

David Allen Gay

Illinois State Water Survey

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Education

- Ph.D. Environmental Sciences (concentration in Climatology), University of Virginia, Charlottesville, 1996. Dissertation: *Variation of Rural, Western U.S. Visibility and Aerosol Characteristics under Different Synoptic Conditions* (Dr. Robert E. Davis, advisor).
- M.S. Environmental Sciences (concentration in Atmospheric Sciences), Washington State University, Pullman, 1987. Thesis: *A National Inventory of Biogenic Hydrocarbon Emissions Based upon a Simple Forest Canopy Model* (Dr. Brian Lamb, advisor).
- B.S. Environmental Sciences (concentration in Water Quality, Chemistry, Statistics), McNeese State University, Lake Charles, LA, 1985.

Professional Experience

Research Scientist and Coordinator, National Atmospheric Deposition Program, Illinois State Water Survey. Primary duties include project management of a five-network system (380 sites), including budgeting and expenses, and supervision of two laboratories and thirty employees. January 2008 to present.

Associate Research Scientist, Center for Atmospheric Science, Illinois State Water Survey. Primary duties included research project administration, data quality assurance and analysis, and statistics. Group research function is atmospheric monitoring of air pollutants and climate, atmospheric chemistry, etc. **National Atmospheric Deposition Network's Assistant Coordinator**. Responsible for the Mercury Deposition Network. Primary duties included management of network and employees, day-to-day operation of network. May, 2003 to May, 2007.

Self-Employed Business Owner Owned and operated the Mountain Handcrafts Co. Primary duties included day-to-day operations, budgets, bookkeeping, management, and purchasing. April 1996 to May 2003.

Adjunct Instructorships

Arkansas Governor's School, Hendrix College, Conway, Summer 2002.

Natural Sciences faculty. Competitive six-week academic program for gifted and talented students. (www.hendrix.edu/ags/)

North Arkansas College, Harrison, Fall 2002. Introduction to Astronomy and Laboratory (freshman level).

Crowder College, Neosho, MO, Spring 2002. Environmental Science and Laboratory (Internet classroom); Spring 2001. Environmental Science and Laboratory (two sections; Internet classroom); Physical Geology and Laboratory (freshman level); one semester, full-time replacement contract.

Assistant Research Professor, Tree Ring Laboratory, Department of Geography, University of Arkansas, Fayetteville. Half-time research position (statistics and climatology), over three periods (October 1996 to May 1997; October 1997 to May 1998; October 1998 to January 1999).

Assistant Lecturer, University of North Carolina, Charlotte. Two one-year contracts. Introductory Atmospheric Interactions (Physical Geography, freshman level, four sections); Soil Science and Laboratory (junior level, four sections); Synoptic Meteorology and Laboratory (junior level, two sections); Senior Synoptic Meteorology Independent Study (two sections). August 1994 to June 1996.

Research and Teaching Assistant, University of Virginia. Climate and air quality research, four sections of Atmosphere and Weather Laboratory. June 1990 to May 1994.

Environmental Scientist CH₂M Hill, Inc. (Engineering), Portland, OR, July 1987 to June 1990; part time from June 1990 to June 1992. Responsible for numerical modeling (UNIMAP); emission rate estimates; meteorological monitoring and analyses; air sampling for criteria pollutants; hazardous waste ambient air sampling (evacuated canisters, absorbent traps); proposal and report writing; data gathering, accuracy checks and presentation; quality assurance plans. Hazardous waste trained and experienced. Clients included both industry and government.

Research

Publications in Refereed Journals:

Submitted Work:

Zhang, L., Z. Wu, I. Cheng, L. P. Wright, M. L. Olson, and D.A. Gay. Six-year mercury dry deposition estimates to various land covers surrounding monitoring sites in North America. In preparation for submittal to the Proceedings of the National Academy of Sciences, July 2016.

Felix, J. David, E. M. Elliott, D. A. Gay. Spatial and temporal patterns of nitrogen isotopic composition of ammonia at U.S. ammonia monitoring network sites. In preparation for submission to Atmospheric Environment, May 2016.

Gay, D.A., E. Prestbo, & B. Kerschner. Distinct Differences in Precipitation Mercury Concentrations Between Urban and Rural Environments/Measurements. For submission to Environmental Science & Technology, January, 2015.

Olson, M.A., D.A. Gay, & E. Prestbo. Quality Assurance Measurements of the Tekran Mercury Measurement System. For submission to Environmental Science & Technology, July, 2015.

Published Work:

Li, Y., B.A. Schichtel, J. Walker, D.B. Schwede, D. Chen, C. Lehmann, M. Puchalski, D.A. Gay, and J.L. Collett. The Increasing Importance of Deposition of Reduced Nitrogen in the United States. Published in the Proceedings of the National Academy of Sciences of the United States of America, online, May 9, 2016.

Weiss-Penzias, P., D.A. Gay, M. E. Brigham & A. ter Schure, Spatial and Temporal Trends of Mercury Wet Deposition in the U.S. and Canada from the Mercury Deposition Network Sites. Published online, Science of the Total Environment, Jan. 2016.

- Lehmann, C.M.B., B.M. Kerschner, and D.A. Gay, 2015. Impacts Sulfur Dioxide (SO₂) and Nitrogen Oxides (NO_x) Emissions Reductions on Acidic Deposition in the United States. *EM* July, 2015, pp 6-11.
- Brigham, M.E., M.B. Sandheinrich, D.A. Gay, R.P. Maki, D.P. Krabbenhoft, and J.G. Wiener, 2014. Lake responses to decreasing wet mercury deposition rates—results from a case study in northern Minnesota. *Environmental Science and Technology* 48 (11): 6115–6123, DOI: 10.1021/es500301a.
- Levengood, J.M., R.V. Smith, D.A. Gay, M.A. Davis, and J.D. Stafford, 2014. Mercury in Shorebirds at Migratory Stopover Sites in the Illinois River Valley. *Waterbirds* 37(2): 225-229. doi: <http://dx.doi.org/10.1675/063.037.0212>.
- Risch, M. R., D. M. Kenski, and D. A. Gay, 2014. A Great Lakes Atmospheric Mercury Monitoring Network: Evaluation and Design. *Atmospheric Environment* 85: 109-122. <http://dx.doi.org/10.1016/j.atmosenv.2013.11.050>.
- Gay, D.A., D. Schmeltz, E. Prestbo, M. Olson, T. Sharac, and R. Tordon, 2013. The Atmospheric Mercury Network: Examination of a long-term atmospheric mercury record across North America. *Atmospheric Chemistry & Physics* 13: 11339–11349, doi:10.5194/acp-13-11339-2013.
- Hansen, A. M., and D. A. Gay, 2013. Observations of Mercury Wet Deposition in Mexico. *Environmental Science and Pollution Research* 20: 8316-8325, doi: 10.1007/s11356-013-2012-3 2013.
- Levengood, J.M., D. J. Soucek, C. A. Taylor, D. A. Gay, 2013. Mercury in Small Illinois Fishes: Historical Perspectives and Current Issues. *Environmental Monitoring and Assessment: Volume 185*(8): 6485-6494.
- Drenner, R.W., M. M. Chumchal, C. M. Jones, C. M. B. Lehmann, D. A. Gay, D. I. Donato, 2013. Effects of Mercury Deposition and Coniferous Forests on the Mercury Contamination of Fish in the South Central United States. *Environmental Science and Technology* 47: 1274–1279, DOI: dx.doi.org/10.1021/es303734n.
- Wetherbee, G.A., Gay, D.A., Debey, T.M., Lehmann, C.M.B., and Nilles, M.A., 2012. Fission Products in National Atmospheric Deposition Program Wet Deposition Samples Following the Fukushima Dai-ichi Nuclear Power Station Incident, March 8 - April 5, 2011. *Environmental Science and Technology* 46 (5) 2574–2582, doi: 10.1021/es203217u.

