studies on Chicago Currency," Chemistry Department Seminar, University of Illinois, Champaign, Illinois, October 29, 1999.

Demirgian, J., "Quantitative Analysis of Infrared Data Using Partial and Classical Least Square Software," Chemistry Department Seminar, University of Illinois, Champaign, Illinois, October 29, 1999.

Donnelly, M.I., "Succinic Acid Production in *Escherichia coli*," Microbiology Colloquium Seminar, Department of Bacteriology, University of Wisconsin, Madison, Wisconsin, November 11, 1999.

Doskey, P.V., "Atmospheric Chemistry of NMOCs in Urban Air," Annual Science Meeting, Atmospheric Chemistry Program, U.S. Department of Energy, Alexandria, Virginia, November 30-December 2, 1999.

Doskey, P.V., "Distributions of Nonmethane Hydrocarbons at the Polk, Dickson, and Corneila Fort Airpark Sites," Southern Oxidants Study 2000 Data Analysis Workshop, Research Triangle Park, North Carolina, March 9, 2000.

Doskey, P.V., Cook, D.R., and Wesely, M.L., "Measurements of the Dry Deposition Velocity of PAN above Grass," Symposium on the Atmospheric Chemistry Issues in the 21st Century, American Meteorological Society, Long Beach, California, January 10, 2000.

Doskey, P.V., Rudolph, J., and Kotamarthi, V.R., "Measurements of Nonmethane Hydrocarbons in Phoenix, Arizona," Symposium on the Atmospheric Chemistry Issues in the 21st Century, American Meteorological Society, Long Beach, California, January 10, 2000.

Drayton, P.J., Blazer, C.A., Marley, N.A., and Gaffney, J.S., "Improved Instrumentation for Near Real-Time Measurement of Reactive Hydrocarbons, NO<sub>2</sub>, and Peroxyacyl Nitrates (PANs)," Symposium on the Atmospheric Chemistry Issues in the 21st Century, American Meteorological Society, Long Beach, California, January 2000.

Fenter, P., "Experimental Methods for Investigating Crystal-Fluid Interfaces," Tutorial, Materials Research Society Spring Meeting, San Francisco, California, April 23, 2000.

Fenter, P., "Probing the Adsorption of Ions at Oxide Interfaces with X-ray Standing Waves," Institute for Environmental Catalysis Second Semi-Annual Meeting, Northwestern University, September 15, 1999.

Fenter, P., "Probing the Electrical Double-Layer Structure at the Rutile-Water Interface with X-ray Standing Waves," University of California at Berkeley, Berkeley, California, October 6, 1999.

Fenter, P., "Probing the Liquid-Solid Interface with X-ray Scattering," Department of Chemistry, Louisiana State University, January 28, 2000.

Fenter, P., "Probing the Liquid-Solid Interface with X-ray Scattering," Materials Research Society Spring Meeting, San Francisco, California, April 24, 2000.

Fenter, P., "Probing the Mineral-Fluid Interface with X-ray Scattering," Basic Energy Sciences Synchrotron Radiation Center (BESSRC) Users Meeting, Argonne, Illinois, April 7, 2000.

Fenter, P., "Probing the Mineral-Fluid Interface with X-rays," Advanced Photon Source Users Meeting, Argonne, Illinois, May 4, 2000.

Fenter, P., Chang, L., Rihs, S., Machesky, M., Bedzyk, M.J., and Sturchio, N.C., "Probing the Electrical Double-Layer Structure at the Rutile-Water Interface with X-ray Standing Waves," Euroesco Conference on Mineral-Surface Reactivity, San Feliu de Guixois, Spain, May 28-June 1, 2000.

Fenter, P., Cheng, L., Machesky, M.L., Bedzyk, M.J., and Sturchio, N.C., "Probing the Electrical Double-Layer Structure at the Rutile-Water Interface with X-ray Standing Waves," Goldschmidt 2000, Oxford, United Kingdom, September 3-8, 2000.

Fenter, P., Cheng, L., Rihs, S., Machesky, M., Geissbuhler, P., Bedzyk, M.J., and Sturchio, N.C., "Probing the Electrical Double-Layer Structure at the Rutile-Water Interface with X-ray Standing Waves," Materials Research Society National Meeting, Boston, Massachusetts, November 30, 1999.

