



CURRICULUM VITAE

NAME: Charles Thurston Driscoll, Jr.

ADDRESS: Department of Civil and Environmental Engineering
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BORN: March 17, 1952
Rochester, New Hampshire

EDUCATION: B.S. (with distinction), Civil Engineering,
University of Maine, 1974

M.S. Environmental Engineering,
Cornell University, 1976

Ph.D. Environmental Engineering,
Cornell University, 1980

PROFESSIONAL EXPERIENCE: University Professor of Environmental Systems Engineering
Syracuse University, Department of Civil and Environmental Engineering
2001- present

Director
Center for Environmental Systems Engineering
L.C. Smith College of Engineering and Computer Science
Syracuse University
1998 - present

Chair, Department of Civil and Environmental Engineering
Syracuse University
2001 - 2003

Professor of Biology (courtesy appointment)
Department of Biology
Syracuse University
2001-present

Distinguished Professor of Civil and Environmental Engineering
Department of Civil and Environmental Engineering
Syracuse University
1993 - present

Professor
Department of Civil and Environmental Engineering
Syracuse University
1985 - 1993

Director
Hydrogeology Program
Syracuse University
1986 - 1996

Professor of Chemistry (courtesy appointment)
Department of Chemistry
Syracuse University
1993-present

Professor of Earth Sciences (courtesy appointment)
Department of Earth Sciences
Syracuse University
1989 - present

Visiting Scientist
Institute of Ecosystem Studies
Millbrook, New York
1987 – 1988

Visiting Scholar
University of Virginia
Charlottesville, Virginia
January-June 2006

Associate Professor
Civil Engineering Department
Syracuse University
1983 - 1985

Visiting Scientist
Department of Soil Science and Geology
Agricultural University
Wageningen, the Netherlands
1983

Assistant Professor
Civil Engineering Department
Syracuse University, 1979 - 1983

**AREAS OF
RESEARCH:**

Aquatic Chemistry
Biogeochemistry
Ecosystem Science
Environmental Quality Modeling
Limnology
Soil Chemistry

HONORS AND AWARDS:

- Batsheva de Rothschild Fellowship, Israel Academy of Sciences and Humanities, Lectureship at Israel University, 2015
- Adirondack Research Consortium, Adirondack Achievement Award, 2012
- National Research Council, Board of Environmental Studies and Toxicology, 2011-2017
- U.S. National Committee for Soil Science, The National Academies, 2008-2010
- Guest on National Public Radio Science Friday, 19 January 2007
- Syracuse University Excellence in Graduate Education Faculty Recognition Award, March 2007
- National Academy of Engineering, 2007-present
- National Research Council (NRC) Committee on Everglades Restoration, 2006-present

- Air Quality Working Group, State of the Nations Ecosystems, Heinz Center, 2005-2007
- National Research Council (NRC) Committee on Collaborative Larger Scale Engineering Analysis for Environmental Research (CLEANER), 2005-2006
- Institute of Scientific Information, Highly Cited Researcher for Engineering and Environmental Science, 2003-present
- National Research Council (NRC) Committee on Air Quality Management in the United States, 2001-2004
- Co-convener of AGU Chapman Conference on Nitrogen Cycling in Forested Catchments, 1996
- American Chemical Society, Syracuse Section Research Award, 1994
- Chairman of Gordon Conference on Hydrologic, Geochemical and Biological Processes in Forested Catchments, 1993
- IBM Corporation Environmental Research Program Award, 1993
- Syracuse University, College of Engineering, Anaren Microwave Award for Excellence in Engineering Scholarship, 1989
- Chairman of Working Group on Mapping Critical Loads, United Nations Convention on Long-Range Transboundary Air Pollution, 1989
- U.S. Delegate to ECE Workshop to Establish Target Loads of Sulfur and Nitrogen, 1988
- U.S. Representative on International Panel to Evaluate Role of Atmospheric Nitrogen Deposition in Surface Water Acidification, 1987
- Sigma Xi Research Award, 1987
- Sigma Xi, 1986
- Syracuse University Chancellor's Citation for Academic Achievement, 1985
- Presidential Young Investigator Award, 1984
- National Academy of Sciences, Panel on Acidification Processes, 1984
- Research Fellowship, Agricultural University, Wageningen, the Netherlands, 1983
- Chi Epsilon, 1980
- Tau Beta Pi, Maine Alpha, 1974

EXPERT WITNESS EXPERIENCE:

Court:

- Expert witness in the Maine People's Alliance and Natural Resources Defense Council, Inc. v. Holtrachem Manufacturing Company and Mallinckrodt in 2013-2014 Dr. Driscoll provided both deposition and trial testimony.
- Expert witness in United States et al. v. Westvaco Corporation and Luke Mill Company in 2012. Dr. Driscoll provided deposition and trial testimony.
- Expert witness in United States et al. v. Cinergy et al. in 2009-2010 and United States et al. v. Cinergy et al. in 2008-2009. Dr. Driscoll provided both deposition and trial testimony.
- Expert witness in North Carolina v. Tennessee Valley Authority in 2006-2008. Dr. Driscoll provided both deposition and trial testimony.
- Expert witness in United States, et al. v. American Electric Power, et al. Dr. Driscoll provided deposition testimony once in that case in August 2006.
- Expert witness in United States, et al. v. Ohio Edison, et al. Dr. Driscoll provided deposition testimony twice in that case in the spring of 2004.

EXPERT TESTIMONY:

Congressional:

- 2012 – U.S. Senate, Committee on Environment and Public Works Subcommittee on Clean Air and Nuclear Safety
- 2007 – U.S. House of Representatives House Subcommittee on Water Resources and Environment Hearing on Nonpoint Source Pollution: Atmospheric Deposition and Water Quality
- 2001 – U.S. House of Representatives Committee on Science Hearing on Acid Rain: The State of Science and Research Needs for the Future

1988 – Senate Commerce Committee Hearing on the Role of Atmospheric Deposition in Eutrophication of Coastal Waters: Atmospheric Nitrogen Deposition and Watershed Nitrogen Losses

State Legislature:

2009 – New York State Assembly Subcommittee on Environmental Conservation Hearing on Mercury Exposure

2005 – New York State Assembly Subcommittee on Environmental Conservation Hearing on Water Quality in the Adirondacks

PUBLICATIONS: (*indicates non peer-reviewed publication; over 410 peer-reviewed publications)

Books:

Pardo, L.H., M.J. Robin-Abbott, C.T. Driscoll (eds). 2011. Assessment of Nitrogen Deposition Effects and Empirical Critical Loads of Nitrogen for Ecoregions of the United States. Gen. Tech. Rep. NRS-80. Newtown Square, PA: U.S. Department of Agriculture, Forest Service, Northern Research Station. 291 p.

Peters, D.P.C., C.M. Laney, A.E. Lugo, S.L. Collins, C.T. Driscoll, P.M. Groffman, J.M. Grove, A.K. Knapp, T.K. Kratz, M.D. Ohman, R.B. Waide, and J. Yao. 2011. Long-term Trends in Ecological Systems: A Basis for Understanding Responses to Global Change. USDA Agricultural Research Service Publication No. 1931. Washington, DC. 378 p.

Jenkins, J., K. Roy, C. Driscoll, C. Buerkett. 2007. Acid Rain and the Adirondacks: An Environmental History. Cornell University Press, Cornell, NY. 246 p.

Driscoll, C.T. (ed.) 1996. Experimental Watershed Liming Study. Kluwer Academic Publishers, Dordrecht, the Netherlands. 248 p.

Binkley, D., C.T. Driscoll, H.L. Allen, P. Schoenberger and D. McAvoy. 1989. Impacts of Acidic Deposition: Context and Case Studies of Forest Soils in the Southeastern U.S., Ecological Studies 72. Springer-Verlag, New York. 149 p.

Articles in Press or Early Online:

Driscoll, C. T., K. M. Driscoll, H. Fakhraei, and K. Civerolo. in press. Long-term Temporal Trends and Spatial Patterns in the Acid-Base Chemistry of Lakes in the Adirondack Region of New York in Response to Decreases in Acidic Deposition. Atmospheric Environment.

Fakhraei, H., C. T. Driscoll, J. R. Renfro, M. A. Kulp, T. Blett, E. F. Brewer, and J. Schwartz. in press. Critical Loads and Exceedances for Nitrogen and Sulfur Atmospheric Deposition in Great Smoky Mountains National Park, USA. Ecosphere.

