

CURRICULUM VITAE

NAME: Charles Thurston Driscoll, Jr.

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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

Distinguished Professor of Civil and Environmental Engineering
Department of Civil and Environmental Engineering
Syracuse University
1993 - 2001

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

Director
Hydrogeology Program
Syracuse University
1986 - 1996

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

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
Environmental Quality Modeling
Limnology
Soil Chemistry

HONORS AND AWARDS:

Tau Beta Pi, Maine Alpha, 1974
Chi Epsilon, 1980
Research Fellowship, Agricultural University,
Wageningen, the Netherlands, 1983
Presidential Young Investigator Award, 1984
National Academy of Sciences, Panel on
Acidification Processes, 1984
Syracuse University Chancellor's Citation for
Academic Achievement, 1985
Sigma Xi, 1986
U.S. Representative on International Panel to
Evaluate Role of Atmospheric Nitrogen
Deposition in Surface Water Acidification, 1987

Sigma Xi Research Award, 1987
 U.S. Delegate to ECE Workshop to Establish
 Target Loads of Sulfur and Nitrogen, 1988
 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
 Chairman of Gordon Conference on Hydrologic,
 Geochemical and Biological Processes in
 Forested Catchments, 1993
 IBM Corporation Environmental Research Program
 Award, 1993
 American Chemical Society, Syracuse Section
 Research Award, 1994
 Co-convener of AGU Chapman Conference on Nitrogen
 Cycling in Forested Catchments, 1996
 National Research Council (NRC) Committee on Air Quality
 Management in the United States, 2001-2002
 Institute of Scientific Information, Highly Cited Researcher for
 Engineering and Environmental Science, 2003-present
 National Research Council (NRC) Committee on Collaborative Larger
 Scale Engineering Analysis for Environmental Research
 (CLEANER), 2005-2006
 Air Quality Working Group, State of the Nations Ecosystems,
 Heinz Center, 2005-present
 National Research Council (NRC) Committee on Everglades Restoration,
 2006-present
 National Academy of Engineering, 2007-present
 Guest on National Public Radio Science Friday, 19 January 2007
 Syracuse University Excellence in Graduate Education Faculty Recognition
 Award, March 2007

PUBLICATIONS: (*indicates peer-reviewed publication; over 300 peer-reviewed publications)

Books:

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

Papers:

- * Bisogni, J.J. and C.T. Driscoll. 1977. Denitrification using thiosulfate and sulfide. J. Environ. Eng. Div. ASCE 103:593-604.
- * Driscoll, C.T. and J.J. Bisogni. 1978. The use of sulfur and sulfide in packed bed reactors for autotrophic denitrification. J. Wat. Pollut. Cont. Fed. 50:569-577.