Gaffney, J.S., "Atmospheric Chemistry Program Overview," Global Change Education Program Orientation, Tulane University, New Orleans, Louisiana, June 16, 2000.

Gaffney, J.S., "Global Change Education Program End-of-Summer Workshop Goals and Expectations," Global Change Education Program End-of-Summer Workshop, Oak Ridge, Tennessee, August 22, 2000.

Gaffney, J.S., "Global Change Education Program in the Department of Energy: Opportunities for Undergraduates and Graduate Students," Panel Session on Opportunities for Students, Celebrating 20th Century Pioneers in Atmospheric Sciences: Examining 21st Century Challenges and Opportunities, Howard University, Washington, D.C., March 20, 2000.

Gaffney, J.S., “Looking Beyond the Obvious: The Need for Interdisciplinary Research in Environmental Science,” Global Change Education Program Orientation, Tulane University, New Orleans, Louisiana, June 17, 2000.

Gaffney, J.S., “Organic Oxidants and Aerosols in Mexico City: Focus on Peroxyacetyl Nitrate (PAN) and Regional Transport,” Seminar, Department of Earth and Environmental Sciences, University of Illinois at Chicago, Chicago, Illinois, September 21, 2000.

Gaffney, J.S., “Tropospheric Chemistry Field Studies in Mexico City and Phoenix, Arizona: Global Implications,” Chemistry Department Seminar, Texas A&M University, College Station, Texas, October 12, 1999.

Gaffney, J.S., and Marley, N.A., “Atmospheric Chemistry Measurements in Mexico City and Phoenix, Arizona: Global Implications and Global Change Education Opportunities,” Chemistry Department Seminar, University of Puerto Rico, Rio Piedras, Puerto Rico, March 13, 2000.

Gaffney, J.S., and Marley, N.A., “Global Change Education Program Opportunities for Undergraduates,” PRISM, University of Puerto Rico, Rio Piedras, Puerto Rico, March 11, 2000.

Gaffney, J.S., and Marley, N.A., “Issues in Atmospheric Chemistry,” Seminar Series on Environmental Chemistry, Associated Colleges of the Chicago Area, Argonne National Laboratory, Argonne, Illinois, November 2, 1999.

Gaffney, J.S., and Marley, N.A., “Some Recent Field Observations and Ideas on Future Process Oriented Field Studies,” Annual Science Meeting, Atmospheric Chemistry Program, U.S. Department of Energy, Alexandria, Virginia, November 30, 1999.

Gaffney, J.S., Marley, N.A., and Drayton, P.J., “Fast Gas Chromatography with Luminol Detection for Measurement of Nitrogen Dioxide and PANs,” U.S.-German Workshop on Smog Chamber Chemistry, Riverside, California, October 4-6, 1999.

Gaffney, J.S., Marley, N.A., and Ravelo, R., “Puerto Rico — 2000: Field Studies to Resolve Aerosol Processes,” Symposium on the Atmospheric Chemistry Issues in the 21st Century, American Meteorological Society, Long Beach, California, January 2000.

Gaffney, J.S., Marley, N.A., Drayton, P.J., Cunningham, M.M., Baird, J.C., Dintaman, J., and Hart, H., “Phoenix, Arizona, Revisited: Indications of Aerosol Effects on O<sub>3</sub>, NO<sub>2</sub>, UV-B, and NO<sub>3</sub>,” Symposium on the Atmospheric Chemistry Issues in the 21st Century, American Meteorological Society, Long Beach, California, January 2000.

Glover, K.C., Kolm, K.E., Sedivy, R.A., and Meyer, W.T., “Hazardous Waste Remediation in Critical Wetland Habitat: Integrating Groundwater, Wetland, and Watershed Models to Bridge Diverse Water Management Needs,” Third International Symposium on Integrated Technical Approaches to Site Characterization, Argonne National Laboratory, Argonne, Illinois, September 12-14, 2000.

Jastrow, J.D., and Miller, R.M., "Soil Aggregation in the Rhizosphere: Optimal Conditions for Multiple Mechanisms," Symposium on The Rhizosphere: Top-Down and Bottom-Up Approaches, The Ecological Society of America 85th Annual Meeting, Snowbird, Utah, August 9, 2000.