Gerson, J. R. and C. T. Driscoll. in press. Is mercury in remote forested watershed in the Adirondack Mountains responding to recent decreases in emissions? Environmental Science and Technology.

Articles in Review:

Arseneau, K. M. A., C. T. Driscoll, C. M. Cummings, G. Pope, and B. F. Cumming. in review. Adirondack (NY, USA) reference lakes show a pronounced shift in chrysophyte species composition since ca. 1900. Journal of Paleolimnology.

Belyazid, S., J. Phelan, C. Clark, L. Adams, B. Nihlgard, H. Sverdrup, C. T. Driscoll, I. Fernandez, J. Aherne, S. W. Bailey, M. Arsenault, N. L. Cleavitt, B. Engstrom, R. Dennis, D. Sperduto, and D. Werier. in review. Assessing the effect of climate change and air pollution on biogeochemistry and

- plant diversity in Northeastern U.S. hardwood forests: Step 1 model setup and evaluation. *Water Air and Soil Pollution*.
- Berton, R., D. G. Chandler, and C. T. Driscoll. in review. Discharge responses to regime shifts of AMO and NAO in the northeastern United States. *Hydrological Sciences Journal*.
- Bushey, J. T., P. M. Groffman, C.T. Driscoll and G. T. Fisher. in review. Mercury patterns and flux under base flow conditions in an urban watershed ecosystem. *Environmental Pollution*.
- Capps, S. L., C. T. Driscoll, H. Fakhraei, P. H. Templer, K. J. Craig, J. B. Milford, and K. F. Lambert. in review. Estimating potential productivity co-benefits for crops and trees from reduced ozone with U.S. coal power plant carbon standards. *Journal of Geophysical Research: Atmospheres*.
- Caputo, J., C. Beier, H. Fakhraei, and C. T. Driscoll. in review. Impacts of acidification and potential recovery on the expected value of recreational fisheries in Adirondack lakes (USA). *Environ Sci Technol*.
- Christenson, L. M., H. Clark, L. Livingston, E. Hefferenan, J. L. Campbell, C. T. Driscoll, P. M. Groffman, T. J. Fahey, M. C. Fisk, M. J. Mitchell, and P. H. Templer. in review. Winter climate change and soil faunal distribution and abundance: Implications for N cycling in the northern forest. *Northeastern Naturalist*.
- Denkenberger, J. S., C. T. Driscoll, B. A. Branfireun, A. Warnock, and E. Mason. in review. Watershed influences on mercury in tributaries to Lake Ontario. *Biogeochemistry*.
- Driscoll, C. T., H. Fakhraei, C. E. Johnson, and K. M. Driscoll. in review. Response of ecosystems of the Adirondack region of New York to decreases in acid deposition: A roadmap to recovery? *BioScience*.
- Eger, C., D. G. Chandler, B. Kasae Roodsari, C. Davidson, and C. T. Driscoll. in review. Water Budget Triangle: Framework to compare the hydrologic function of stormwater infrastructure. *Ecological Engineering*.
- Fakhraei, H., C. T. Driscoll, M. Kulp, J. Renfro, T. Blett, P. Brewer and J. Schwartz. in review. Sensitivity and uncertainty analysis of PnET-BGC to inform the development of Total Maximum Daily Loads of acidity in the Great Smoky Mountains National Park. *Environmental Modelling & Software*.
- Galicinao, G. A., M. T. Auer, D. A. Matthews, N. P. Revsbech, S. Todorova, S. W. Effler, and C. T. Driscoll. in review. Microprofiling and microcosm studies of methylmercury flux inhibition in lake sediments amended with nitrate and oxygen. *Environmental Research*.
- Todorova, S., C. T. Driscoll, D. A. Matthews, S. W. Effler, M. Montesdeoca, and D. Lichtenstein. in review. Evaluating the drivers for the seasonal and long-term changes of mercury concentrations in mixed zooplankton communities in a freshwater lake. *Science of the Total Environment*.
- Warren, D. R., C. E. Kraft, D. C. Josephson and C. T. Driscoll. in review. Acid Rain Recovery, Changing Climate and the future of Coldwater Fisheries. *Global Change Biology*.
- Yang, Y., R. D. Yanai, M. R. Montesdeoca, and C. T. Driscoll. in review. Measuring mercury in wood: Important but challenging. *Science of the Total Environment*.
- Yu, R.-Q., I. Adatto, J. K. Schaefer, T. Barkay, and M. E. Hines. in review. Bacterial diversity in an acidic freshwater wetland: Potential links to mercury methylation. *Journal of Geological Letters*

Articles Published:

- Baldigo, B. P., K. M. Roy and C. T. Driscoll. 2016. Response of fish assemblages to declining acidic deposition in Adirondack Mountain lakes 1984-2012. *Atmospheric Environment*. doi:10.1016/j.atmosenv.2016.06.049.

- Berton, R., C. T. Driscoll and D. G. Chandler. 2016. Changing climate increases discharge and attenuates its seasonal distribution in the northeastern United States. *Journal of Hydrology:Regional Studies* 5:164-178 doi:10.1016/j.ejrh.2015.12.057.
- Buonocore, J. J., K. F. Lambert, D. Burtraw, S. Sekar, and C. T. Driscoll. 2016. An analysis of costs and co-benefits for a U.S. power plant carbon standard. *Plos One*, 11(6), e0156308. doi:10.1371/journal.pone.0156308
- Carpenter, C. M. G., D. L. Todorov, C. T. Driscoll, and M. R. Montesdeoca. 2016. Water quantity and quality response of a green roof to storm events: Experimental and monitoring observations. *Environmental Pollution*.
- Crumley, K. M., M. A. Teece, J. B. Crandall, A. K. Sauer, and C. T. Driscoll. 2016. Effects of nitrogen deposition on nitrogen acquisition by *Sarracenia purpurea* in the Adirondack Mountains, New York, USA. *The Journal of the Torrey Botanical Society* 143:8-20.
- Durán, J., J. L. Morse, P. M. Groffman, J. L. Campbell, L. M. Christenson, C. T. Driscoll, T. J. Fahey, M. C. Fisk, G. E. Likens, J. M. Melillo, M. J. Mitchell, P. H. Templer and M. A. Vadeboncoeur. 2016. Climate change decreases nitrogen pools and mineralization rates in northern hardwood forests. *Ecosphere* 7 (3) e01251.10.1002/ecs2.1251.
- Fuss, C., C. T. Driscoll, M. B. Green, and P. M. Groffman. 2016. Hydrologic flowpaths during snowmelt in forested headwater catchments under differing winter climatic and soil frost regimes. *Hydrological Processes*. DOI: 10.1002/hyp.10956.
- Gerson, J. R., C. T. Driscoll, and K. M. Roy. 2016. Patterns of nutrient dynamics in Adirondack lakes recovering from acid deposition. *Ecological Applications*. doi:10.1890/15-1361.1.
- Gustin, M.S., D. C. Evers, M. S. Bank, A. Hammerschmidt, A. Pierce, N. Basu, J. D. Blum, P. Bustamante, C. Chen, C. T. Driscoll, M. Horvat, D. Jaffe, J. Pacnya, N. Pirrone and N. E. Selin. 2016. Importance of Integration and Implementation of Emerging and Future Mercury Research into the Minamata Convention. *Environmental Science and Technology* 50: 2767-2770.
- Kang, P.-G., M. J. Mitchell, P. J. McHale, C. T. Driscoll, M. R. McHale, S. P. Inamdar, and J.-H. Park. 2016. Important of within-lake processes in affecting the dynamics of dissolved organic carbon and dissolved organic and inorganic nitrogen in an Adirondack forested lake/watershed. *Biogeosciences* 13: 2787-2801.
- Luo, Y., L. Duan, C. T. Driscoll, G. Xu, M. Shao, M. Taylor, S. Wang, and J. Hao. 2016. Foliage/atmosphere exchange of mercury in a subtropical coniferous forest in south China, *Journal of Geophysical Research: Biogeosciences*, 121, doi:10.1002/2016JG003388.
- Pourmokhtarian, A., C. T. Driscoll, J. Campbell, K. Hayhoe, A. M. K. Stoner, M. B. Adams, D. Burns, I. Fernandez, M. J. Mitchell, J. B. Shanley. 2016. Modeled Ecohydrological responses to climate change at seven small watersheds in the northeastern U.S. *Global Change Biology*. doi:10.1111/gcb.13444
- Rosi-Marshall, E. J., E. S. Bernhardt, D. C. Buso, C. T. Driscoll and G. E. Likens. 2016. Acid rain mitigation experiment shifts a forested watershed from a net sink to a net source of nitrogen. *PNAS*, 113(27), 7580–7583. doi:10.1073/pnas.1607287113.
- Shao, S., C. T. Driscoll, C. E. Johnson, T. J. Fahey, J. J. Battles, and J. D. Blum. 2016. Long-term responses in soil solution and stream-water chemistry at Hubbard Brook after experimental addition of wollastonite. *Environmental Chemistry*, 13(3), 528-540. doi:10.1071/EN15113.
- Sunderland, E., C. T. Driscoll, J. Hammitt, P. Grandjean, J. Evans, J. D. Blum, C. Chen, D. C. Evers, D. Jaffe, R. Mason, S. Goho, and W. Jacobs. 2016. Benefits of regulating hazardous air pollutants from coal and oil-fired utilities in the United States. *Environmental Science & Technology* 50: 2117 -2120.