- Steffen, A., Scherz, T., Olson, M., and Gay, D.A., 2012. Atmospheric mercury measurement data: quality control and assurance protocols for data standardization. *Journal of Environmental Monitoring* 14 (February): 752-765, doi:10.1039/c2em10735j.
- Zhang, L., P. Blanchard, D.A. Gay, E.M. Prestbo, M.R. Risch, D. Johnson, J. Narayan, R. Zsolway, T.M. Holsen, E.K. Miller, M.S. Castro, J.A. Graydon, V.L. St. Louis, J. Dalziel, 2012. Estimation of speciated and total mercury dry deposition at monitoring locations in eastern and central North America. *Atmospheric Chemistry and Physics* 12: 4327-4340, doi:10.5194/acp-12-4327-2012.
- Wiener, J.G., D. C. Evers, D. A. Gay, H. A. Morrison, and K. A. Williams, 2012. Mercury in the Laurentian Great Lakes Region: Introduction and Overview. *Environmental Pollution* 161(February): 243–251.
- Zhang, L., P. Blanchard, D. Johnson, A. Dastoor, A. Ryjkov, J.C.H. Lin, K. Vijayaraghavan, D. Gay, T. Holsen, J. Huang, J. Graydon, V.L. St. Louis, M.S. Castro, E.K. Miller, F. Marsik, J. Lu, L. Poissant, M. Pilote, and K.M. Zhang, 2012. Analysis of Modeled Mercury Dry Deposition over the Great Lakes Region. *Environmental Pollution* 161(February): 272–283.
- Risch, M.R., D. A. Gay, K. K. Fowler, G. L. Keeler, P. Blanchard, S. Backus, J. Barres, and J. T. Dvonch, 2012. Spatial Patterns and Temporal Trends in Mercury Concentrations, Precipitation, and Mercury Wet Deposition in the North American Great Lakes Region, 2002-2008. *Environmental Pollution* 161(February): 261–271.
- Puchalski, M., Sather, M.E., Walker, J.T., Mathew, J., Robarge, W.P., Lehmann, C., Gay, D.A., Mathew, J., and Robarge, W., 2011. Passive Ammonia Monitoring in the United States: Comparing Three Different Sampling Devices. *Environmental Monitoring* 13: 3156 - 3167.
- Isard, S. A., Barnes, C. W., Hambleton, S., Ariatti, A., Russo, J. M., Tenuta, A., Gay, D. A., and Szabo, L. J. 2011. Predicting soybean rust incursions into the North American continental interior using crop monitoring, spore trapping, and aerobiological modeling. *Plant Disease* 95:1346-1357.
- Schmeltz, D., Evers, D., Driscoll C.T., Artz, R., Cohen, M., Gay, D.A., Haeuber, R., Krabbenhoft D., Mason, R., Masson, G., Morris, K., and Wiener, J.G., 2011. MercNet: A National Monitoring Network to Assess Responses to Changing

Mercury Emissions in the United States. *Environmental Toxicology* 20: 1713–1725, DOI 10.1007/s10646-011-0756-4.

Chalmers, A., D. Argue, D. A. Gay, M. Brigham, D. Lorenz, and C. Schmitt, 2010. Mercury Trends in Fish Tissue from Streams and Lakes in the United States, 1969 – 2005. *Environmental Monitoring and Assessment* 175:175–191. DOI 10.1007/s10661-010-1504-6.

Tao, Z., D. Malvick, R. Claybrooke, C. Floyd, C. Bernacchi, G. Spoden, J. Kurle, D. Gay, V. Bowersox, and S. Krupa, 2009. Predicting the Risk of Soybean Rust in Minnesota. *International Journal of Biometeorology* 53(6): 509-521, DOI 10.1007/s00484-009-0239-y.

Prestbo, E. M., and D. A. Gay, 2009. Wet Deposition of Mercury in the U.S. and Canada, 1996-2005: Results and Analysis of the NADP Mercury Deposition Network (MDN). *Atmospheric Environment* 43 (September): 4223–4233.

Wetherbee, G.A., D.A. Gay, R.C. Brunette, and C.W. Sweet, 2007. Estimated Variability of National Atmospheric Deposition Program / Mercury Deposition Network Measurements Using Collocated Samplers. *Environmental Monitoring & Assessment* 131: 49-69. DOI 10.1007/s10661-006-9456-6.

Stahle, D., M. Cleaveland, D. Blanton, M. Therrell, and D. Gay, 1998. The Lost Colony and Jamestown Droughts. *Science* 280: 564-567.

Stahle, D., Arrigo, Krusic, Cleaveland, Cook, Allan, Cole, Dunbar, Therrell, Gay, Moore, Stokes, Burns, Villanueva-Diaz, and Thompson, 1998. Experimental Dendroclimatic Reconstruction of the Southern Oscillation. *Bulletin of the American Meteorological Society* 79 (#10): 2137 -2152.

Davis, R., B. Hayden, D. Gay, W. Phillips, G. Jones, 1997. The North Atlantic Subtropical Anticyclone. *Journal of Climate* 10 (4): 728 - 744.

Michaels, P., P. Knappenberger, and D. Gay, 1995. "Predicted and Observed Long Night and Day Temperature Trends. *Atmospheric Research*, 37 (1-3): 257-266. Also published in *Asymmetric Change of Daily Temperature Range* (Kukla, G., ed.), U.S. Department of Energy, College Park, MD, pp. 399-413.

Davis, R., and D. A. Gay, 1994. Response to 'Second Response to Comments on "A Synoptic Climatological Analysis of Air Quality in the Grand Canyon National Park" '. *Atmospheric Environment* 28A (5): 632-638.

Davis, R., and D. A. Gay, 1994. Response to 'Comments on "A Synoptic Climatological Analysis of Air Quality in the Grand Canyon National Park," '. Atmospheric Environment 28A (5): 619-623.

Gay, D.A., and R. Davis, 1993. Freezing Rain and Sleet for the Southeastern U.S.A. Climate Research 3: 209-220. Also published in the Research Paper Series (#052593), Southeast Regional Climate Center, Columbia, SC.

Davis, R., and D. A. Gay, 1993. An Assessment of Air Quality Variations in the Southwestern USA using an Upper Air Synoptic Climatology. International Journal of Climatology 13: 755-781.

Davis, R., and D.A. Gay, 1993. A Synoptic Climatological Analysis of Air Quality in the Grand Canyon National Park. Atmospheric Environment 27A (5): 713-727.

Lamb, B., D.A. Gay, H. Westberg, and T. Pierce, 1993. A Biogenic Hydrocarbon Emission Inventory for the U.S.A. using a Simple Forest Canopy Model. Atmospheric Environment 27A (11): 1673-1690.

Lamb, B., A. Guenther, D. Gay, and H. Westberg, 1987. A National Inventory of Biogenic Hydrocarbons. Atmospheric Environment 21: 1695-1705. An 2008 Haagen-Smit Prize winner (<http://geo.arc.nasa.gov/sgg/singh/>).

Other Journal Publications:

Lehmann, C.M.B., and D.A. Gay, 2011. "Monitoring Long-Term Trends of Acidic Wet Deposition in US Precipitation: Results from the National Atmospheric Deposition Program", Power Plant Chemistry 13: 386-393.

Conference Proceedings:

Gay, D. A., E. P. Prestbo "Monitoring of Mercury in Precipitation: Methods and Results Across the Midwest", Proceedings of the 29th Annual Electric Utility Chemistry Workshop at the University of Illinois, Champaign, IL, June 2009.

Lehmann, C. M. B., D. Gay, M. Nilles "Comparison of Non-Parametric Methods for Assessing Trends in Mercury Wet Deposition", Proceedings of the 100th Ann. Meet. Of the Air & Waste Mgmt. Assoc., Pittsburgh, PA, June 2007, #566.

Kenski, D., D. A. Gay "Issues in Ammonia and Nitric Acid Measurements: Experiences in the Midwest," AWMA Symposium on Air Quality Measurement Methods and Technology, AWMA Specialty Conference, San Francisco, April 19-21, 2005.

Kenski, D., D. A. Gay, and S. Fitzsimmons "Ammonia and Its Role in Midwestern Haze," *Proceedings from the Regional and Global Perspectives on Haze*", AWMA Specialty Conference, October 25 -29, 2004, Asheville, NC.

Williams, A., M. Caughey, D. Gay, Sweet, C., Dasgupta, S., and R. Ullah " Semi-Continuous Measurements of Ambient Gas and Aerosol Components", 97th Annual Air and Waste Management National Conference, Indianapolis, June 22, 2004.

Reports/Other:

2014 National Atmospheric Deposition Program Map Summary, 2015. The annual report for the National Atmospheric Deposition Program, 24 pp, September 2015.

Morris, K., A. Mast, D. Clow, G. Wetherbee, J. Baron, C. Taipale, T. Blett, D. Gay, and J. Heath. 2015. 2013 monitoring and tracking wet nitrogen deposition at Rocky Mountain National Park: July 2015. Natural Resource Report NPS/NRSS/ARD/NRR—2014/757. National Park Service, Denver, Colorado.

2013 National Atmospheric Deposition Program Map Summary, 2014. The annual report for the National Atmospheric Deposition Program, 24 pp, September 2014.

Morris, K., A. Mast, D. Clow, G. Wetherbee, J. Baron, C. Taipale, T. Blett, D. Gay, and J. Heath. 2014. 2012 monitoring and tracking wet nitrogen deposition at Rocky Mountain National Park: January 2014. Natural Resource Report NPS/NRSS/ARD/NRR—2014/757. National Park Service, Denver, Colorado.

2012 National Atmospheric Deposition Program Map Summary, 2013. The annual report for the National Atmospheric Deposition Program, 24 pp, September 2013.