Keller, C., Rossabi, J., Riha, B., Walker, J., Nashold, B., and Werenko, P., "Utility of Flexible Liners Installed via Push Rods," Third International Symposium on Integrated Technical Approaches to Site Characterization, Argonne National Laboratory, Argonne, Illinois, September 12-14, 2000.

Kemner, K.M., "The Use of Synchrotron Radiation for Environmental Research," Programmatic Division Directors Luncheon, Argonne National Laboratory, Argonne, Illinois, July 2000.

Kemner, K.M., Lai, B., Maser, J., Pratt, S.T., Cai, Z., Legnini, D., Ilinski, P., Rodrigues, W., Germino, K., Kelly, S., Belz, A., Neelson, K., Schneegurt, M., Kulpa, C., Mundo, M., Fowle, D., Boyanov, M., Bunker, B., Fein, J., Tischler, M., Fredrickson, J., Gorby, Y., Smith, S., and Zachara, J., "X-ray Investigations of Microbe-Mineral-Contaminant Interactions," Natural and Accelerated Bioremediation Meeting, DOE Office of Biological and Environmental Research, Washington, D.C., January 31-February 2, 2000.

Kemner, K.M., Neelson, K., Pratt, S.T., Lai, B., Maser, J., Cai, Z., Legnini, D., Ilinski, P., Rodrigues, W., Schneegurt, M., Kulpa, C., and Fredrickson, J., "Investigation of the Spatial Distributions and Transformations of Cr, Pb, and U Co-contaminant Species at the Bacteria-Geosurface Interface," Natural and Accelerated Bioremediation Meeting, DOE Office of Biological and Environmental Research, Washington, D.C., January 31-February 2, 2000.

Klazura, G.E., "Severe Weather Events and Safety Precautions," Presentation to Sixth and Seventh Grade Classes, St. Columbia School, Durango, Colorado, April 20, 2000.

Kolm, K.E., and Burton, J.C., "Integrated, Hierarchical Systems Analysis and Management: How Is It Done and Why Bother?" Third International Symposium on Integrated Technical Approaches to Site Characterization, Argonne National Laboratory, Argonne, Illinois, September 12-14, 2000.

Kotamarthi, V.R., "The Development of the TLM/Adjoint Photochemical Trajectory Models," MOZART (Model for Ozone and Reactive Trace Gases) Core Group Meeting, University of Illinois at Urbana-Champaign, Urbana, Illinois, September 26, 2000.

Kotamarthi, V.R., and Hovland, P., "Development of a TLM/Adjoint Photochemical Air-Parcel Trajectory Model: Preliminary Discussion and Results," Second Data Workshop on PEM-TROPICS B, National Aeronautics and Space Administration, Hampton, Virginia, May 15, 2000.

Kotamarthi, V.R., Ogunsola, O.J., and Wuebbles, D.J., "A Systematic Approach for Quantifying the Uncertainties in Photochemical Air-Parcel Trajectory Calculations," First Data Workshop, Pacific Exploratory Mission in the Tropics B, National Aeronautics and Space Administration, Hampton, Virginia, October 19, 1999.

Kukkadapu, R.K., Zachara, J.M., Fredrickson, J.K., Smith, S., and Kemner, K.M., "Microbial Reduction of Ni(II) Doped Hydrous Ferric Oxide," International Symposium on Industrial Applications of Mossbauer Effect, Virginia Beach, Virginia, August 13-18, 2000.

LaFreniere, L., Sedivy, R.A., Walker, J., and Hansen, J., "Results of the Phase I Investigation of Groundwater Contamination at Milford, Nebraska, and the Phase II Work Plan," presentation to the Milford City Council, Milford, Nebraska, March 7, 2000.

Lesht, B.M., "In Situ Observations of Sediment Resuspension and Horizontal Sediment Flux in a Non-Depositional Region of Southern Lake Michigan," National Oceanic and Atmospheric Administration Coastal Ocean Processes Program, 2000 Ocean Sciences Meeting, San Antonio, Texas, January 27, 2000.