- Templer, P. H., K. F. Lambert, M. Weiss, J. S. Baron, C. T. Driscoll, and D. R. Foster. 2016. Using science-policy integration to improve ecosystem science and inform decision-making: Lessons from U.S. LTERs. Special Session at 100th Ecological Society of America Meeting in Baltimore, MD, 12 August 2015, Meeting Reviews. *Bulletin of the Ecological Society of America* 97:123-128.
- Blackwell, B. D., and C. T. Driscoll. 2015. Deposition of mercury in forests along a montane elevation gradient. *Environmental Science & Technology* 49:5363-5370.
- Blackwell, B. D., and C. T. Driscoll. 2015. Using foliar and forest floor mercury concentrations to assess spatial patterns of mercury deposition. *Environmental Pollution* 202:126-134.
- *Driscoll, C. T., C. G. Eger, D. G. Chandler, C. I. Davidson, B. K. Roodsari, C. D. Flynn, K. F. Lambert, N. D. Bettez, and P. M. Groffman. 2015. *Green Infrastructure: Lessons from Science and Practice*. A publication of the Science Policy Exchange. 32 pages.
- Driscoll, C. T., K. F. Lambert, D. Burtraw, J. J. Buonocore, S. B. Reid, and H. Fakhraei. 2015. US power plant carbon standards and clean air and health co-benefits. *Nature Climate Change* 5:535-540.
- Fahey, T. J., P. H. Templer, B. T. Anderson, J. J. Battles, J. G. Campbell, C. T. Driscoll, A. J. Fusco, M. B. Green, K.-A. S. Kassam, N. L. Rodenhouse, L. Rustad, P. G. Schaberg, and M. A. Vadeboncoeur. 2015. The promise and peril of intensive-site-based ecological research: Insights from the Hubbard Brook ecosystem study. *Ecology* 96:885-901.
- Fakhraei, H., and C. T. Driscoll. 2015. Proton and aluminum binding properties of organic acids in surface waters of the Northeastern, USA. *Environmental Science & Technology* 49:2939-2947.
- Fenn, M. E., C. T. Driscoll, Q. Zhou, L. E. Rao, T. Meixner, E. B. Allen, F. Yuan, and T. J. Sullivan. 2015. Use of combined biogeochemical model approaches and empirical data to assess critical loads of nitrogen. Chapter 10. *In* W. De Vries, J.-P. Hettelingh, and M. Posch, editors. *Critical Loads and Dynamic Risk Assessments: Nitrogen, Acidity and Metals for Terrestrial and Aquatic Ecosystems*. Springer, Dordrecht, The Netherlands.
- Fuss, C. B., C. T. Driscoll, and J. L. Campbell. 2015. Recovery from chronic and snowmelt acidification: Long-term trends in stream and soil water chemistry at the Hubbard Brook Experimental Forest, New Hampshire, USA. *Journal of Geophysical Research Biogeosciences* 120:2360-2374.
- Todorova, S., C. T. Driscoll, D. A. Matthews, and S. W. Effler. 2015. Zooplankton community changes confound the biodilution theory of methylmercury accumulation in a recovering mercury-contaminated lake. *Environmental Science & Technology* 49:4066-4071.
- Zhou, Q., C. T. Driscoll, and T. J. Sullivan. 2015. Responses of 20 lake-watersheds in the Adirondack region of New York to historical and potential future acidic deposition. *Science of the Total Environment* 511:186-194.
- Zhou, Q., C. T. Driscoll, T. J. Sullivan, and A. Pourmokhtarian. 2015. Factors influencing critical loads and target loads for the acidification of lake-watersheds in the Adirondack region of New York. *Biogeochemistry* 124:353-369.
- Zhou, Q., C. T. Driscoll, S. E. Moore, M. A. Kulp, J. R. Renfro, J. S. Schwartz, M. J. Cai, and J. A. Lynch. 2015. Developing critical loads of nitrate and sulfate in the Great Smoky Mountains National Park, United States. *Water Air and Soil Pollution* 226:1-16.
- Battles, J. J., T. J. Fahey, C. T. Driscoll, J. D. Blum, and C. E. Johnson. 2014. Restoring soil calcium reverses forest decline. *Environmental Science & Technology Letters* 1:15-19.
- Blackwell, B. D., C. T. Driscoll, J. A. Maxwell, and T. M. Holsen. 2014. Changing climate alters inputs and pathways of mercury deposition to forested ecosystems. *Biogeochemistry* 119:215-228.
- Denkenberger, J. S., C. T. Driscoll, B. A. Branfireun, A. Warnock, and E. Mason. 2014. A fluvial mercury budget for Lake Ontario. *Environmental Science & Technology* 48:6107-6114.

- Dib, A. E., C. E. Johnson, C. T. Driscoll, T. J. Fahey, and K. Hayhoe. 2014. Simulating effects of changing climate and CO₂ emissions on soil carbon pools at the Hubbard Brook Experimental Forest. *Global Change Biology* 20:1643-1656.
- Durán, J., J. L. Morse, P. M. Groffman, J. L. Campbell, L. M. Christenson, C. T. Driscoll, T. J. Fahey, M. C. Fisk, M. J. Mitchell, and P. H. Templer. 2014. Winter climate change affects growing-season soil microbial biomass and activity in northern hardwood forests. *Global Change Biology* 20:3568-3577.
- Fakhraei, H., C. T. Driscoll, P. Selvendiran, J. V. DePinto, J. Bloomfield, S. Quinn, and C. Rowell. 2014. Development of a total maximum daily load (TMDL) for acid-impaired lakes in the Adirondack region of New York. *Atmospheric Environment* 95:277-287.
- Johnson, C. E., C. T. Driscoll, J. D. Blum, T. J. Fahey, and J. J. Battles. 2014. Soil chemical dynamics after calcium silicate addition to a northern hardwood forest. *Soil Science Society of America Journal* 78:1458-1468.
- Levine, C. R., R. D. Yanai, G. G. Lampman, D. A. Burns, C. T. Driscoll, G. B. Lawrence, J. A. Lynch, and N. Schoch. 2014. Evaluating the efficiency of environmental monitoring programs. *Ecological Indicators* 39:94-101.
- Pinkney, A. E., C. T. Driscoll, D. C. Evers, M. J. Hooper, J. Horan, J. W. Jones, R. S. Lazarus, H. G. Marshall, A. Milliken, B. A. Rattner, J. Schmerfeld, and D. W. Sparling. 2014. Interactive effects of climate change with nutrients, mercury, and freshwater acidification on key taxa in the North Atlantic Landscape Conservation Cooperative region. *Integrated Environmental Assessment and Management* 11:355-369.
- Schoch, N., M. J. Glennon, D. C. Evers, M. Duron, A. K. Jackson, C. T. Driscoll, J. W. Ozard, and A. K. Sauer. 2014. The impact of mercury exposure on the common loon (*Gavia immer*) population in the Adirondack Park, New York, USA. *Waterbirds* 37:133-146.
- Schoch, N., A. K. Jackson, M. Duron, D. C. Evers, M. J. Glennon, C. T. Driscoll, X. Yu, H. Simonin, and A. K. Sauer. 2014. Wildlife criterion value for the common loon (*Gavia immer*) in the Adirondack Park, New York, USA. *Waterbirds* 37:76-84.
- Todorova, S., C. T. Driscoll, S. W. Effler, S. O'Donnell, D. A. Matthews, D. L. Todorov, and S. Gindlesperger. 2014. Changes in the long-term supply of mercury species to the upper mixed waters of a recovering lake. *Environmental Pollution* 185:314-321.
- Townsend, J., C. T. Driscoll, C. Rimmer, and K. McFarland. 2014. Avian, salamander and forest floor mercury concentrations increase with elevation in a terrestrial ecosystem. *Environmental Toxicology and Chemistry* 33:208-215.
- Yu, X., C. T. Driscoll, R. A. F. Warby, M. Montesdeoca, and C. E. Johnson. 2014. Soil mercury and its response to atmospheric mercury deposition across the northeastern United States. *Ecological Applications* 24:812-822.
- Blackwell, B., C. T. Driscoll, M. Spada, S. Todorova, and M. Montesdeoca. 2013. Evaluation of zebra mussels (*Dreissena polymorpha*) as biomonitors of mercury contamination in aquatic ecosystems. *Environmental Toxicology and Chemistry* 32:638-643.
- Bytnerowicz, A., M. Fenn, S. McNulty, F. Yuan, A. Pourmokhtarian, C. T. Driscoll, and T. Meixner. 2013. Interactive effects of air pollution and climate change on forest ecosystems in the United States: Current understanding and future scenarios. Pages 333-369 in R. Matyssek, N. Clarke, P. Cudlin, T. N. Mikkelsen, J.-P. Tuovinen, G. Wieser, and E. Paoletti, editors. *Developments in Environmental Science. Climate Change, Air Pollution and Global Challenges*. Elsevier Physical Sciences Series.
- Demers, J. D., J. B. Yavitt, C. T. Driscoll, and M. Montesdeoca. 2013. Legacy mercury and stoichiometry with C, N, & S in soil, pore water, and stream water across the upland-wetland interface: The influence of hydrogeologic setting. *Journal of Geophysical Research* 118:825-841.