Morris, K., A. Mast, D. Clow, G. Wetherbee, J. Baron, C. Taipale, T. Blett, D. Gay, and E. Richer. 2013. 2011 monitoring and tracking wet nitrogen deposition at Rocky Mountain National Park. Natural Resource Report NPS/NRSS/ARD/NRR—2012/562. National Park Service, Denver, Colorado.

Wetherbee, G.A., Gay, D.A., Debey, T.M., Lehmann, C.M.B., and Nilles, M.A., 2012. Fission Products in National Atmospheric Deposition Program Wet Deposition Samples Following The Fukushima Dai-ichi Nuclear Power Station Incident, March 8 - April 5, 2011. U.S. Geological Survey Open-File Report 2011-1277, 34pp.

2011 National Atmospheric Deposition Program Map Summary, 2012. The annual report for the National Atmospheric Deposition Program, 24 pp, Summer 2012.

- Morris, K., A. Mast, D. Clow, G. Wetherbee, J. Baron, C. Taipale, T. Blett, D. Gay, and E. Richer. 2012. 2010 monitoring and tracking wet nitrogen deposition at Rocky Mountain National Park: August 2012. Natural Resource Report NPS/NRSS/ARD/NRR—2012/562. National Park Service, Denver, Colorado.
- Evers, D.C., Wiener, J.G., Driscoll, C.T., Gay, D.A., Basu, N., Monson, B.A., Lambert, K.F., Morrison, H.A., Morgan, J.T., Williams, K.A., Soehl, A.G. 2011. Great Lakes Mercury Connections: The Extent and Effects of Mercury Pollution in the Great Lakes Region. Biodiversity Research Institute. Gorham, Maine. Report BRI 2011-18, 44 pages.
- Morris, K., A. Mast, D. Clow, G. Wetherbee, J. Baron, C. Taipale, T. Blett, D. Gay, and E. Richer. 2011. 2009 monitoring and tracking wet nitrogen deposition at Rocky Mountain National Park: September 2011, Natural Resource Report NPS/NRSS/ARD/NRR-2011/442. National Park Service, Denver, Colorado.
- 2010 National Atmospheric Deposition Program Map Summary, 2011. The annual report for the National Atmospheric Deposition Program, 24 pp, Summer 2011.
- 2009 National Atmospheric Deposition Program Map Summary, 2010. The annual report for the National Atmospheric Deposition Program, 20 pp, Summer 2010.
- 2008 National Atmospheric Deposition Program Map Summary, 2010. The annual report for the National Atmospheric Deposition Program, 20 pp, Summer 2009.
- Gay, D.A., and M. Caughey. Progress Report for the EPA/LADCO Pilot Project: Monitoring Ambient Ammonia Using Passive Diffusion Samplers, April 2008, 20pp.
- 2007 NADP Map Summary. The annual report for the National Atmospheric Deposition Program, 16 pp, Summer 2008.
- Caughey and Gay, 2006. For: State of Oklahoma, "Results of a Year-long Project Monitoring Ambient Ammonia, Nitric Acid and Sulfur Dioxide at Holdenville and Seiling, OK," 15 pp.
- Caughey and Gay, 2006. For CENRAP Project Report and Data Set, "CENRAP Project Report: Monitoring Ambient Ammonia and Related Compounds in the Midwest, 2003-2006," August 31, 2006. 94 pp.
- Gay, Tao, & Bernacchi, 2006. "Soybean Rust Early Warning System Draft Users Manual", 15 pp.
- Gay, D. A. "Monitoring Mercury Deposition, a Key Tool to Understanding the Link between Emissions and Effects," National Atmospheric Deposition Network Publication (IEM 2005-03 and NADP 2005-01).
- Gay, D. A. Quality Assurance Project Plan, Jan 2004. Ammonia Monitoring in the Midwest, 170 pp.

Presentations:

- Gay, D.A., and M. Risch “Deposition of Mercury at the Earth’s Surface”. An invited talk at the Gwangju Institute of Science and Technology (GIST), February 18, 2014, Gwangju , Republic of Korea.
- Gay, D.A., “The Atmospheric Mercury Network: Examination of a long-term atmospheric mercury record across North America”, Given to the International Conference on Mercury as a Global Pollutant, Edinburgh, Scotland, July 28- Aug 3, 2013.
- Gay, D.A., and M. Risch, “Continuous Monitoring of Pollution in the Nation’s Precipitation”. An invited talk for the Indiana Watersheds Webinar Series, an outreach sponsored by Purdue University, (<https://engineering.purdue.edu/watersheds/webinars/2013/>). Online, July 2013.
- Gay, D.A., and S. Weir, “Current Mercury Monitoring Approaches in Tribal Country”. An invited talk at the National Tribal Forum, April 30th to May 2nd, 2013, Fountain Hills, Arizona.
- Gay, D.A., and M. Risch, “Continuous Monitoring of Pollution in the Nation’s Precipitation”. An invited talk at the Indiana Water Monitoring Council, April 2nd, 2013, Indianapolis, Indiana.
- Gay, D.A., and S. Weir, “Current Mercury Monitoring Approaches in Tribal Country”. Given at the Atmospheric Mercury Workshop for American Tribal members, Haskell University, September 25, 2013, Lawrence Kansas.
- Gay, D. A., “Ecotoxicology of the Northern Hemisphere“. An invited lecture to the University of Illinois’s Veterinary Sciences 551 class, Dr. Jeff Levenson (INHS), instructor, Sept. 17, 2013.
- Gay, D. A., “The NADP Ammonia Monitoring Network (NADP/AMoN): A Simple Approach to Atmospheric Ammonia Monitoring”, given at the American Society of Agronomy, Crop Science Society of America, and Soil Science Society of America Annual Meeting in Cincinnati, OH- Oct. 21 - Oct. 24, 2012. <https://www.acsmeetings.org/>
- Gay, D. A., G. A. Wetherbee, T. M. Debey, C. M.B. Lehmann, and M. A. Nilles, “Measurements of Fission-Product Wet Deposition to North America from the Fukushima Dai-ichi Incident by the National Atmospheric Deposition Program”. An invited talk given at the 2012 Nuclear Energy Institute’s RETS-REMP Workshop, June 25 – June 27, 2012. Orlando, Florida.
- Gay, D.A., and M. Risch “Atmospheric Deposition: Loadings and Trends.” An invited talk at the Mercury Science in the Great Lakes Workshop, May 30-31, 2012, Chicago, IL.
- Gay, D.A., “An Introduction to The National Atmospheric Deposition Program”, EPA sponsored National Air Quality Conference- 2012 Ambient Monitoring, May 14-17, 2012, Denver, CO. Two posters were given at the same conference, “The NADP’s Mercury Deposition Network: lessons from a continental-scale monitoring network.”, and M. Olson, D. Gay, D. Schmeltz, T. Sharac, T. Bergerhouse, E. Prestbo, “Atmospheric Mercury Network (AMNet): Operation and Data”
- Gay, D.A., “Wet Deposition of Pollutants in the Midwest”, 1-hour lecture for agricultural professionals. Soil and Water Management Seminar, for University of Illinois Agricultural Extension, February 16, 2012, teleconference.
- C. Lehmann, L. Green, T. Dombek, and D. Gay, Determination of Bromide in NADP/NTN Wet Deposition Samples and its Spatial and Temporal Correlation with North American Mercury Wet Deposition, Given at the 2011 NADP Scientific Symposium, October 26-27, 2011, Providence, Rhode Island.
- Gay, D.A., “Comprehensive National Mercury Monitoring Act”, congressional staff briefing on the benefits of the Senate Bill 1183, sponsored by Senators Collins and Cardin, June 15, 2011.