Lesht, B.M., "In Situ Resuspension of a Non-Depositional Region of Southern Lake Michigan: A Comparison of Spring and Fall," Combined Science Team Meeting: Episodic Events-Great Lakes Experiments (EEGLE) and Keweenaw Interdisciplinary Transport Sediment in Superior (KITES), National Oceanic and Atmospheric Administration and National Science Foundation/Coastal Ocean Processes, Minneapolis, Minnesota, October 29, 1999.

Lesht, B.M., "Reflections on the ARM Infrastructure Review Process," Atmospheric Radiation Measurement Tropical Western Pacific Operations Services Site (ATOSS) Techno-Lunch, Sandia National Laboratories, Albuquerque, New Mexico, February 22, 2000.

Lesht, B.M., and Hawley, N., "Empirical Modeling of Sediment Resuspension in the Great Lakes," 43rd Conference of the International Association for Great Lakes Research, Cornwall, Ontario, Canada, May 24, 2000.

Liaw, Y.P., Cook, D.R., Sisterson, D.L., and Miller, N.L., "Direct Field Measurement of NO<sub>x</sub> Production by Lightning," 1999 Fall Meeting, American Geophysical Union, San Francisco, California, December 14, 1999.

Lu, D., Song, J., and Wesely, M.L., "Exploring a Scheme for Routine Atmospheric Corrections of Satellite Reflectances," 50th Annual Meeting of the West Lakes Division of the Association of American Geographers, Northern Illinois University, DeKalb, Illinois, October 1, 1999.

Marley, N.A., and Doran, C.J., "Preliminary Meteorological Results from the 1999 NEOPS Field Studies: Sondes Good to Me," Northeast Oxidant and Particle Study (NEOPS) Workshop, Wilmington, Delaware, February 7-8, 2000.

Marley, N.A., and Fast, J.D., "DOE Modeling Activity Associated with the 1999 NEOPS Field Campaign," Northeast Oxidant and Particle Study (NEOPS) Workshop, Wilmington, Delaware, February 7-8, 2000.

Marley, N.A., and Gaffney, J.S., "Preliminary Results from the New Jersey Field Site — Summer of 1999," Northeast Oxidant and Particle Study (NEOPS) Workshop, Wilmington, Delaware, February 7-8, 2000.

Marley, N.A., Gaffney, J.S., Drayton, P.J., Cunningham, M.M., Padilla, O., Mielcarek, C., and Wagner, C., "Residence Times of Fine Tropospheric Aerosols as Determined by  $^{210}\text{Pb}$  Progeny," Symposium on the Atmospheric Chemistry Issues in the 21st Century, American Meteorological Society, Long Beach, California, January 2000.

Meyer, W.T., Yan, E., Kickels, W., and Hansen, J., "Work Plan for Investigation of Groundwater Contamination at Everest, Kansas," presentation to the Everest City Council, Everest, Kansas, May 3, 2000.

Meyer, W.T., Yan, E., Kickels, W., and Hansen, J., "Work Plan for Investigation of Groundwater Contamination at Adams, Nebraska," presentation to the Adams Village Board, Adams, Nebraska, April 6, 2000.

Michalsky, J., Stoffel, T., Dutton, E., and Wesely, M., "Optical Radiometry and Spectroradiometry in the Atmospheric Radiation Measurement (ARM) Program," The Role of Remote Sensing in Managing the Global Environment, Institute of Electrical and Electronics Engineers, Inc. (IEEE), Geoscience and Remote Sensing Society (IGARSS), Honolulu, Hawaii, July 25, 2000.

Miller, R.M., "Restoring Soils through Prairie Restoration," Saturday Seminars in Biology Group, The University of Chicago, Chicago, Illinois, April 29, 2000.

Minissale, A., Kerrick, D.M., Magro, G., Rihs, S., and Sturchio, N.C., "The Origin, Transport, Crustal Storage and Expulsion of  $\text{CO}_2$  Associated with Italian Thermal Springs and Travertines," Goldschmidt 2000, Oxford, United Kingdom, September 3-8, 2000.

Misra, K.C., Walker, J.L., and Burton, J.C., "Local Meteoric Water Line for the Region around Lincoln, Nebraska: Implications for Sources of Subsurface Waters at Contaminated CCC/USDA Sites," Third International Symposium on Integrated Technical Approaches to Site Characterization, Argonne National Laboratory, Argonne, Illinois, September 12-14, 2000.