- *Driscoll, C. T. 2013. Acid and Mercury Deposition Effects on Forest and Freshwater Aquatic Ecosystems. Pages 1-14 in S. A. Levin, editor. Encyclopedia of Biodiversity, second edition. Elsevier Inc., Waltham, MA: Academic Press.
- *Driscoll, C. T. 2013. Ecological effects of acidic deposition. Reference Module in Earth Systems and Environmental Sciences. Elsevier.
- *Driscoll, C.T., P.M. Groffman, J.M. Blair, A.E. Lugo, C.M. Laney, and D.P.C. Peters. 2013. Cross-site comparisons of precipitation and surface water chemistry. In Long-Term Trends in Ecological Systems: A Basis For Understanding Responses to Global Change. USDA Agricultural Research Service Publication, Washington, DC.
- Driscoll, C. T., A. Lee, M. Montesdeoca, D. A. Matthews, and S. W. Effler. 2013. Mobilization and toxicity potential of aluminum from alum floc deposits in Kensico Reservoir, NY. Journal of the American Water Resources Association (JAWRA) 50:143-152.
- Driscoll, C. T., R. P. Mason, H. M. Chan, D. J. Jacob, and N. Pirrone. 2013. Mercury as a global pollutant: Sources, pathways, and effects. Environmental Science & Technology 47:4967-4983.
- Green, M. B., A. S. Bailey, S. W. Bailey, J. J. Battles, J. L. Campbell, C. T. Driscoll, T. J. Fahey, L. C. Lepine, G. E. Likens, S. V. Ollinger, and P. G. Schaberg. 2013. Reply to Smith and Shortle: Lacking evidence of hydraulic efficiency changes. Proceedings of the National Academy of Sciences of the United States of America 110:E3740.
- Green, M. B., A. S. Bailey, S. W. Bailey, J. J. Battles, J. L. Campbell, C. T. Driscoll, C. Eagar, L. Lepine, G. E. Likens, S. V. Ollinger, and P. G. Schaberg. 2013. Decreased water flowing from a forest amended with calcium silicate. Proceedings of the National Academy of Sciences 110:5999-6003.
- Matthews, D. A., D. B. Babcock, J. G. Nolan, A. R. Prestigiacomo, S. W. Effler, C. T. Driscoll, S. Todorova, and K. M. Kuhr. 2013. Whole-lake nitrate addition for control of methylmercury in mercury-contaminated Onondaga Lake, NY. Environmental Research 125:52-60.
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TECHNICAL PRESENTATIONS 2015-2016:

“The Road to Recovery of the Adirondacks from Acid Deposition: Are We There Yet?” Public lecture presented at the annual meeting of the Protect the Adirondacks, Garnet Hill Lodge, North Creek, NY 8 July 2016.

“The Recovery of Adirondack Ecosystems to Decreases in Acid Deposition: Are We There Yet?” presentation given at the annual Protect the Adirondacks meeting, North River, NY, 9 July 2016.

“The Physical Setting and Water Quality History of Onondaga Lake” presented at the Honeywell Summer Science Camp for Middle School Students, Onondaga Lake, NY 10 July 2016.

“Long-term trends and Spatial Patterns of Atmospheric Deposition and the Response of Surface Water Chemistry in Remote Watersheds of the Eastern U.S.” presented at the public lecture at the Hubbard Brook Research Foundation, West Thornton, NH 11 July 2016.

“Natural Loss from Soil and Stream Water in a Wollastinite-treated Watershed” presented at the Annual Hubbard Brook Cooperators Meeting, West Thornton, NH 13 July 2016.

“Wollastinite Addition Experiment” presented at a field meeting at the Hubbard Brook Committee of Scientists West Thornton, NH 14 July 2016.

"Mercury Contamination and Remediation of Onondaga Lake, New York, USA" presentation given at the Syracuse Rotary meeting, Syracuse, NY 3 June 2016.

“U.S. Power Plant Carbon Standards and the Potential for Clean Air, Human Health and Ecosystem Co-benefits” presentation given for the IHS Seminar Series at the Massachusetts Institute of Technology, Cambridge, MA, 12 April 2016.

“Long-term Trends and Spatial Patterns in Acid Deposition and the Acid-base Response of Lakes in the Adirondack Region of New York to These Changes” presentation given at the Environmental Seminar Series for the Department of Civil and Environmental Engineering at Syracuse University, Syracuse, NY, 21 March 2016.

“Co-benefits Associated with Policy Options for US Power Plant Emission Controls of Carbon Dioxide” presentation given at Arizona State University, Phoenix, AZ, 18 March 2016.

“Air Quality, Health and Ecosystem Co-Benefits of Policy Options for a U.S. Power Plant Carbon Standard” presentation given to the Chemistry Department for the Spring Seminar Series at SUNY College of Environmental Science and Forestry, 4 March 2016.

“Long-term Patterns in Acid Deposition and the Acid-base Chemistry of Adirondack Lakes” presentation given at the 13th Adirondack Research Forum at the Adirondack League Club, Old Forge, NY, 2 March 2016.

"Mercury Contamination and Remediation of Onondaga Lake, New York, USA" presentation given at the Golisano Institute for Sustainability, Rochester Institute for Technology, Rochester, NY 29 February 2016.

“The Everglades and Challenges for Restoration” presentation given to the Zoology Department, Tel Aviv University, Tel Aviv, Israel, 25 November 2015.

“Air Quality, Health and Ecosystem Co-Benefits of Policy Options for a U.S. Power Plant Carbon Standard” presentation given to The Hebrew University of Jerusalem, Institute of Earth Sciences, Jerusalem, Israel, 25 November 2015.

“Air Quality, Health and Ecosystem Co-Benefits of Policy Options for a U.S. Power Plant Carbon Standard” presentation given to School of Marine Sciences and School of Public Health, University of Haifa, Israel, 23 November 2015.

“Mercury Deposition and Effects in Forest and Aquatic Ecosystems in the Eastern U.S.” presentation given to the Kinneret Limnological Laboratory-IOLR, Midgal, Israel, 22 November 2015.

“Mercury Dynamics in Marine Ecosystems: Results from the Coastal and Marine Mercury Ecosystem Research Collaborative (C-MERC)” presentation given at the Batsheva de Rothschild Seminar: Environmental Science and Policy-Challenges in the South Eastern Mediterranean Conference, Nir Etzion, Mt. Carmel, Israel, 16 November 2015.