- Gay, D.A., "Measurement of Fission Product Activity in NADP Samples," Inter-Tribal Environmental Council, June 28-29, 2011, Tulsa OK.
- Wetherbee, G.A., D. A. Gay, T. M. Debey, C. M. B. Lehmann, and M. A. Nilles, Reactor Fission Product Fallout in North American Wet-Deposition Samples, from the March 11, 2011 Fukushima Dai-ichi Incident. Given at the 2011 NADP Scientific Symposium, October 26-27, 2011, Providence, Rhode Island.
- Puchalski, M., M. Sather, J. Walker, C. Lehmann, D. Gay, J. Mathew, W. Robarge, Passive Ammonia Monitoring in the United States: Comparing Three Different Sampling Devices. Given at the 2011 NADP Scientific Symposium, October 26-27, 2011, Providence, Rhode Island. (poster)
- Olson, M., T. Sharac, D. Gay, D. Schmeltz, and E. Prestbo, National Atmospheric Deposition Program's Atmospheric Mercury Network. Given at the 2011 NADP Scientific Symposium, October 26-27, 2011, Providence, Rhode Island. (poster)
- Morris, K., A. Mast, D. Clow, G. Wetherbee, J. Baron, C. Taipale, T. Blett, D. Gay, and E. Richer, "You've determined the critical load: now what? Tracking progress at Rocky Mountain National Park using NADP data". Given at the 2011 NADP Scientific Symposium, October 26-27, 2011, Providence, Rhode Island. (poster)
- Gartman, N., L. Green, C. Lehmann, B. Riney, S. Henson, M. Rhodes, and J. Walker, "Ammonia Monitoring Network (AMoN) Blank Study". Given at the 2011 NADP Scientific Symposium, October 26-27, 2011, Providence, Rhode Island. (poster)
- Prestbo, E., D. Gay, M. Olson, W. Luke, P. Kelly, D. Felton, T. Holsen, J. Huang, H.D. Choi, "An Analysis of Co-located Atmospheric Mercury Speciation data from AMNet". Given at the 2011 NADP Scientific Symposium, October 26-27, 2011, Providence, Rhode Island. (poster)
- Gay, D.A. "An Overview of the Mercury Deposition Network in the US & Upper Midwest", given at the Focus on Energy Biomass Study Coordination Meeting, Madison WI, November 23, 2010.
- Gay, D.A., E. Prestbo, and D. Schmeltz, "Introduction to the National Atmospheric Deposition Program's AMNet", Invited speaker for the Scientific Advisory Board (SAB) of the Global Mercury Observation System (GMOS) Kickoff Meeting, Rome, Italy, November 17 to 19, 2010.
- Gay, D.A. "Mercury Monitoring in Precipitation Across the North America: Input of Mercury to Lakes", and poster "NADP's Mercury Deposition Network: lessons from a continental-scale monitoring network", North American Lake Management Society, 2010 International Symposium, Oklahoma City, Oklahoma, November 3-5, 2010.
- Gay, D.A. "Monitoring Ecotoxicological Agents in the Nation's Precipitation." University of Illinois Lecture for Ecotoxicology (Veterinary Sciences, VB 551), September 2, 2010.
- Gay, D.A. et al., Two presentations, a poster, and a panel discussion ("The National Atmospheric Deposition Program: lessons from a continental-scale monitoring network"; "[Panel Discussion: Understanding the Mercury Problem In Tribal Country](#)" and "So, what is Climate Change?"), and a poster ("The North American Atmospheric Mercury Network"), presented at the 2010 National Tribal Science Forum, Traverse City, Michigan, June 4-6, 2010.
- Gay, D.A. "The NADP's Mercury Deposition Network: Lessons from a continental-scale monitoring network", a poster for the 2010 National Monitoring Conference Monitoring From the Summit to the Sea, Denver, Colorado, April 25-29, 2010.
- Gay, D. A and [E. Prestbo](#). "Wet Deposition of Mercury in the United States and Canada, 1996-2005 Results and Analysis of the NADP Mercury Deposition Network (MDN)," a presentation for the Korean Nat'l Institute of Environmental Research, Korea, February 26, 2010.
- Gay, D. A. "Environmental Mercury Monitoring," a presentation for the Urbana (IL) Exchange Club, February 18, 2010.

Gay, D. A. "Atmospheric Mercury Monitoring and Assessment Overview," Briefing for the U.S. EPA's Mercury Monitoring Working Group, EPA Headquarters, Washington D.C., January 15, 2010.

Gay, D.A., E. P. Prestbo, and C. M. B. Lehmann "Mercury Monitoring in Precipitation across the Midwest/Great Lakes Region", along with a poster "Update: NADP Atmospheric Mercury Network (AMNet)" both at the 2009 Mercury Science and Policy Conference in Chicago, Nov. 17-18, 2009.

Gay, D.A. "Monitoring Ecotoxicological Agents in the Nation's Precipitation." University of Illinois Lecture for Ecotoxicology (Veterinary Sciences, VB 551), Nov. 3, 2009.

Prestbo, E. P., D. A. Gay Two presentations at the Air Quality VII Conference, October 26-29, 2009, in Arlington, Virginia. Presentation 1 was "The North American Atmospheric Mercury Speciation Network," and Presentation 2 was "Wet Deposition of Mercury in the United States and Canada, 1996-2005: Results and Analysis of the NADP Mercury Deposition Network (MDN)" as a poster.

Gay, D. A. Two invited presentations including "Mercury Wet Deposition Across North America: Understanding and Monitoring," and "Climate Change on Tribal Lands" a 3-hour training session, with R. K. Hall, D. Mosley, and S. Swanson, at the 17th Annual Region 9 Tribal EPA Conference, October 21 - 23, 2009 in Tucson, Arizona.

Schmeltz, D., R. Artz, G. Lear, and D.A. Gay "Spatial and Temporal Trends in Sulfur and Nitrogen Deposition for the United States", for the Regional Scientific Workshop on Acid Deposition in East Asia 2009, Japan, October 15, 2009.

Gay, D. A., and D. Schmeltz. "Mercury Wet Deposition Across North America: Understanding and Monitoring," at the 14th Annual Pine Barrens Research Forum at Brookhaven National Laboratory, Department of Energy, Berkner Hall, Upton, NY, October 1, 2009.

Gay, D. A., E. P. Prestbo "Mercury Wet Deposition Trends in the West," at the 14th Annual Inter-Tribal Environmental Council Conference, Tulsa, June 16-17, 2009. Invited presentation.

Prestbo, E. P., D. A. Gay Two presentations at the 9th International Conference on Mercury as a Global Pollutant (9th ICMGP), Guiyang City, China, June 7-12, 2009. Presentation 1 was "An Analysis of Recent Atmospheric Mercury Observational Discoveries and Estimates of Dry Deposition to Constrain the Lifetime of Mercury," and Presentation 2 was "Wet Deposition of Mercury in the United States and Canada, 1996-2005: Results and Analysis of the NADP Mercury Deposition Network (MDN)."

Prestbo E. P., D. Gay, D. Schmeltz, T. Sharac, and M. Olson "The North American Atmospheric Mercury Speciation Network," a poster at the 9th International Conference on Mercury as a Global Pollutant (9th ICMGP), Guiyang City, China, June 7-12, 2009.

Gay, D. A., and E. P. Prestbo "Monitoring of Mercury in Precipitation: Methods and Results across the Midwest," at the 29th Annual Electric Utility Chemistry Workshop at the University of Illinois, Champaign, June 3, 2009.

Gay, D. "Annual Assessment and Overview of the NADP," Invited talk for the North Central Regional Association of State Agricultural Experimentation Station Directors (ASIWPCA), Kansas City, MO, March 31, 2009.

Gay, D. "Annual Assessment and Overview of the NADP," Invited talk for the Northeastern Regional Association of State Agricultural Experimentation Station Directors (ASIWPCA), Baltimore, March 24, 2009.

Schmeltz, D. and D. A. Gay. "Atmospheric Mercury Monitoring and Assessment Overview," Invited talk for the Association of State and Interstate Water Pollution Control Administrators (ASIWPCA), Teleconference, February 2, 2009.

Gay, D. A., C. M. B. Lehmann, and M. Rhodes "The National Atmospheric Deposition Program: Monitoring the Nation's Chemical Climate." Institute of Natural Resource Sustainability Workshop "Conceptual, Spatial and Numerical Modeling for Decision Support in Natural Resource Management," Champaign IL, February 2, 2009.

Gay, D.A. "Monitoring Ecotoxicological Agents in the Nation's Precipitation." University of Illinois Lecture for Ecotoxicology (Veterinary Sciences, VB 551), November 13, 2008.

Gay, D. A., D. Schmeltz T. Sharac, M. Olson, and E. Prestbo "Current Status and QA Needs for the Atmospheric Mercury Initiative." Workshop on Reducing the Uncertainty in Measurements of Atmospheric Hg, Parrington Hall-Commons, University of Washington, Seattle, October 23-25, 2008.

Gay, D.A. "State of the National Atmospheric Deposition Program," NADP 2008 Fall Meeting and Scientific Symposium, October 20-22, 2008.

Lear, G., C. Sweet, M. Caughey, C. Lehmann, T. Dombek, and D. Gay. "Passive Diffusion Monitoring for Ammonia in the U.S." NADP 2008 Fall Meeting and Scientific Symposium, October 20-22, 2008.

Gay, D. A. Four invited presentations for the Air Pollution and Ecosystems Course, hosted by the Inter Tribal Environmental Council, September 23-26, 2008. Topics included Acid Deposition, Mercury Deposition, Climate Change for Tribal Lands, and an Introduction to Nitrogen in the Environment.

Schmeltz, D., T. Sharac, D. Gay, M. Olson, and E. Prestbo. Poster "Update: NADP Atmospheric Mercury Initiative," NADP Fall Symposium, Madison, WI, October 10, 2008.