- * Driscoll, C.T., J.P. Baker, J.J. Bisogni and C.L. Schofield. 1980. Effect of aluminum speciation on fish in dilute acidified waters. *Nature* 284:161-164.
- Jennett, L.E. and C.T. Driscoll. 1981. Algal uptake of toxic trace organic substances - a study using liquid scintillation techniques. In: D.D. Hemphill (ed.) *Trace Substances in Environmental Health-XV*, Columbia, MO. pp. 291-297.
- * Johnson, N.M., C.T. Driscoll, J.S. Eaton, G.E. Likens and W.H. McDowell. 1981. Acid rain, dissolved aluminum and chemical weathering at the Hubbard Brook Experimental Forest, New Hampshire. *Geochem. Cosmochim. Acta* 45:1421-1437.
- * Driscoll, C.T. and G.E. Likens. 1982. Hydrogen ion budget of an aggrading forest ecosystem. *Tellus* 34:283-292.
- * Driscoll, C.T., J.R. White, G.C. Schafran and J.D. Rendall. 1982. CaCO₃ neutralization of acidified surface waters. *J. Environ. Engr. Div. ASCE* 108:1128-1145.
- * Schafran, G.C., J.R. White and C.T. Driscoll. 1982. The response of dilute acidic surface waters to strong base addition. *Northeast. Environ. Sci.* 1:151-160.
- * Tsai, W., J.A. Schwarz and C.T. Driscoll. 1982. Differential cation exchange capacity (DCEC) of nickel supported on silica-aluminas. *J. Catalysis* 78:88-95.
- * Tsai, W., J.A. Schwarz and C.T. Driscoll. 1983. Differential cation exchange capacity (DCEC) of platinum supported on titania. *J. Phys. Chem.* 87:1619-1621.
- * van Breemen, N., J. Mulder and C.T. Driscoll. 1983. Acidification and alkalization of soils. *Plant Soil* 75:283-308.
- * Wodka, M.C., S.W. Effler, C.T. Driscoll, S.D. Field and S.P. Devan. 1983. Diffusivity-based flux of phosphorus in Onondaga Lake. *J. Environ. Engr. Div., ASCE* 109:1403-1415.
- * Menz, F.C. and C.T. Driscoll. 1983. An estimate of the costs of liming to neutralize acidic Adirondack surface waters. *Water Resour. Res.* 19:1139-1149.
- * Driscoll, C.T., J.P. Baker, J.J. Bisogni and C.L. Schofield. 1984. Aluminum speciation and equilibria in dilute acidified surface waters of the Adirondack Region of New York State. In: O.P. Bricker (ed.) *Geological Aspects of Acid Deposition*. Butterworth, Boston. pp. 55-75.
- * Driscoll, C.T. and J.J. Bisogni. 1984. Weak acid/base systems in dilute acidified lakes and streams in the Adirondack Region of New York State. In: J.L. Schnoor (ed.) *Modeling of Total Acid Precipitation Impacts*. Butterworth, Boston. pp. 53-72.
- * Schwarz, J.A., C.T. Driscoll and A.K. Bhanot. 1984. Zero point of charge of silica-alumina oxide suspensions. *J. Colloid Int. Sci.* 97:55-61.
- * van Breemen, N., C.T. Driscoll and J. Mulder. 1984. The role of acidic deposition and internal proton sources in acidification of soils and water. *Nature* 307:599-604.
- * Driscoll, C.T. 1984. A procedure for the fractionation of aqueous aluminum in dilute acidic waters. *Int. J. Environ. Anal. Chem.* 16:267-283.
- * David, M.B. and C.T. Driscoll. 1984. Aluminum speciation and equilibria in soil solutions of a Haplorthod in the Adirondack Mountains (New York, U.S.A.). *Geoderma* 33:297-318.

- * Driscoll, C.T. and G.C. Schafran. 1984. Short-term changes in the base neutralizing capacity of an acid Adirondack lake, New York. *Nature* 310:308-310.
- * Driscoll, C.T. and G.C. Schafran. 1984. The chemistry of aluminum in an acidic lake in the Adirondack region of New York State, USA. In: C.J.M. Kramer and J.C. Duinker (eds.) *Complexation of Trace Metals in Natural Waters*. Nijhoff/Junk Pub., The Hague, The Netherlands. pp. 247-250.
- * Johnson, N.M., G.E. Likens, M.C. Feller and C.T. Driscoll. 1984. Acid rain and soil chemistry. *Science* 255:1424-1425.
- Driscoll, C.T. 1984. Aluminum chemistry and potential effects in acidic surface waters. In: D.D. Hemphill (ed.) *Trace Substances in Environmental Health-XVIII*. Columbia, MO. pp. 215-229.
- * Effler, S.W., C.T. Driscoll, M.C. Wodka, R. Honstein, S.P. Devan, P. Jaran and T. Edwards. 1985. Phosphorus cycling in ionically polluted Onondaga Lake, New York. *Water Air Soil Pollut.* 24:121-130.
- * Schecher, W.D. and C.T. Driscoll. 1985. Interactions of copper and lead with *Nostoc muscorum*. *Water Air Soil Pollut.* 24:85-101.
- * Driscoll, C.T., N. van Breemen and J. Mulder. 1985. Aluminum chemistry in a forested Spodosol. *Soil Sci. Soc. Am. J.* 49:437-444.
- van Breemen, N., C.T. Driscoll and J. Mulder. 1985. Soil and water acidification (a response to E. Krug's comments on the role of acidic deposition and internal proton sources in acidification of soils and waters). *Nature* 313:73.
- * Hall, M.C., C.T. Driscoll and G.E. Likens. 1985. Chemical, biological and physical consequences of episodic aluminum additions to a stream. *Limnol. Oceanogr.* 30:212-220.
- * Wodka, M.C., S.W. Effler and C.T. Driscoll. 1985. Phosphorus deposition from the epilimnion of Onondaga Lake. *Limnol. Oceanogr.* 30:833-843.
- * Fuller, R.D., M.B. David and C.T. Driscoll. 1985. Sulfate adsorption relationships in some northern forest Spodosols. *Soil Sci. Soc. Am. J.* 49:1034-1040.
- * Effler, S.W. and C.T. Driscoll. 1985. Calcium chemistry and deposition in ionically polluted Onondaga Lake, NY. *Environ. Sci. Technol.* 19:716-720.
- * Driscoll, C.T. and R.M. Newton. 1985. Chemical characteristics of acid-sensitive lakes in the Adirondack Region of New York. *Environ. Sci. Technol.* 19:1018-1024.
- * White, J.R. and C.T. Driscoll. 1985. Lead cycling in an acidic Adirondack lake. *Environ. Sci. Technol.* 19:1182-1187.
- Driscoll, C.T. 1985. Aluminum in acidic surface waters: chemistry, transport and effects. *Environ. Health Perspect.* 63:93-104.
- * Effler, S.W., G.C. Schafran and C.T. Driscoll. 1985. Partitioning light attenuation in an acidic lake. *Can. J. Fish Aquat. Sci.* 42:1707-1711.
- * Effler, S.W. and C.T. Driscoll, 1985. A chloride budget for Onondaga Lake, New York, USA. *Water Air Soil Pollut.* 27:29-44.