“Air Quality, Health and Ecosystem Co-Benefits of Policy Options for a U.S. Power Plant Carbon Standard” presentation given to GEO/PSC 360 “Sustainability Science and Policy: The Threat of Climate Change” class, Syracuse University, Syracuse, NY, 11 November 2015.

“Inputs, Fate and Effects of Mercury in the Northeast” presentation given at the State University of New York College of Environmental Science and Forestry student chapter of the New York Water Environment Association (NYWEA) seminar series, Syracuse, NY, 3 November 2015.

“What is Environmental Engineering” presentation given to ECS 101 “Introduction to Engineering and Computer Science” class, Syracuse University, Syracuse, NY, 3 November 2015.

“Inputs, Fate and Effects of Mercury in the Northeast” presentation given at the Wolman Department Seminar at Johns Hopkins University, Baltimore, MD, 27 October 2015.

“Acid Rain in North America: What is Our Progress Toward Recovery” Keynote Speaker presentation given at the 9th edition of the International Acid Rain Conference, Rochester, NY, 20 October 2015.

“Civil and Environmental Engineering” presentation given at Syracuse University’s Fall Student Reception program, Syracuse University, Syracuse, NY, 12 October 2015.

“Air Pollution and Climate Change Effects Research” presentation given to the National Science Foundation’s External Advisory Committee Members for Syracuse University’s EMPOWER (Education Model Program on Water-Energy Research) program, Syracuse University, Syracuse, NY, 22 September 2015.

“An Overview of Mercury Contamination and Remediation of Onondaga Lake, New York, USA” presentation given via webinar to the Delta Tributaries Mercury Council, West Sacramento, CA, 8 September 2015.

“An Overview of Mercury Contamination and Remediation of Onondaga Lake, New York, USA” presentation given for the Donovan Maddox Distinguished Engineering Chair and the Jack Maddox Distinguished Engineering Chair Review, Lubbock, TX, 3 September 2015.

“Mercury Inputs, Cycling, and Trophic Transfer in the Environment” presentation given at the Lake Michigan Air Directors Consortium’s “Mercury in the Midwest” (LADCO) conference, Indianapolis, IN, 20 August 2015.

“Effects of Changing Atmospheric Deposition on the Structure and Function of the Northern Forest: Long-term Measurements, Experiments and Future Model Projections from the Hubbard Brook Experimental Forest, New Hampshire, USA” presentation given at the 100th Ecological Society of America Meeting (ESA), Baltimore, MD, 13 August 2015.

“Using Science-policy Integration to Improve Ecosystem Science and Inform Decision-making: Lessons from U.S. LTERs” presentation given at the 100th Ecological Society of America Meeting (ESA), Baltimore, MD, 12 August 2015.

“PnET-BGC Applications to Hubbard Brook and Beyond” presentation given at the Hubbard Brook Committee of Scientists Meeting, Thornton, NH, 10 July 2015.

“Nutrient Loss From Soil and Stream Water in a Wollastonite Treated Watershed” presentation given at the Hubbard Brook Ecosystem Study 52nd Annual Cooperators’ Meeting, Thornton, NH, 8 July 2015.

“Response of the Mercury Cycle in an Adirondack, USA Lake Watershed to Recovery from Decreasing Acid Deposition and Lime Application” presentation given at the 12th International Conference on Mercury as a Global Pollutant (ICMGP), Jeju, Korea, 16 June 2015.

“Providence ICMGP 2017 Integrating Mercury Research and Policy in a Changing World” presentation given at the 12th International Conference on Mercury as a Global Pollutant (ICMGP), Jeju, Korea, 17 June 2015.

“Mitigating Mercury Bioaccumulation in Contaminated Aquatic Ecosystems” presentation given at the 12th International Conference on Mercury as a Global Pollutant (ICMGP), Jeju, Korea, 16 June 2015.

“Mercury Releases to Land and Water (Article 9)” presentation given at the 12th International Conference on Mercury as a Global Pollutant (ICMGP), Jeju, Korea, 15 June 2015.

“Cross Site Analysis of Projections of the Biogeochemical Responses of Forested Watersheds in the Northeastern U.S. to Future Climate Change and Increasing CO₂ over the 21st Century Using a Dynamic Model (PnET-BGC)” presentation given at the 2015 Joint Assembly meeting, Montreal, CA, 4 May 2015.

“Air Quality, Health and Ecosystem Co-benefits of Policy Options for a U.S. Powerplant Carbon Standard” presentation given for the Biogeosciences Ph.D. program weekly seminar series at Boston University, Boston, MA 29 April 2015.

“An Overview of Mercury Contamination and Remediation of Onondaga Lake, New York, USA” presentation given to Newhouse class NEW 405, Public Affairs Reporting, Syracuse University, Syracuse, NY, 2 April 2015.

“Acid Rain in the Adirondacks: A Roadmap to Recovery” presentation given at the New York State Office of the Attorney General, New York, NY, 20 March 2015.

“Civil and Environmental Engineering” presentation given at the Civil and Environmental Engineering Spring Reception, Syracuse University, Syracuse, NY, 16 February 2015.

“Green Infrastructure: Lessons From Science and Practice” presentation given to the New York State Department of Environmental Protection, New York, NY, 13 February 2015.

“Monitoring to Evaluate Temporal Trends and Spatial Patterns in Mercury Concentrations in Fish of New York State” presentation given at the NYSERDA Monitoring to Evaluate Temporal Trends and Spatial Patterns in Mercury Concentrations in Fish of New York State” project meeting at Syracuse University, Syracuse, NY, 12 February 2015.

“Critical Loads 101” presentation given at NYSERDA’s Sulfur and Nitrogen Monitoring and CL Workshop, Minnow Brook Lodge, Blue Mountain Lake, NY, 9-10 February 2015.

“Effects of Changing Climate on the Structure and Function of the Northern Forest: Long-Term Measurements, and Experiments and Future Model Projections from the Hubbard Brook Experimental Forest, NH, USA” presentation given at the National Institute of Environmental Research (NIER), Ministry of Environment, Republic of Korea, 21 January 2015.

PROFESSIONAL ACTIVITIES:

Societies: American Chemical Society
 Association of Environmental Engineering and Science Professors
 American Geophysical Union
 American Society of Civil Engineers

Committees:

Board of Directors, Hubbard Brook Research Foundation, 2015-present
Member, Executive Board of the National Science Foundation’s Long-Term Ecological Research Network, 2014-present

Member, Clean Air Scientific Advisory Committee (CASAC), Review of the Secondary National Ambient Air Quality Standards for Oxides of Nitrogen and Oxides of Sulfur, U.S. Environmental Protection Agency, 2014-present

Member, Steering Committee for 2015 International Conference for Mercury as a Global Pollutant, Jeju Island, Korea, 2013-present

Chair, Organizing Committee for 2017 International Conference for Mercury as a Global Pollutant, 2013-present

Member, President's Advisory Council, Cary Institute, 2012-2014

Reviewer, Royal Technical University, Stockholm, June 2012

Member, Steering Committee for Science & Policy Exchange, Harvard University, Syracuse University, Cary Institute of Ecosystem Studies, Hubbard Brook Research Foundation, University of New Hampshire, The Marine Biological Laboratory of Woods Hole, 2011-present

Board Member, National Research Council Board of Environmental Studies and Toxicology, 2011-2013, 2014-present

Member, U.S. Environmental Protection Agency (EPA) Science Advisory Board (SAB) Panel, Review of the Agency's Draft Technical Support Document: National-Scale Mercury Assessment Supporting the Appropriate and Necessary Finding for Coal and Oil-fired Electric Generating Units, 2011

Reviewer, Vietnam Education Foundation, National Academy of Sciences, 2011

Member, Provincial Data Review Panel, Province of Alberta, 2010-2011

Associate Editor, Biogeochemistry, 2009-present

Member, Advisory Committee FOCUS U.S. Critical Loads program, Multi-Federal Agency Initiative, 2009-present

Member, Advisory Committee on Mercury Pollution, New York State, 2009-2014

Member, Advisory Committee for Critical Zone Observatory Program, National Science Foundation, 2009-2013

Member, U.S. National Committee for Soil Science, The National Academies, 2008-2010