Gay, D. A. Four presentations for the 2008 Institute for Tribal Environmental Professional's Climate Change on Tribal Lands" training class on August 19 - 22, 2008 in Flagstaff, AZ. These included "Global Climate Modeling," "Dendrochronology Overview," a poster presentation of "Using/Measuring Climate Data," and four other laboratory-style seminars during the four-day training session for twenty students.

Gay, D. A. NADP Budget Presentation, National Atmospheric Deposition Program Summer Budget Meeting, Washington, DC, July 2008.

Gay, D. A. Two presentations for the 2008 National Tribal Conference for Environmental Management, June 24 - 26, Billings, MT; included "Climate Change on Tribal Lands," a 3-hour training session, and "Mercury Wet Deposition across North America: Understanding and Monitoring," with D. Schmeltz and T. Sharac.

Gay, D. A. "What Exactly Is the Mercury Problem?" for the National Tribal Forum, National Tribal Air Association, Las Vegas, June 4, 2008.

Gay, D. A. and E. Prestbo. "Wet Deposition Mercury Trends in North America," for the ISWS Seminar Series, April 15, 2008.

Gay, D. A. Two presentations for the 2008 Central Analytical Laboratory Training Course, April 2- 4, 2008. They included "An NADP Introduction," and "What Does the MDN Data Mean?"

Gay, D. A. Three invited presentations for the Air Pollution and Ecosystems Course, hosted by the Inter Tribal Environmental Council, March 4 - 7, 2008. They included "Acid Deposition: Is 'Acid Rain' *still* a Problem?"; "Climate Change and Its Influences On Ecosystems," with Bob Hall/US EPA; and "The Science Behind Mercury in The Environment."

Gay, D. A. Two Presentations, "Mercury Deposition Across North America: Understanding and Monitoring", and "Climate Change Science", given to the United South and Eastern Tribes, Inc.'s "USET Impact Week Meeting", Crystal Gateway Marriott, Arlington, VA, February 11-14, 2008.

Gay, D. A., and D. Schmeltz "Atmospheric Mercury Monitoring and Assessment Overview," briefing for the Tribal Air Monitoring Support (TAMS) Center Steering Committee, Teleconference hosted by S. Caldwell/TAMS, February 6, 2008.

Schmeltz, D., and D. Gay. "Atmospheric Mercury Monitoring and Assessment Overview," Invited talk for the Association of State and Interstate Water Pollution Control Administrators (ASIWPCA), teleconference hosted by R. Chemerys/EPA, January 22, 2008.

Gay, D. A., and E. Prestbo. "Mercury Deposition Network: Results and Plans," invited presentation, New York State Energy Research and Development Authority's Environmental Monitoring, Evaluation, and Protection meeting, Albany, NY, November 14-16, 2007.

Gay, D. A. Three invited presentations for the Air Pollution and Ecosystems Course, hosted by the Inter Tribal Environmental Council, Sept. 25 - 27, 2007. They included "Acid Deposition: Is 'Acid Rain' *still* a Problem?"; "Climate Change and Its Influences On Ecosystems," with Bob Hall/US EPA; and "The Science Behind Mercury in The Environment."

Gay, D. A., and C. Lehmann, " National Atmospheric Deposition Program (NADP): Overview of Observations," invited presentation, Columbia Gorge Air Quality Project – Science Day, Hood River, OR, September 25, 2007.

Prestbo, E., D. Gay, M. Risch, D. Schmeltz, T. Sharac. "The NADP-MDN Atmospheric Mercury Initiative Monitoring Atmospheric Mercury Species to Estimate Mercury Dry Deposition," Air Quality VI, Washington, DC, September 2007.

Prestbo, E., M. Risch, D. Schmeltz, and D. A. Gay. Special NADP Planning Meeting: Atmospheric Mercury and Dry Deposition Initiative, National Atmospheric Deposition Program, Burlington, VT, April 2007.

Gay, D. A. Multiple Presentations, NADP Spring Meeting, April 2007, Burlington, VT.

Schmeltz, D., T. Sharac, J. Stoddard, D. Gay, M. Risch, E. Prestbo. "NADP Atmospheric Mercury Dry Deposition Initiative: Towards Establishing a Nationwide, Multi-media Mercury Monitoring Program" (poster) for the U.S. EPA's Environmental Monitoring and Assessment Program, Washington, DC, April 10-11, 2007.

Gay, D. A. "Mercury, Critical Loads, and the National Atmospheric Deposition Program," invited presentation, National Tribal Forum on Air Quality, National Tribal Environmental Council, San Diego, April 2007.

Gay, D. A. "The Mercury Problem (and the MDN approach), invited presentation, City of Jacksonville, FL, Environmental Protection Council, January, 2007.

Gay, D. A. "Overview of the National Atmospheric Deposition Program," EPA National Atmospheric Monitoring Strategy Meeting, Las Vegas, November, 2006.

Gay, D. A. Multiple presentations, NADP Fall Meeting, October 2006, Jackson, WY.

Gay, D. A. "The Way (MDN) Things Work," invited presentation, Tribal Air Monitoring Support (TAMS) Steering Committee Meeting, Las Vegas, October, 2006.

Gay, D. A. "Why Should We Care About Mercury Deposition, (and what is the MDN)" EPA Region 7 Workshop, Lincoln NE October, 2006.

Author and Coauthor to Seven Posters at "Mercury 2006" Madison, WI, June 6-10, 2006.

Gay, D.A., Prestbo, Brunette, and Sweet. "Wet Deposition of Mercury in the U.S. and Canada, 1996 to 2005: Results, Trends, and Future Directions of the MDN".

Rodgers, Gay, and Prestbo. "Wisconsin Mercury Deposition Network (MDN) and Trends".

Prestbo, Risch, and Gay. "Mercury Trends Network (MTN) of the National Atmospheric Deposition Program: Monitoring Atmospheric Mercury Speciation".

Brunette, Prestbo, van der Jagt, and Gay. "Trends in Methyl Mercury Deposition found in the Mercury Deposition Network."

Wetherbee, Latysh, Gay, Lehmann, and Green. "U.S. Geological Survey External Quality Assurance Programs for the National Atmospheric Deposition Program/Mercury Deposition Network".

Lehmann, Wetherbee, Latysh, Brunette, van der Jagt and Gay. "Data-Quality Objectives for the National Atmospheric Deposition Program/MDN."

Brunette, van der Gagt, Disney, Nelson, Karlstrom, Realph, Dichler, Dawson, Sweet, and Gay. "National Atmospheric Deposition Program –MDN Field Intercomparison of Existing and Prototype Mercury Wet Deposition Collectors."

Gay, D. A., E. Prestbo, B. Brunette, C. Sweet. "Wet Deposition and Trends of Mercury in the US and Canada, 1996-2004: Results from the NADP Mercury Deposition Network," National Water Quality Monitoring Network Design Conference, San Jose, CA, May 11, 2006.

Gay, D. A. "Why Should We Care about Mercury Deposition?" National Water Quality Monitoring Network Design Conference, San Jose, May 9, 2006.

Gay, D. A. Multiple presentations, NADP Spring Meeting, May 2006, Riverside, CA.

Prestbo, E., M. Risch, D. Gay. "The Importance of Dry Deposition of Mercury," National Atmospheric Deposition Program's Special Meeting, Riverside, CA, May 1, 2006.

Gay, D. A., E. Prestbo, B. Brunette, and C. Sweet. "Wet Deposition of Mercury in the U.S. and Canadian Great Lakes Region, 1996-2004: Results from the NADP Mercury Deposition Network," Illinois State Water Survey Seminar Series, Champaign, February 9, 2006.

Gay, D. A. "The Mercury Deposition Network and Wet Deposition of Mercury," Western Regional Air Partnership Board Meeting (Special Mercury Session), Palm Springs, December 15, 2005.

Prestbo, E., M. Risch, and D. A. Gay. "Improving Estimates of Total Mercury Deposition with Monitoring of Atmospheric Mercury Species at National Atmospheric Deposition Program Mercury Deposition Network Sites," proposal presentations to EPA (at two offices, CAMD, Washington D.C., October, 1, 2005, and OAQPS, Research Triangle Park, NC, October 15, 2005).

Gay, D. A. Multiple presentations, NADP Fall Meeting, Jackson Hole, WY, October 2005.

Gay, D. A. "Wet Deposition of Mercury in the U.S. and Canadian Great Lakes Region, 1996-2003: Results from the NADP Mercury Deposition Network," 48th Annual International Association of Great Lakes Researchers Conference, Ann Arbor, May 23-27, 2005.

Kenski, D. and D. A. Gay. "Issues in Ammonia and Nitric Acid Measurements: Experiences in the Midwest," Air and Waste Management Association Specialty Conference, April 2005, San Francisco.