- * Fuller, R.D., M.J. Mitchell, H.R. Krouse, B.J. Wysłowski and C.T. Driscoll. 1986. Stable sulfur isotope ratios as a tool for interpreting sulfur transformations in forest soils and streams. *Water Air Soil Pollut.* 27:29-44.
- * Schindler, S.C., M.J. Mitchell, T.J. Scott, R.D. Fuller and C.T. Driscoll. 1986. Incorporation of ³⁵S-sulfate into inorganic and organic sulfur constituents of forest soils. *Soil Sci. Soc. Am. J.* 50:457-462.
- * Nodvin, S.C., C.T. Driscoll and G.E. Likens. 1986. Simple partitioning of anions and dissolved organic carbon in a forest soil. *Soil Sci.* 142:27-35.
- * Nodvin, S.C., C.T. Driscoll and G.E. Likens. 1986. The effect of pH on sulfate adsorption by a forest soil. *Soil Sci.* 142:69-75.
- * Lawrence, G.B., R.D. Fuller and C.T. Driscoll. 1986. Spatial relationships of aluminum chemistry in the streams of the Hubbard Brook Experimental Forest, New Hampshire. *Biogeochemistry* 2:115-135.
- Hooper, R.P. and C.T. Driscoll. 1986. Comment on "modeling the effects of acid deposition: assessment of a lumped parameter model of soil water and stream water". *Water Resour. Res.* 22:997-998.
- * Fuller, R.D., C.T. Driscoll, S.C. Schindler and M.J. Mitchell. 1986. A model of sulfur transformations in forested Spodosols. *Biogeochemistry* 2:313-328.
- * Effler, S.W., M.C. Wodka, C.T. Driscoll, C. Brooks, M. Perkins and E.M. Owens. 1986. Entrainment-based flux of phosphorus in Onondaga Lake. *J. Environ. Engr. Div. ASCE* 112:617-622.
- * Driscoll, C.T., C.P. Yatsko and F.J. Unangst. 1987. Longitudinal and temporal trends in the water chemistry of the North Branch of the Moose River. *Biogeochemistry* 3:37-62.
- * Schafran, G.C. and C.T. Driscoll. 1987. Spatial and temporal variations in the aluminum chemistry of a dilute, acidic lake. *Biogeochemistry* 3:105-120.
- * White, J.R. and C.T. Driscoll. 1987. Manganese cycling in an acidic Adirondack lake. *Biogeochemistry* 3:87-104.
- * Schofield, C.L. and C.T. Driscoll. 1987. Fish species distribution in relation to water quality gradients in the North Branch of the Moose River. *Biogeochemistry* 3:63-86.
- * Goldstein, R.A., S.A. Gherini, C.T. Driscoll, R. April, C.L. Schofield and C.W. Chen. 1987. Lake-watershed acidification in the North Branch of the Moose River: Introduction. *Biogeochemistry* 3:5-20.
- * Kelly, C.A., J.W.M. Hesslein, D.W. Schindler, P.J. Dillon, C.T. Driscoll, S. Gherini and R.E. Hecky. 1987. Prediction of biological acid neutralization in lakes. *Biogeochemistry* 3:129-140.
- * Schecher, W.D. and C.T. Driscoll. 1987. An evaluation of uncertainty associated with aluminum equilibrium calculations. *Water Resour. Res.* 23:525-534.
- * Driscoll, C.T., B.J. Wysłowski, C.C. Cosentini and M.E. Smith. 1987. Processes regulating temporal and longitudinal variations in the chemistry of low-order woodland stream in the Adirondack Region of New York. *Biogeochemistry* 3:225-241.