Member, Clean Air Scientific Advisory Committee (CASAC), Review of the Secondary National Ambient Air Quality Standards for Oxides of Nitrogen and Oxides of Sulfur, U.S. Environmental Protection Agency, 2007-2011

Member, Ecotrends Committee, Long-Term Ecological Research Network, 2007-2010

Member, National Research Council Committee on Everglades Restoration, 2006-present

Member, National Mercury Monitoring Steering Committee for Building a National Mercury Monitoring Network (MercNet), Multi-Federal Agency Initiative, 2006-2014

Member, National Research Council (NRC) Committee on Collaborative Larger Scale Engineering Analysis for Environmental Research (CLEANER), 2005-2006

Co-Chair, Science Committee for Collaborate Larger Scale Engineering Analysis for Environmental Research (CLEANER), 2005-2007

Member, Heinz Center Air Quality Working Group, State of the Nations Ecosystems, 2005-2008

Chair, Ecological Effects Subcommittee for the Advisory Council on Clean Air Compliance Analysis, U.S. Environmental Protection Agency, 2004-2009

Chair, Minnesota Sea Grant Report of the Peer Review Panel on the Development of the Watershed Analysis Risk Management Framework (WARMF) Model to Assess Mercury in the Western Lake Superior Basin, Minnesota, 2004

Member, National Mercury Monitoring Program Committee, U.S. Environmental Protection Agency, 2003-present

Member, National Research Council (NRC) Committee of Air Quality Management, 2001-2004

Member, U.S. Environmental Protection Agency Peer Review Panel for Mercury, Transport, Transformation and Fate in the Atmosphere, 2001, Washington, D.C.

Member, National Science Foundation Science and Technology (STC) Panel, 16-17 November 2000, Washington, DC

Participant, Ecological Society of America Workshop, "Atmospheric Deposition: The Ecological Response", 1-3 March 1999, Washington, DC.

Chair, Hubbard Brook Research Foundation Science Linkages Project, 1998-present

Editorial Board, Environmental Science and Policy, 1998-2002

Participant, National Science Foundation's Terrestrial Ecosystems and Global Change (TECO) competition, 11-13 May 1998, Washington, DC.

Reviewer for the Adirondack Park Agency, 1997-2002

Co-convenor of Nitrogen Cycling in Forested Catchments, an American Geophysical Union Chapman Conference, 1996

Affiliate Member, Center for Environmental Policy and Administration, Syracuse University, 1995-present

Reviewer, Swedish Environmental Protection Agency Research Program, 1994

Editorial Board, Journal of Hydrological Processes, 1994

Chairman for the Gordon Conference on Hydrologic, Geochemical and Biological Interactions in Forested Catchments, 1993

Board of Directors, Hubbard Brook Research Foundation, 1993-2011

Board of Directors, Gordon Research Conferences, 1992-1993

Groundwater Working Group, Onondaga Lake Management Conference, 1991-1994

Sediment Working Group, Onondaga Lake Management Conference, 1991-1994

Organizing Committee for the Gordon Conference on Hydrologic, Geochemical and Biological Interactions in Forested Catchments, 1991

Reviewer, Dutch Acidification Program, 1990

Chairman of Working Group on Mapping Critical Loads, United Nations Convention on Long-Range Transboundary Air Pollution, 1989

National Science Foundation, Long-Term Ecological Research Coordinating Committee, 1988-Present

American Geophysical Union, Organizing Committee for the Chapman Conference on Hydrogeochemical Responses of Forested Catchments, 1988-1989

U.S. Representative to United Nations/European Economic Community Workshop of Critical Loads of Sulfur and Nitrogen, 1988

Scientific Advisory Committee of the Hubbard Brook Ecosystem Study, 1987-Present

American Water Works Association, Joint Task Group on Aluminum for the 17th Edition of Standard Methods, 1987

International Panel on the Role of Atmospheric Nitrogen Deposition in Surface Water Acidification, 1987

Panel Reviewer Environmental Engineering Program, National Science Foundation, 1987

National Academy of Sciences, Panel on Processes of Lake Acidification, 1984

Onondaga County, Onondaga Lake Advisory Committee, 1983-Present

Board of Directors Upstate Freshwater Institute, 1981-2008

FUNDED RESEARCH ACTIVITIES:

Long-Term Environmental Monitoring, Evaluation and Protection (EMEP) Program: Acid Deposition and Mercury Research, New York State Energy Research and Development Authority (with P. McHale, M. Mitchell, C. Demers, SUNY ESF) (2013-2017).

NRT: Education Model Program on Water-Energy Research (EMPOWER), National Science Foundation (with L. Lautz, T. Kahan, D. Torrance, SU) (4/1/15-3/31/20).

Understanding the Impacts of Ice Storms on Forest Ecosystems of the Northeastern United States, National Science Foundation (with L. Rustad, P. Schaberg, J. Campbell, USFS) (3/1/15-2/28/18).

Mercury Dynamics Influenced by Nutrient Loading in Urban Estuaries in New York, New York State Energy Research and Development Authority (with C. Chen, Dartmouth) (10/24/14-10/23/16).

Assessing Biological Mercury Hotspots in Montane Ecosystems of the Northern Forest (with J. Demers, Univ. MI; D. Ross, Univ VT; J. Shanley, USGS; A. Sauer, BRI) Northeastern States Research Cooperative (9/8/14-9/17/17).

Carbon Standards Co-benefits Study, Harvard University, The William and Flora Hewlett Foundation (12/2/13-12/31/15).

Monitoring to Evaluate Temporal Trends and Spatial Patterns in Mercury Concentrations in Fish in NYS, New York State Energy Research and Development Authority (8/7/13-8/6/16).

The Effects of Watershed and Stream Liming on Mercury Dynamics of Honnedaga Lake (with D. Burns, K. Murray USGS) New York State Energy Research and Development Authority (6/6/13-6/5/16).

Long-Term Ecological Research at Hubbard Brook Experimental Forest (with T.J. Fahey, Cornell University), National Science Foundation (12/1/11-10/31/16).

Application of a Dynamic Watershed Biogeochemical Model (PnET-BGC) to Evaluate the Recovery of Sensitive Aquatic Resources at Great Smoky Mountains National Park From the Effects of Acidic Deposition, National Park Service (9/25/09-12/31/15).

Green Infrastructure: Lessons from Science and Practice, Surdna Foundation (completed 2015).

Methylmercury Bioaccumulation Within Montane, Terrestrial Foodwebs in the Adirondack Park of New York (with Amy Sauer, Syracuse University) New York State Energy Research and Development Authority (completed 2015).

Response of Acidified Soils and Associated Surface Waters to Reduced Atmospheric Acid Inputs and Calcium Mitigation Strategies (with C. Johnson, Syracuse University), New York State Energy Research and Development Authority (completed 2015).

Land-Atmosphere Dynamics of Mercury and Ecological Implications for Adirondack Forest Ecosystems (with T. Holsen, Clarkson University), New York State Energy Research and Development Authority (completed 2015).

The Production and Transfer of Methylmercury within Terrestrial Foodwebs across the Northeastern Landscape, New York State Energy Research and Development Authority (completed 2015).

Hydrochemical Modeling of the Response of High Elevation Watersheds to Climate Change and Atmospheric Deposition (with J. Campbell, US Forest Service), U.S. Environmental Protection Agency STAR Program (completed 2014).

Critical Loads of Sulfur and Nitrogen Deposition to Protect and Restore Acid Sensitive Resources in the Adirondack Mountains (with T. Sullivan, E&S Environmental Chemistry Inc.), New York State Energy Research and Development Authority (completed 2014).

Evaluation of Nitrate Addition to Control Methylmercury Production in Onondaga Lake: Work Plan for 2006-2009 (with S. Effler, Upstate Freshwater Inc.), Honeywell (completed 2014).

Winter Climate Change in a Northern Hardwood Forest: Collaborative Research (with P. Groffman, Cary Institute of Ecosystem Studies), National Science Foundation (completed 2014).

Determining Total Maximum Daily Loads of Acidity for Adirondack New York Lakes, U.S. Environmental Protection Agency (completed 2013).

Evaluation and Protection of Adirondack Ecosystems: Impacts of Acid and Mercury Deposition on Watersheds (with M. Mitchell, SUNY ESF), New York State Energy Research and Development Authority (completed 2011).