Nagy, K., Schlegel, M., Cheng, L., Fenter, P., and Sturchio, N.C., "Alteration of Muscovite to a Mg-Clay," Goldschmidt 2000, Oxford, United Kingdom, September 3-8, 2000.

Richardson, S.J., Guichard, F., and Lesht, B.M., "The Radiative Impact of the Radiosonde Relative Humidity Bias," Atmospheric Radiation Measurement Science Team Meeting, U.S. Department of Energy, San Antonio, Texas, March 16, 2000.

Schultz, P.A., Miller, R.M., Jastrow, J.D., Rivetta, C.V., and Bever, J.D., "Evidence of a Mycorrhizal Mechanism for the Adaptation of *Andropogon gerardii* to High- and Low-Nutrient Prairies," The Ecological Society of America 85th Annual Meeting, Snowbird, Utah, August 6-10, 2000 (2000).

Sedivy, R.A., and Hansen, J., "Results of the Stage I Investigation of the Agricultural/Environmental Enhancement Pilot Program at Utica, Nebraska," presentation to the Utica Village Board, Utica, Nebraska, February 7, 2000.

Sedivy, R.A., and Hansen, J., "Update on CCC/USDA Investigations at Utica, Nebraska, and the North Lake Basin Wildlife Management Area," presentation to the U.S. Fish and Wildlife Service and the Nebraska Game and Parks Commission, York, Nebraska, May 4, 2000.

Sedivy, R.A., Walker, J., and Hansen, J., “Issues Relating to the Village of Raymond’s Municipal Water Supply Improvement Project and the CCC/USDA Proposed Groundwater Cleanup,” presentation to the Raymond Village Board and the Nebraska Department of Environmental Quality, Raymond, Nebraska, March 8, 2000.

Sedivy, R.A., Walker, J., and Hansen, J., “Summary of Site Investigations and Proposed Groundwater Restoration Activities at Raymond, Nebraska,” presentation to the Nebraska Department of Health and Human Services, Lincoln, Nebraska, March 30, 2000.

Shafer, J.M., Walker, J.L., Sedivy, R.A., Burton, J.C., Nashold, B.W., and Dennis, C.B., “Solute Transport Modeling and 3-D Visualization as the Basis for Long-Term Groundwater Monitoring Recommendations at Murdock, Nebraska,” Third International Symposium on Integrated Technical Approaches to Site Characterization, Argonne National Laboratory, Argonne, Illinois, September 12-14, 2000.

Shannon, J.D., “Examining Emissions Policy Issues with an Integrated Assessment Model,” 11th Joint Conference on the Applications of Air Pollution Meteorology of the Air and Waste Management Association and the American Meteorological Society, Long Beach, California, January 11, 2000.

Sisterson, D.L., “ARM Operations Reorganization,” ARM Coordination Meeting and ARM Science Team Executive Committee Meeting, U.S. Department of Energy, Seattle, Washington, August 8 and 10, 2000.

Sisterson, D.L., “ARM Program,” Global Change Education Program Orientation, Tulane University, New Orleans, Louisiana, June 13, 2000.

Sisterson, D.L., “Climate Change,” Rotary Club of Woodridge, Woodridge, Illinois, December 21, 1999.

Sisterson, D.L., “Is Climate Changing?” Service to Mankind (SERTOMA) Organization Club Meeting, Crestwood, Illinois, March 7, 2000.

Sisterson, D.L., “Meteorology,” Foundations of Science Workshop, Argonne National Laboratory, Argonne, Illinois, June 26, 2000.

Sisterson, D.L., “Science and Education,” Argonne Community of Teachers, Argonne National Laboratory, Argonne, Illinois, September 25, 2000.

Sisterson, D.L., “Storm Wars and Climate Change,” Hinsdale Senior Men’s Club, Hinsdale, Illinois, October 13, 1999.

Sisterson, D.L., “The Science of Climate Change,” Argonne Community Roundtable, Argonne National Laboratory, Argonne, Illinois, September 13, 2000.