Gay, D. A. "Rusts in the Nation's Rain (and a few more things too)," Illinois State Department of Agriculture, Springfield, IL, March 2005.

Williams, A., D. A. Gay, and M. Caughey. "Continuous Observations of PM_{2.5} Speciation at a Rural Illinois Site," American Association of Aerosol Research (AAAR) Particulate Matter Supersites Program and Related Studies, Atlanta, February 2005.

Gay, D. A. "The Mercury Problem and Native Americans," 14th Annual Tribal Providers Conference, Anchorage, November, 2004. Sponsored by the Bureau of Indian Affairs, U.S. Dept. of Interior.

Prestbo, E., D. A. Gay, C. W. Sweet, and B. Larson. "Mercury Deposition in North America, Preliminary Findings from the Mercury Deposition Network (MDN)," poster, National Atmospheric Deposition Program Fall Meeting, Halifax, NS, Canada, October 2004.

Kenski, D., and D. A. Gay, D. "Ammonia and Its Role in Midwestern Haze," poster, National Atmospheric Deposition Program Fall Meeting, Halifax, NS, Canada October, 2004.

Gay, D. A. "Understanding The Mercury Problem and How the Mercury Deposition Network Helps," International Tribal Environmental Council (ITEC), National Meeting, Palm Springs, October 2004.

Prestbo, E., D. A. Gay, C. W. Sweet, B. Larson. "Mercury Deposition in North America: Preliminary Findings from the Mercury Deposition Network (MDN)," presented at the 7th International Conference on Mercury as a Global Pollutant Conference, Ljubljana, Slovenia, July 2004.

Gay, D. A. "Monitoring Wet Deposition of Mercury in the North America – The Mercury Deposition Network," International Tribal Environmental Council (ITEC), Oklahoma City, June 2004.

Sweet, C., D. Gay, A. Williams, and M. Caughey. "Measurements of Ammonia and Related Species at IL11 (Bondville Illinois)," National Atmospheric Deposition Program Specialty Ammonia Workshop and Conference, Washington D.C., October 2003.

Gay, D. A. "Visibility and Aerosol Characteristics at the Grand Canyon National Park and Air Mass Variation," Association of American Geographers national meeting, Charlotte, NC, April, 1996.

Gay, D. A., "Within Synoptic Type Variation of Rural, Western U.S. Visibility and Aerosol Chemical Characteristics," Association of American Geographers National Meeting, Chicago, March 1995.

- Gay, D. A., and R. E. Davis. "Variation of Rural, Western U.S. Visibility and Aerosol Characteristics Under Different Synoptic Conditions," Association of American Geographers National Meeting, San Francisco, March 29 - April 2, 1994.
- Gay, D. A., and R. E. Davis. "Sleet and Freezing Rain Climatology for the Southeastern United States," Association of American Geographers National Meeting, Atlanta, April 6-10, 1993.
- Davis, R. E., B. P. Hayden, D. A. Gay, and W. L. Phillips. "The Bermuda High," Association of American Geographers National Meeting, Atlanta, April 6-10, 1993.
- Gay, D. A. "A National Inventory of Biogenic Hydrocarbon Emissions Based upon a Simple Forest Canopy Model," Air Pollution and Control Association (now AWMA) National Meeting, student poster competition, New York, NY, June 1987.

Committee Membership

Scientific Advisory Board (SAB) of the Global Mercury Observation System (GMOS), Funded by the European Commission, DG Research 7th Framework Programme, from 2010 to 2015 (Project Number 265113), Dr. Florence Beround, European Commission - RTD, Project Officer, and Prof. Nicola Pirrone, CNR - Institute of Atmospheric Pollution Research, Rome, Italy, Project Coordinator.

Air Group Leader and Guest Editor for the Great Lakes Mercury Workshop, University of Wisconsin - La Crosse. November 10-12, 2008-2010.

National Mercury Monitoring Strategy Workshop Steering Committee, supported by EPA, NADP and the BioDiversity Research Institute, 2007-2009; Annapolis, May 5-7, 2008.

Inter-Tribal Environmental Council, Teaching Faculty, 2006-2008.

Tribal Air Monitoring Support (TAMS) Center, Subcommittee on Climate Change for the TAMS Steering Committee, 2007.

Tribal Air Monitoring Support (TAMS) Center, Subcommittee on Mercury for the TAMS Steering Committee, 2007.

National Atmospheric Deposition Program, 2003 - present, Ecological Response and Outreach Subcommittee, Executive Committee (ex-officio).

Workshops/Meetings

Conference Organizing Committee: International Conference on Mercury as a Global Pollutant (ICMGP 2017), Providence, Rhode Island. Expecting 700-1000 people, with 200 oral and 400 poster presentations, global scientific attendance. Main organizing committee (7 people). Currently responsible for conference fund raising, contract evaluation, and planned to control funds (comptroller). Planning has been ongoing since September 2014.

Conference Co-Chair: 9th International Acid Rain Conference, October 19-23, 2015, Rochester, New York. Expecting 500-700 people, with 105 oral and 200 poster presentations, global scientific attendance, and budget of approximately \$500,000. Responsible for all physical aspects of the conference (audio, visual, posters, speakers, etc.) and the fiscal aspects of the conference (budget, contracts, expenses, reporting, etc.) of the conference. Planning has been ongoing since Jan 2014.

Conference Science Committee: International Conference on Mercury as a Global Pollutant (ICMGP 2015), Jeju Island, Republic of South Korea. Expecting 500-700 people, with 200 oral and 400 poster presentations, global scientific attendance. Responsible for choosing atmospheric abstracts, leading the workshop committee (pre-conference, 15 workshops). Planning has been ongoing since September 2013.

Workshop Co-organizer: Water in a Changing World: A Comparison of Midwest and European Approaches, Champaign, IL, April 17, 2012. 100 people, with 6 scientists from the University of Leeds, approximately 14 speakers, discussing general water quality issues and approaches to these topics in two different countries, and how the approaches vary.

Session Chair and Discussion Leader, Integrating Multimedia Measurements of Mercury in the Great Lake Region, Lacrosse, Wisconsin, November 10-12, 2008. Organization and directing of for meeting workshop goals. Session (five speakers) included journal articles.

Session Chair, NADP 2006 Fall Meeting. Organization and chair of mercury sessions, Norfolk, Virginia. This was several sessions (nine speakers), including planning, contacting, chairing, etc. This is the national meeting run by the NADP Project based at the Illinois State Water Survey.

Workshop Co-organizer: NADP, Atmospheric Mercury Best Practices and SOP Workshop, Chicago, October 3 - 4, 2007; a small workshop planned and produced for NADP to gather scientists to discuss the particular SOPs of a national network to monitor for atmospheric concentrations of mercury species. Twenty five mercury scientists in attendance, EPA funded.

Workshop Co-organizer, NADP Dry Deposition of Mercury, Burlington, VT, April 9 - 10, 2007; a workshop planned and produced for NADP to gather of State Air Planners to discuss state involvement in a national network to monitor for atmospheric concentrations of mercury species. Forty in attendance, EPA funded.

Workshop Co-organizer, NADP Dry Deposition of Mercury Workshop, Riverside, CA May 1, 2006; a workshop planned and produced for NADP to gather scientists, NADP members, and state agencies to discuss the feasibility of a national network to monitor for atmospheric concentrations of mercury species. Sixty attendees, EPA funded.

Workshop Co-organizer, NADP Dry Deposition of Mercury, Chicago, June 27, 2006; a small workshop planned and produced for NADP to gather scientists to discuss the particular SOPs of a National network to monitor for atmospheric concentrations of mercury species. Twelve mercury scientists in attendance, EPA funded.

Information Booth, Mercury Deposition Network, Madison, WI, June 6 - 10, 2006 for "Mercury 2006" Science Symposium. Planned, produced, and manned a booth at the symposium for NADP, with

equipment, promotional materials, and scientific findings.

Mercury Session Chair, NADP Fall Meeting, Jackson Hole, WY, October 2006.

Session Chair, NADP Fall Meeting, Halifax, NS, Canada, October 2005. Mercury in the Environment.

Co-organizer, Annual Undergraduate Research Day, 1996; Intra-departmental undergraduate student presentations at the University of North Carolina-Charlotte, four sessions, April 1996, Charlotte.

Organizer, 8th Annual EnviroDays, 1993; intra-departmental student presentations at the University of Virginia, eight sessions, forty speakers, two days, February 17-18, 1993, Charlottesville, VA.

Session Co-chair and Presenter, August Teaching Workshop, "Teaching Laboratory Courses in Science or Engineering," August 30, 1993, University of Virginia, Charlottesville, VA.

Co-organizer, Incineration Workshop, Oregon Chapter of the Air and Waste Management Association; five sessions, fourteen speakers, one day, May 25, 1989, Portland, OR.