Integrating Multimedia Measurements of Mercury in the Great Lakes Region (with D. Evers, BioDiversity Institute), Great Lakes Air Deposition (GLAD) Program (completed 2011)

Continuous in situ measurement of carbon quality as a tool for understanding stream mercury dynamics in northern forests (with J. Shanley, US Geological Survey), Northeastern States Research Cooperative (completed 2010).

Long-Term Ecological Research at Hubbard Brook Experimental Forest (with T.J. Fahey, Cornell University), National Science Foundation (completed 2010).

CARTI: Mercury Transport and Contamination in the Lake Ontario Basin, Syracuse University Center of Excellence (completed 2010).

Biogeochemical Modeling of Soil and Surface Water Responses to Climate Change in the Northeastern US (with J. Campbell, USDA), United States Department of Agriculture (completed 2010).

CARTI: An Intelligent Urban Environmental System (i-UES) for Central New York Water Resource Management (with S. Effler, Upstate Freshwater Institute), Syracuse University Center of Excellence (completed 2010).

Evaluation of the Use of Critical Loads to Mitigate Effects of Acidic Deposition to Forest Ecosystems in the Northeastern U.S. (with L. Pardo, USDA Forest Service), United States Department of Agriculture (completed 2010).

Atmospheric Deposition, Transport, Transformations and Bioavailability of Mercury across a Northern Forest Landscape (with T. Barkay, Rutgers University; S. J. Grimberg, T.M. Holsen, M. Twiss, Clarkson University; M. Hines, University of Massachusetts-Lowell; R. Munson, Tetra Tech, Inc.), National Science Foundation (completed 2010).

Mercury Deposition in Adirondack Region of New York, New York State Energy Research and Development Authority (completed 2010).

Development of Alternative Approaches to Assessing the Impact of Pollutants on Environmental Systems: Part 2. Development and Application of an Intelligent System for the Management of Environmental Quality in Urban Watershed Systems (with G. Seltzer, Syracuse University; S. Effler, Upstate Freshwater Inst.), U.S. Environmental Protection Agency (completed 2009).

Mercury and Methylmercury Export in Relation to DOC Quality in Upland Landscapes, Northeastern USA (with J. Shanley and G. Aiken, USGS), United States Department of Agriculture (completed 2008).

CARTI: Near-Real-Time Detection of Microbial Waterborne Agents to Inform Risk Analysis (with R. Raina, Biology Dept. Syracuse University, and M. Coleman, Syracuse Research Corporation), Syracuse University Center of Excellence (completed 2008).

Ecosystem Modeling and Sensitivity Analysis, Cadmus/Environmental Protection Agency (completed 2008).

Collaborative Research: Power System Security Enhancement via Equilibrium Modeling and Environmental Assessment (with A. Soyster, Northeastern University), National Science Foundation (completed 2007).

CLEANER: Coalition for Creation of CLEANER Project Office, University of Illinois (completed 2007).

Lake Ontario's Dynamic Coast: Analyzing Ecosystem History for Sustaining Environmental Health (with N. Hairston, Cornell University; and D. Leopold, SUNY ESF), New York State Department of Environmental Conservation (completed 2007).

Biocomplexity: Physical, Biological, and Human Interactions Shaping the Ecosystems of Freshwater Bays and Lagoons (with M. Bain et al., Cornell University), National Science Foundation (completed 2006).

Controls on Water Quality in the Croton Reservoir/Turkey Mountain Watershed (with D. Lake et al., Syracuse University), New York State Department of Transportation (completed 2006).

Assessment of the Extent to which Intensively-Studied Lakes are Representative of the Adirondack Mountains Region (with T. Sullivan, E & S Environmental Chemistry, Inc.; and J. Cosby, University of Virginia), NYSERDA (completed 2006)

Assessing the Feasibility of Rehabilitating Onondaga Lake Watershed Fisheries with Emphasis on Mercury Dynamics, Onondaga Lake Cleanup Corporation (completed 2005).

Assessing Ecosystem Response to Atmospheric Deposition in Western U.S. Mountains and Select LTER Sites (with J. Baron, Colorado State University), U.S. Environmental Protection Agency (completed 2005).

The Camille and Henry Dreyfus Foundation Postdoctoral Fellowship in Environmental Chemistry (with C. Johnson and A. Costello, Syracuse University), Camille and Henry Dreyfus Foundation, Inc. (completed 2005).

Evaluation of the Discrepancies in Sulfur Budgets in Watersheds of the Northeastern US: A Modeling and Isotopic Approach (with M. Mitchell, SUNY ESF), Northeastern States Research Cooperative (completed 2005).

Colder Soils in a Warmer World: A Snow Manipulation in a Northern Hardwood Forest Ecosystem (with P. Groffman, Institute of Ecosystem Studies; T.J. Fahey and M. Fisk, Cornell University; and J.P. Hardy, U.S. Army Cold Regions Research and Engineering Laboratory), National Science Foundation (completed 2005).

Response of Complex Ecosystems to Atmospheric Deposition (with A. Costello, C. Johnson, J. Read and P. Varshney, Syracuse University), The W.M. Keck Foundation (completed 2005).

An Integrated Assessment of the Recovery in the Catskills and Adirondacks of Surface Waters from Reduced Levels of Acid Precipitation (with D. Burns et al., U.S. Geological Survey), New York State Energy Research and Development Authority (completed 2004).

Mercury in Adirondack Wetlands, Lakes and Terrestrial Systems Project (with R. Munson) Tetra Tech, Inc. (completed 2004).

Chemical and Biological Control of Mercury Cycling in Upland, Wetland and Lake Ecosystems in the Northeastern U.S. (with J. Yavitt, Cornell University), U.S. Environmental Protection Agency (completed 2004).

The Role of Calcium Supply in the Structure and Function of a Northern Hardwood Forest (with C. Johnson, Syracuse University), National Science Foundation (completed 2004).

Long-Term Ecological Research at the Hubbard Brook Experimental Forest (with T.J. Fahey, Cornell University), National Science Foundation (completed 2004).

LTREB: Hydrologic-Nutrient Cycle in Small, Undisturbed and Human-Manipulated Watershed/Ecosystems (with G.E. Likens, Institute of Ecosystem Studies), National Science Foundation (completed 2004).

The Use of Computer Models and High Spectral Resolution Remote Sensing to Evaluate the Response of Forest and Aquatic Ecosystems to Changes in Atmospheric Deposition (with J. Aber, University of New Hampshire), U.S. Environmental Protection Agency (completed 2004).

Onondaga Lake Aquatic Habitat Restoration Project, Onondaga Lake Cleanup Corporation (completed 2002).

Effects of Atmospheric Deposition of Sulfur, Nitrogen and Mercury on Adirondack Region of New York (subcontract through SUNY-ESF with D. Raynal), New York State Energy Research and Development Authority (completed 2002).

Remote Sensed Water Quality in Onondaga Lake and the Seneca River, Syracuse City School District (completed 2001).

Mercury in Adirondack Wetlands, Lakes and Terrestrial Systems (with R. Munson, Tetra Tech, Inc.), New York State Energy Research Development Authority (completed 2001).

An Evaluation of the Recovery from Acidification of Surface Waters in the Adirondacks: Role of Watershed and Forest Maturation (with M. Mitchell, SUNY-ESF), New York State Energy Research and Development Authority (completed 2001).

Total and Methyl Mercury in Water and Sediments, New Hampshire Department of Environmental Services (completed 2001).

Snow Depth, Soil Frost and Nutrient Loss in a North Temperate Forest (with P. Groffman, Institute of Ecosystem Studies; T.J. Fahey, Cornell University; J.P. Hardy, U.S. Army Cold Regions Research and Engineering Laboratory), National Science Foundation (completed 1999).

LTREB: Hydrologic-Nutrient Cycle Interaction in Small Undisturbed and Human-Manipulated Ecosystems (with G.E. Likens, Institute of Ecosystem Studies), National Science Foundation (completed 1999).

Long-Term Ecological Research at the Hubbard Brook Experimental Forest (with T.J. Fahey, Cornell University), National Science Foundation (completed 1999).

Continuation of Adirondack Manipulation and Modeling Project (with M. Mitchell, SUNY-ESF), Empire State Electric Energy Research Corporation (completed 1998).

Mercury in Adirondack Wetlands, Lakes and Terrestrial Systems (with R. Munson, Tetra Tech, Inc.), Empire State Electric Energy Research Corporation (completed 1998).