Sisterson, D.L., “Tornadoes and Severe Weather,” Jeerling Junior High School, Orland Park, Illinois, April 19, 2000.

Sisterson, D.L., “Weather and Science: Severe Weather,” Churchville Middle School, Elmhurst, Illinois, May 26, 2000.

Song, J., and Wesely, M.L., "Estimating Root-Zone Moisture and Evapotranspiration with AVHRR Data," Association of American Geographers 96th Annual Meeting, Pittsburgh, Pennsylvania, April 8, 2000.

Song, J., and Wesely, M.L., "Estimating Root-Zone Moisture and Evapotranspiration with AVHRR Data," 15th Conference on Hydrology, American Meteorological Society, Long Beach, California, January 13, 2000.

Song, J., and Wesely, M.L., "Using Remote Sensing Data to Infer Root-Zone Moisture and Evapotranspiration," 50th Annual Meeting of the West Lakes Division of the Association of American Geographers, Northern Illinois University, DeKalb, Illinois, October 1, 1999.

Spokas, K., and LaFreniere, L., "Stronger Pore Pressure Cone Design and Effect of Filter Material on Collected Data in CPTU Testing," Third International Symposium on Integrated Technical Approaches to Site Characterization, Argonne National Laboratory, Argonne, Illinois, September 12-14, 2000.

Stroud, J.R., Lesht, B.M., Stein, M., Meng, X.-L., Welty, L., Frederick, J.E., and Leshkevich, G.A., "Space-Time Modeling of Lake Michigan Chlorophyll Levels Estimated from Satellite Observations," 43rd Conference of the International Association for Great Lakes Research, Cornwall, Ontario, Canada, May 26, 2000.

Stroud, J.R., Lesht, B.M., Stein, M., Meng, X.-L., Welty, L., Frederick, J.E., and Leshkevich, G.A., "Spatio-Temporal Modeling of Lake Michigan Chlorophyll Levels, Workshop on Hierarchical Modeling in Environmental Statistics," The Ohio State University, Columbus, Ohio, May 14, 2000.

Sturchio, N.C., "Isotopic Insights to Chlorinated Solvents in Groundwater," Department of Earth and Environmental Sciences, University of Illinois, Chicago, Illinois, December 2, 1999.

Sturchio, N.C., "Revelations at Mineral-Fluid Interfaces with Synchrotron X-ray Scattering," Seminar, Department of Geological and Environmental Sciences, Northern Illinois University, DeKalb, Illinois, September 29, 2000.

Sturchio, N.C., Fenter, P., and Teng, H.H., "New Evidence of Orthoclase Dissolution Mechanisms by *In Situ* X-ray Reflectivity and Atomic Force Microscopy," Goldschmidt 2000, Oxford, United Kingdom, September 3-8, 2000.

Sturchio, N.C., Fenter, P., Teng, H., Geissbuhler, P., and Nagy, K.L., "*In Situ* X-ray Reflectivity and Atomic Force Microscopy Studies of the Orthoclase-Water Interface," Materials Research Society Spring Meeting, San Francisco, California, April 24, 2000.

Sultan, M., "Acceptance Speech for the Farouk El Baz Award in Desert Research," Geological Society of America Annual Meeting, Quaternary Division, Denver, Colorado, October 26, 1999.

Sultan, M., "Applications of Remote Sensing in Geology, Hydrology, Seismic Hazards, and Land Use: Case Studies from Northeast Africa and Arabia," Department Seminar, Idaho State University, Pocatello, Idaho, March 2000.

Sultan, M., "Environmental Problems and Solutions: A Case Study from Egypt," Department of Geography, Northern Illinois University, DeKalb, Illinois, October 8, 1999.

Sultan, M., "Vision, Strategy, and Action: Development of an Environmental Research Center," Desert Research Center, Las Vegas, Nevada, May 16, 2000.

Sultan, M., and Gheith, H., "Assessment of the Renewable Groundwater Resources of the Eastern Desert, Egypt: Chemical, Isotopic, and Surface Water Modeling Constraints," Advances in Environmental Science Seminar Series, Chicago, Illinois, November 2, 1999.