Research Grants, Proposals, and Awards

Markus, M., D. Gay, D. Kristovich¹, G. McIsaac, P. Bajcsy, G. Czapar. "Statistical and data mining approaches to determine the effects of future extreme rainfall events and air pollution on atmospheric wet deposition of nitrogen in the United States", submitted to EPA STAR, April 2011.

Gay, Tao, et al. "National Atmospheric Deposition Program Representation and Demonstration Project for NASA Air Quality Applied Sciences Team – Improving NADP Wet Deposition Estimates Using TRMM Precipitation Data," submitted to the National Aeronautics and Space Administration, funding requested of \$586,000, March 2010.

Gay, Rhodes, and Olson. "Atmospheric Hg Monitoring at Sites Bordering the Great Lakes," submitted to the Great Lakes Restoration Initiative, U.S. EPA, funding requested of \$4,009,000, January 2010.

Rhodes and Gay. "Mercury Wet Deposition Monitoring at IADN Sites," submitted to the Great Lakes Restoration Initiative, U.S. EPA, funding requested of \$2,335,042, January 2010

Szabo, et. al., Gay. "Monitoring Asian Soybean Rust (*Phakopsora pachyrhizi*) in Rain Deposition Samples," funding from USDA Agriculture Research Service, \$156,000, June, 2009.

Evers, et. al., Gay. "Linking Atmospheric Deposition of Mercury with a Terrestrial Biotic Response," funding from Great Lakes Air Deposition (GLAD) Program, requested \$115,438, June 2009.

Lehmann, C.M.B, and Gay. "Development and Implementation of a Nitrogen Deposition Monitoring Network", Funding from U.S.D.A. Cooperative State Research, Education, and Extension Service for \$320,000, June 2009.

Gay. "Continuation of Monitoring Asian Soybean Rust (*Phakopsora pachyrhizi*) in Rain Deposition Samples," funding from USDA Agriculture Research Service, funded for \$30,000, May 2009.

Gay and Bowersox. "National Atmospheric Deposition Program NRSP-3, Coordination & Chemical Analysis." Funding from the U.S.D.A. Cooperative State Research, Education, and Extension Service, funded for \$6,478,979, April 2009.

Lehmann and Gay. "Development and Implementation of an Ammonia Gas Passive Monitoring Network," funding from U.S.D.A. Cooperative State Research, Education, and Extension Service for \$249,721, June 2008.

Gay. "Continuation of Monitoring Asian Soybean Rust (*Phakopsora pachyrhizi*) in Rain Deposition Samples" Funding from USDA Agriculture Research Service, Funding Request: \$42,000, May 2008, Funded.

Gay, Palecki, Westcott, & Kristovich. "Framework for the Integration of Mercury Wet Deposition Measurements in the Great Lakes Basin," funding from Great lakes Commission/GLAD, \$110,000, March 2009.

Palecki, Kristovich, and Gay, "Synoptic Classification of Mercury Wet Deposition Events to Aid Regulatory Assessment", Funding Great Lakes Commission/Great Lakes Atmospheric Deposition (GLAD), \$121,727 (indirect \$45,000), 2007.

Tao, Williams, Caughey, Gay, & Shen. "Characterization of Source and Composition of Coarse Particulate Matter and its Link to Health", U.S. EPA, STAR Project Cost: \$1,199,898 (indirect \$357,750), 2007.

Kristovich, Palecki, and D. Gay (co PI). "Mesoscale and Synoptic Analyses of Mercury Wet Deposition Events in the Great Lakes Region," , \$155,000, to Great Lakes Deposition Program, Ann Arbor, MI, 2007.

Caughey & Gay, Measuring Atmospheric Ammonia with Passive Ammonia Samplers with Network Development (Phase 1), Environmental Protection Agency through NADP, since October, 2006. Funding, \$91,000. Second stage funding, \$130,000, 2006.

Caughey & Gay, Lake Michigan Air Directors Consortium, "Continued Ammonia Monitoring at Six LADCO Sites Using Passive Samplers," \$57,523, 2006, funded.

Caughey & Gay. "Measuring Atmospheric Concentrations of Speciated Mercury Components Over the U.S. (Phase 1 Planning)," Environmental Protection Agency, through NADP, since March, 2006, funded, \$158,000.

Caughey & Gay, "Monitoring Ambient Ammonia at Two ODEQ Sites in Rural Oklahoma," funded at \$35,000, continued at \$42,000, 2005.

Caughey & Gay. "Continuous Atmospheric Monitoring For Speciation Ambient Gases in Chicago, IL. Lake Michigan Air Directors Consortium (LADCo), May, 2004. Funded at \$200,000.

Caughey and Gay. "Ambient Ammonia Monitoring In The Midwestern U.S., Central Regional Air Planning Association (CENRAP)," Since Dec, 2004. Funding \$250,000, completed 2006.

Caughey and Gay, "Atmospheric Ammonia and Related Compounds in the Midwest", Lake Michigan Air Directors Consortium (LADCo), 4 extensions, since May, 2003. Funding \$250,000, completed, 2006.

Williams, A., M. Caughey, and D. Gay (co-PI). "Chicago Urban Background Speciation Monitoring," funding Agency: Lake Michigan Air Directors Consortium, Duration: 2 years, funded, starting April 1, 2003. Funding \$260,000 direct, \$330,000 total.

Service Notes

External Review, March 2016. Review of "Contrasted spatial and long term trends in precipitation chemistry and deposition fluxes at rural stations in France", by A. Pascaud, Sauvage, Coddeville, Nicolas, Croisé, Mezdour, & Probst, for Atmospheric Environment, Editor Alfred Wiedensohler.

External Review, February 2016. Science book review of "Handbook of Air Pollution and its Impacts on National Parks in the United States" by Timothy J. Sullivan, E&S Environmental Chemistry, Inc. Corvallis, OR, to be published by Cornell University Press. This was a full review of the 22 chapters in the book.

External Review, December 2015. Review of "Mercury transformation and speciation in flue gases from anthropogenic emission sources: a critical review" by Zhang et al., for Atmospheric Chemistry and Physics, Editor R. Ebinghaus.

Co-Organizer for the 2015 Acid Rain Conference, to be held in October, 2015 in Rochester, New York. NADP on World Meteorological Organization/Total Atmospheric Deposition (WMO/TAD) working group at two meetings; served as workshop secretary.

External Review, June 2015. Review of "Which fish can I eat? Mercury contamination in wildlife of Iran: a review" by Shooshtari et al., for Biology and Environment, Editor T. Mullins.

External Review, June 2015. Review of "Effects of simulated acid rain on the morphology, phenology, and yield of a local variety of Maize (Suwan-1) in Southwestern Nigeria" by Enahoro & Macaulay, for Environmental Monitoring and Assessment, Editor F. Kutz.

External Review, May 2015. Review of "Characterizations of wet mercury deposition to a remote high-elevation site in the southeastern Tibetan Plateau" by Huang et al., for Environmental Pollution, Editor B. Nowack.

External Review, Jan & Mar 2015. Second and third reviews of “Organic matter in rain: an overlooked influence on mercury deposition” by Åkerblom, Meili & Bishop, for Environmental Science & Technology Manuscript, Editor S. Simonich.

External Review, Nov 2014. Review of “Organic matter in rain: an overlooked influence on mercury deposition” by Åkerblom, Meili & Bishop, for Environmental Science & Technology Manuscript, Editor S. Simonich.

External Review, May 2014. Second review of “Source Identification of Total Mercury (TM) Wet Deposition using a Lagrangian Particle Dispersion Model (LPDM)” by Seo, Han, Holsen, Choi, & Yi, for Environmental Science & Technology Manuscript, Editor K. Hornbuckle.

External Review, March 2014. “Source Identification of Total Mercury (TM) Wet Deposition using a Lagrangian Particle Dispersion Model (LPDM)” by Seo, Han, Holsen, Choi, & Yi, for Environmental Science & Technology Manuscript, Editor K. Hornbuckle.

External Review, March 2014. “Effects of urbanization on mercury deposition 1 and accumulation in New England” by Chalmers, Krabbenhoft, Van Metre, and Nilles, for Environmental Pollution, Editor W. Manning.

Science Advisory Group for the 12th International Convention of Mercury as a Global Pollutant (ICMGP 2015) to be held in July, 2015 on Jeju Island, Republic of Korea.

External Review, August 2013. “Seasonal contribution of dewfall to mercury deposition determined 3 using a micrometeorological technique and dew chemistry” by Converse, Riscassi and Scanlon, for Journal of Geophysical Review, Editor J. Crawford.

External Review, May 2013. “The Quality of Our Nation’s Waters: Mercury in the Nation’s Streams — Levels, Trends, and Implications” by Dennis A. Wentz, Mark E. Brigham, Lia C. Chasar, Michelle A. Lutz, and David P. Krabbenhoft, for the United States Geological Survey.