Analysis of the Patterns on Nitrate Leaching and Surface Water Acidification in Response to Atmospheric Deposition and Land Use in the Adirondack Region on New York. Part I. Technical and Management Proposal (with W. Kretser, Adirondack Lake Survey Corporation), Niagara Mohawk Power Corporation (completed 1998).

Mercury Sampling in Onondaga Lake, Onondaga County Department of Drainage and Sanitation (completed in 1997).

Manipulation of Trifluoroacetate to Small Plots at the Hubbard Brook Experimental Forest, New Hampshire, DuPont Corporation (completed 1996).

Analysis of the Patterns of Nitrate Leaching in Response to Atmospheric Deposition of Nitrogen in the Northeastern U.S. (with M. Mitchell, SUNY ESF; J. Aber, Univ. of New Hampshire; and G. Lawrence and P. Murdoch, USGS), U.S. Environmental Protection Agency (completed 1996).

Mercury Sampling at METRO in Onondaga Lake, Stearns and Wheeler Environmental Engineers and Scientists (completed 1996).

Wetland and Watershed Mercury Cycling Project, Empire State Electric Energy Research Corporation (completed 1996).

Computer-based Models of the Effects of Atmospheric Deposition on Forest and Aquatic Ecosystems, IBM Environmental Research Program (completed 1996).

Effects of Air Quality on Ecosystems of the Adirondack Mountains of New York: Field Experimentation (with M. Mitchell, SUNY ESF), Empire State Electric Energy Research Corporation (completed 1996).

Increasing Soil Temperatures in a Northern Hardwood Forest: Effects on Elemental Dynamics and Primary Productivity, USDA Forest Service (completed 1995).

An Examination of Global Change in Forest Ecosystems Using Soil Mesocosm Experiments, USDA Forest Service (completed 1995).

Onondaga Lake, Seneca River, Oswego River and Oswego Harbor Water Quality Monitoring for Onondaga Lake Management Conference, Upstate Freshwater Institute (completed 1995).

Modeling Nitrogen Cycling and Export from Forested Watersheds (with J. Aber, University of New Hampshire), U.S. Environmental Protection Agency (completed 1995).

Process-level Investigations of Weathering Inputs to Base-poor Forest Ecosystems (with C.E. Johnson and M.E. Bickford, Syracuse University), National Science Foundation (completed 1995).

Enclosure Experiment at Onondaga Lake: Mercury Sampling and Analysis, 1993, Onondaga Lake Management Conference (completed 1994).

Adirondack Lake Quality and Mercury in Fish (with S. Gherini, Tetra Tech Inc. and C.L. Schofield, Cornell University), Electric Power Research Institute and Empire State Electric Energy Research Corporation (completed 1994).

Mercury Sampling in Onondaga Lake, Onondaga Lake Management Conference (completed 1993).

Watershed Manipulation Project: A Field Study of Processes which Regulate Surface Water Acidity (with M. Mitchell, SUNY ESF), U.S. Environmental Protection Agency (completed 1993).

Hydrologic-Nutrient Cycle Interaction in Small Undisturbed and Man-Manipulated Ecosystems, (with G.E. Likens, Institute of Ecosystem Studies and F.H. Bormann, Yale University), National Science Foundation (completed 1993).

Field Study of Residual Aluminum in Filtered Water (with R.D. Letterman, Syracuse University), American Water Works Association (completed 1992).

Long-Term Changes in the Chemistry of Adirondack Lakes, U.S. Environmental Protection Agency (completed 1992).

Long Term Ecological Research at the Hubbard Brook Experimental Forest (with T. Fahey, Cornell University), National Science Foundation (completed 1992).

Experimental Watershed Liming Study, (with T. Fahey, Cornell University), Electric Power Research Institute, (completed 1992).

An Evaluation of the Source of Nitric Acid Inputs to Low Ionic Strength Surface Waters, National Science Foundation (completed 1991).

Thermal Stratification of Dilute Lakes: An Evaluation of Regulatory Processes and Biological Effects Prior to and Following Base Addition, U.S. Fish and Wildlife Services (completed 1990).

A Regional Evaluation of Watershed Processes Regulating Cation Exchange and Aluminum Chemistry Prior to and Following Strong Acid Application, U.S. Environmental Protection Agency (completed 1990).

Continuation of the Lake Acidification Mitigation, (with C. Schofield, Cornell University), Electric Power Research Institute (completed 1990).

Ecological Effects of Acidification on Low-Order Woodland Streams with Particular Emphasis on the Chemistry and Effects of Aluminum (with J. Elwood, Oak Ridge National Laboratory), Electric Power Research Institute (completed 1990).

Interpretive Report of the Adirondack Lake Survey, (with S. Gherini, Tetra Tech Inc.), Empire State Electric Energy Research Corporation, (completed 1989).

Development of a Watershed Model to Assess the Critical Loads of Atmospheric Nitrogen Deposition and Patterns of Land Use, (with J. Aber, University of New Hampshire), U.S. Environmental Protection Agency, (completed 1989).

Long-Term Changes in the Chemistry of Adirondack Lakes, U.S. Environmental Protection Agency (completed 1989).

Hydrologic-Nutrient Cycle Interaction in Small Undisturbed and Man-Manipulated Ecosystems (with G. Likens, Institute of Ecosystem Studies and F.H. Bormann, Yale University), National Science Foundation (completed 1989).

Factors Contributing to Mercury Accumulation in Muscle Tissue of Fish Collected During Phase II of the U.S. EPA Eastern Lake Survey (with S.P. Gloss and C.L. Schofield, Cornell University), U.S. Environmental Protection Agency (completed 1989).

Regionalization of the Integrated Lake-Watershed Acidification Results to the Adirondacks (with S. Gherini, Tetra Tech Inc. and others), Electric Power and Research Institute (completed 1988).

Lake Quality and Mercury in Fish (with T. Grieb, Tetra Tech Inc. and others), Electric Power Research Institute, (completed 1988).

The Biogeochemistry of Aluminum (with C. Cronan, University of Maine and others), Electric Power Research Institute, (completed 1988).

Control of Residual Aluminum in Filtered Water, (with R.D. Letterman, Syracuse University), American Water Works Association Research Foundation (completed 1987).

Extensive Liming Study (with S. Gloss and C. Schofield, Cornell University), U.S. Fish and Wildlife Service (completed 1987).

An Evaluation of National Lake Survey Data, U.S. Environmental Protection Agency (completed 1986).

Lake Acidification Mitigation Project (with S. Gloss, Cornell University and others), Electric Power Research Institute (completed 1986).

An Evaluation of the Use of Sodium Bicarbonate to Mitigate the Acidification of Surface Waters (with M. Mitchell SUNY CESF), Church and Dwight Co. (completed 1986).

Limestone Contactors for Corrosion Control in Small Water Supply Systems (with R.D. Letterman, Syracuse University) U.S. Environmental Protection Agency (completed 1986).

An Evaluation of Aluminum in Acidic Lake Ecosystems: Sources, Fate and Role in Nutrient Cycling, U.S. Environmental Protection Agency (completed 1985).

Aluminum-Ligand Interactions in a Forested Ecosystem, Prior to and Following a Clearcutting Disturbance, National Science Foundation (completed 1985).

Economic Evaluation of Base Addition as a Management Strategy for the Improvement of Adirondack Water Quality (with F.C. Menz, Clarkson College of Technology) US Environmental Protection Agency (completed 1983).

The Chemistry, Fate and Transport of Aluminum in Acidic Lake Systems, US Environmental Protection Agency (completed 1983).

The Significance of Aluminum in the Fate of Trace Metals in Dilute Acidic Surface Waters, National Science Foundation (completed 1983).

COURSES TAUGHT:

- Civil and Environmental Systems (undergraduate)
- Environmental Engineering I (undergraduate)
- Environmental Engineering II (undergraduate)
- Analysis of Water and Wastewater (undergraduate/graduate)
- Environmental Microbiology (undergraduate/graduate)
- Applied Aquatic Chemistry (graduate)
- Biogeochemistry (graduate)
- Chemistry of Soils and Natural Surfaces (graduate)
- Case Studies in Hydrogeology (graduate)
- Hydrology and Biogeochemistry of Wetlands (graduate)

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427 peer-reviewed articles as of September 22, 2016