Wei, C.-F., Kotamarthi, V.R., Ogunsola, O.J., Wuebbles, D.J., Brasseur, G.P., Blake, D.R., Brune, W.H., Browell, E.V., Avery, M.A., Sachse, G.W., and Sandholm, S.T., "Seasonal Variability of Ozone Mixing Ratios and Budgets in the Tropical Southern Pacific: A GCTM Perspective," The NASA/GTE Pacific Exploratory Mission B (PEM-Tropics B) III Posters, Spring Meeting, American Geophysical Union, Washington, D.C., June 1, 2000.

Wei, C.-F., Kotamarthi, V.R., Ogunsola, O.J., Wuebbles, D.J., Brasseur, G.P., Blake, D.R., Brune, W.H., Browell, E.V., Avery, M.A., Sachse, G.W., and Sandholm, S.T., "Seasonal Variability of Ozone Mixing Ratios and Budgets in the Tropical Southern Pacific: A GCTM Perspective," Second Data Workshop on PEM-TROPICS B, National Aeronautics and Space Administration, Hampton, Virginia, May 15, 2000.

Wesely, M.L., "On the Dry Deposition of Submicron Particles," Symposium on the Atmospheric Chemistry Issues in the 21st Century, American Meteorological Society, Long Beach, California, January 12, 2000.

Wesely, M.L., "Research Priorities in DOE's Atmospheric Chemistry Program," Community Review Meeting, Commission on Atmospheric Chemistry and Global Pollution, International Global Atmospheric Chemistry Project, Aspen, Colorado, May 1, 2000.

Wesely, M.L., "Update on Status of AmeriFlux Site in the Walnut River Watershed," AmeriFlux 1999 Annual Meeting, U.S. Department of Energy, Denver, Colorado, October 26, 1999.

Wesely, M.L., and Xu, Y., "Parameterization and Modeling of Dry Deposition and Biogenic Emissions," Annual Science Meeting, Atmospheric Chemistry Program, U.S. Department of Energy, Alexandria, Virginia, November 30-December 2, 1999.

Wesely, M.L., Coulter, R.L., and Song, J., "Evapotranspiration and Soil Moisture Estimates in the Walnut River Watershed," Land Surface Hydrology Program Investigators Meeting, National Aeronautics and Space Administration, Columbia, Maryland, November 2, 1999.

Wesely, M.L., Kotamarthi, V.R., and Xu, Y., "On the Effects of Fast Chemical Reactions on the Vertical Fluxes of NO and NO<sub>2</sub> in the Atmospheric Surface Layer," 24th Conference on Agricultural and Forest Meteorology, American Meteorological Society, Davis, California, August 17, 2000.

Wesely, M.L., Shannon, J.D., and Doskey, P.V., "Gaseous Deposition Described with the Industrial Source Complex Model," 11th Joint Conference on the Applications of Air Pollution Meteorology of the Air and Waste Management Association and the American Meteorological Society, Long Beach, California, January 11, 2000.

Wesely, M.L., Xu, Y., Song, J., McMillen, R.T., and Meyers, T.P., "Effects of Soil Moisture Variations on Deposition Velocities above Vegetation," Sixth International Conference on Air-Surface Exchange of Gases and Particles, Edinburgh, Scotland, July 3, 2000.

Westwater, E., Stankov, B., Han, Y., Shaw, J., Long, C.N., and Lesht, B.M., "ARM Microwave Radiometers and Radiosondes in Nauru99," Atmospheric Radiation Measurement Science Team Meeting, U.S. Department of Energy, San Antonio, Texas, March 16, 2000.

Wuebbles, D.J., Kotamarthi, V.R., and Wei, C.-F., "Significance of Long-Range Transport from Continental Locations in Determining Oxidant Mixing Ratios and Budgets over the Tropical Pacific Ocean," International Symposium on Measurement of Toxics and Related Air Pollutants, Air and Waste Management Association and U.S. Environmental Protection Agency, Research Triangle Park, North Carolina, September 13, 2000.

Zachara, J., Fredrickson, J., Szecsody, J., Lovely, D., and Kemner, K.M., "Solubilization of Radionuclides and Metals by Iron Reducing Bacteria," Natural and Accelerated Bioremediation Meeting, DOE Office of Biological and Environmental Research, Washington, D.C., January 31-February 2, 2000.

## 7. Patents Issued

None.