External Review, May 2013. “Comprehensive Assessment of Wet Deposition Monitoring by the National Atmospheric Deposition Program for Class 1 Wilderness Areas managed by the National Forest System” by Padgett and Schilling, for the USDA Forest Service, Pacific Southwest Research, Riverside CA.

External Review, May 2013. “Characterizations of wet mercury deposition to a remote islet (Pengjiayu) in subtropical Northwest Pacific Ocean: Temporal and regional variation in atmospheric mercury in New York State” by Sheu and Lin, for Atmospheric Environment, Editor H. Singh.

External Review, February, 2013. “Temporal and regional variation in atmospheric mercury in New York State” by Ho et al., for Annals of the New York Academy of Sciences, Editor D. Braaten.

External Review, February, 2013. “Source Identification of Total Mercury (TM) Wet Deposition using a Lagrangian Particle Dispersion Model (LPDM)” by Seo et al., for Environmental Science and Technology, Editor A. G. Russell.

External Review, December 2012. “Dynamics of the chemical composition of rainwater throughout Hurricane Irene”, by Mullaugh et al., for Atmospheric Chemistry and Physics, ed. Murphy.

External Review, December 2012. “Atmospheric Processes, Transport, Levels & Trends” chapter of the Canadian Mercury Science Assessment “, by Cole et al., for Environment Canada.

External Review, August 2012. ““Transference Ratios” to Predict Total Oxidized Sulfur and Nitrogen Deposition – Part II, Modeling Results” by Sickles, JE, et al., for Atm. Environment, for H. Singh.

External Review, July 2012. ““Transference Ratios” to Predict Total Oxidized Sulfur and Nitrogen Deposition – Part I, Monitoring Results” by Sickles, JE, et al., for Atm. Environment, for H. Singh.

External Review, June 2012. “Continental-scale isoscapes of atmospheric nitrogen deposition unravel its sources”, by Elliott, EM, et al., for Science, for H. Jesse Smith.

Colleague Review, June 2012. "Long-Term Gaseous Oxidized Mercury Dry Deposition Measurements in the Four Corners Area and Eastern Oklahoma, U.S.A." for M. A. Sather, U.S. EPA.

External Review, June 2012. "Assessing Trend analysis of atmospheric deposition data... approaches", by Marchetto, et al., Atmospheric Environment for Dr. H.H. Singh.

External Review, March 2012. "Assessing the Emission Sources of Atmospheric Mercury ... Illinois", by Gratz, et al., Science of the Total Environment for Dr. M.S. Gustin.

External Review, February 2012. "Atmospheric deposition of mercury from Waites Island....", by J.L. Guentzel. In Mercury: Sources, Applications and Health Impacts, for Dr. Ki-Hyun Kim, Sejong University, Seoul, Korea.

External Review, December, 2011. Mercury topic for Environmental Science and Technology.

External Review, April, 2011. "Mercury in cloud water collected on Mt. Bamboo in northern Taiwan during the northeast monsoon season" by Shue and Lin, for Atmospheric Environment.

External Review, March, 2011. "Characteristics of atmospheric ammonia over Beijing, China" by Z. Y. Meng et al., for the Journal of Environmental Atmospheric Chemistry and Physics.

External Review, January, 2011. "Mercury in different atmospheric precipitation species" for International Journal of Environmental Analytical Chemistry.

Steering Board Member, March 2010 to present, Special consultant to the Tribal Air Monitoring Support Steering Committee, based in Las Vegas, Nevada. Their goal is to provide input regarding air monitoring priorities for American tribes.

External Review, March, 2010. USGS colleague review of article for ES&T, Shandling et al., Mercury in Caribbean coastal rainwater..."

Illinois State University Geography Department Career Fair, Panel Member, March 18, 2010, Normal IL.

Review: U.S. EPA, Request for Proposals (FRQ-DC-09-00298), mercury monitoring, eight proposals and reporting, Atmospheric Mercury Monitoring Services, Nov 2009.

External Review, September, 2009. Atmospheric Environment, Conaway et al., Mercury Speciation in Pacific coastal rainwater..."

Clean Air Status and Trends Network Workshop designed to provide input to EPA and the National Park Service on modernizing CASTNet's monitoring approach, August 20 – 21, 2009 in RTP, NC.

External Review, August 2009. Book Chapter for "Mercury in the Environment: Pattern and Process" edited by Michael S. Bank, University of California Press, and a review of Chapter 6, "Atmospheric Chemistry, Modeling and Biogeochemistry of Mercury" by N.E. Selin.

External Review, May, 2009. Environmental Science and Technology, Lyman et al.

External Review, April 2009: Report: "International Joint Commission AQA Progress Report, 2008".

Review, April 2009. U.S. EPA Proposal (G2009-STAR D1 "Use of Passive Samplers and Surrogate Surfaces to Understand the Sources and Input of Hg to U.S. Ecosystems"), Gustin et al.

Review, September and October, 2008. U.S. EPA Review of Request for Proposals (FRQ-DC-08-00220), mercury monitoring, six proposals and reporting, Atmospheric Mercury Monitoring Services.

Committee, 2007 – 2008. Inter-Tribal Environmental Professional (ITEP) Tribal Climate Change Subcommittee.

Committee, 2007 – 2008. Inter-Tribal Environmental Professional (ITEP) Mercury Subcommittee.

Internal ISWS Publication Review, Aug 2008, "A Preliminary Synthesis of Modeled....", Liang et al. Science Manager, 2004 - 2007; Bondville Environmental and Atmospheric Research Station (BEARS), responsible for day to day operation and management, and scientific decisions.

Hiring Committee, 2007. Central Analytical Laboratory Director, NADP.

External Review, April, 2007. *Environmental Sci.Tech.*, Schwab et al.

External Review, March, 2007. Four new proposals for the Cooperative Institute for Coastal and Estuarine Environment Technology, Holson et al., Mao et al., Marsik et al., & Mason et al.

External Review, February 2007. *Atmospheric Environment*, "Atmospheric Processes Influencing Wet and Dry Mercury Deposition".

External Review, February, 2007. *Water, Air and Soil Pollution*, Fulkerson, et al.

External Review, January 2007. Colleague Review for USGS, Latysh et al.

External Review, December 2006. Colleague Review for the Great Lakes Commission (Dettling): Mercury Deposition Monitoring in the Great Lakes States: Current Activities and Future Directions.

External Review, June 2006. Colleague Review for USGS, Perry et al.

External Review, April 2006. *Climate Research*, "A Synoptic Climatological Part 1: Historical Analysis.

External Review, April 2006. *Climate Research*, "A Synoptic Climatological Part 2: Future Estimates.

External Review, March 2006. *B. American Meteorological Society*, (Vijayaraghavan et al).

External Review, March 2006. *Climate Research* (Cheng, et al.).

External Review, January 2006. *Atmospheric Environment*, (Fulkerson, et al.).

External Review, December 2005. USGS Colleague Review, (Caldwell, et al.).

External Review, December 2005. USGS Colleague Review, Risch and Prestbo.

Hiring Committees, 2005. Four (Liaison, NADP, Programmer, NADP; PI for AES; BEARS Operator).

Volunteer, May 2005. National Science Olympiad Tournament.

Volunteer, April 2005. State of Illinois Science Olympiad Tournament.

External Review, July, 2004. manuscript review for Jim Lynch, Editor, PSU , "Managing Ammonia Emissions From Livestock Production In Europe".

Internal ISWS Publication Review, May 2005. "On the Of Fog Events", Westcott.

Internal ISWS Publication Review, April 2005. "Trends in Sulfur and Nitrogen Species at Collocated NADP-CASTNET Sites", Lehmann, et al., Paper #2.

Internal ISWS Publication Review, March, 2005. Lehmann et al, Paper #1.

Internal ISWS Publication Review, April 2004. "Quality Control of Pre-1948 Cooperative Observer Network Data", Kunkel, et. al (AES 2004-10).

Research & Teaching Awards:

Atmospheric Environment 2008 Haagen-Smit Prize, (<http://geo.arc.nasa.gov/sgg/singh/>), given annually the two outstanding papers published in *Atmospheric Environment*, for Lamb, B., A. Guenther, D. Gay, and H. Westberg, "A National Inventory of Biogenic Hydrocarbon Emissions", V21, 1695-1705, 1987.

Virginia Commonwealth Fellow, 1993-94 academic year (eleven selected statewide, faculty nominated), for future teaching faculty.

Governor's Fellowship, University of Virginia, 1993-94 academic year.

Professional Affiliations

Air and Waste Management Association (earlier APCA) since 1986.

Association of American Geographers since 1992.

American Meteorological Society since 1993.

Sigma Xi since 1995.