- * Peters, N.E. and C.T. Driscoll. 1987. Hydrogeological controls on surface water chemistry in the Adirondack Region of New York State. *Biogeochemistry* 3:163-180.
- * Rascher, C.M., C.T. Driscoll and N.E. Peters. 1987. The concentration and flux of solutes from snow and forest floor during snowmelt in the West-Central Adirondack Region of New York. *Biogeochemistry* 3:209-224.
- * White, J.R. and C.T. Driscoll. 1987. Zinc cycling in an acidic Adirondack lake. *Environ. Sci. Technol.* 21:211-216.
- * McDowell, W.H., J.J. Cole and C.T. Driscoll. 1987. A simplified version of the ampoule-persulfate method for the determination of dissolved organic carbon. *Can. J. Fish. Aquat. Sci.* 44:214-218.
- * Fuller, R.D., C.T. Driscoll, G.B. Lawrence and S.C. Nodvin. 1987. Processes regulating sulfate flux after whole-tree harvesting. *Nature* 325:707-710.
- * Hall, R.J., C.T. Driscoll and G.E. Likens. 1987. Importance of hydrogen ion and aluminum chemistry in regulating the structure and function of stream ecosystems: an experimental test. *Freshwat. Biol.* 18:17-43.
- * Schafran, G.C. and C.T. Driscoll. 1987. Comparison of terrestrial and hypolimnetic sediment generation of acid neutralizing capacity for an acidic Adirondack lake. *Environ. Sci. Technol.* 21:988-993.
- * Lawrence, G.B., R.D. Fuller and C.T. Driscoll. 1987. Release of aluminum following whole-tree harvesting at the Hubbard Brook Experimental Forest. *J. Environ. Qual.* 16:383-390.
- * Driscoll, C.T., G.F. Fordham, W.A. Ayling and L.M. Oliver. 1987. The chemical response of acidic lakes to calcium carbonate treatment. *Lake Reserv. Manage.* 3:404-411.
- * Schofield, C.L. and C.T. Driscoll. 1987. Application of ILWAS to Adirondack lakes. *Lake Reserv. Manage.* 3:345-355.
- * Peters, N.E. and C.T. Driscoll. 1987. Sources of acidity during snowmelt at a forested site, west-central Adirondack Mountains, New York. *Forest Hydrology and Watershed Manage.* IAHS-AISH Publ. No. 167:99-108.
- * Driscoll, C.T., N.M. Johnson, G.E. Likens and M.C. Feller. 1988. The effects of acidic deposition on stream water chemistry: a comparison between Hubbard Brook, New Hampshire and Jamieson Creek, British Columbia. *Water Resour. Res.* 24:195-200.
- * Driscoll, C.T., R.D. Fuller and D.M. Simone. 1988. Longitudinal variations in trace metal concentrations in a northern forested ecosystems. *J. Environ. Qual.* 17:101-107.
- * Driscoll, C.T. and R.D. Letterman. 1988. The chemistry and fate of aluminum in treated water. *J. Environ. Engr. Div., ASCE* 114:21-37.
- * Nodvin, S.C., C.T. Driscoll and G.E. Likens. 1988. Soil processes and sulfate loss at the Hubbard Brook Experimental Forest. *Biogeochemistry* 5:185-200.
- * Letterman, R.D. and C.T. Driscoll. 1988. Survey of residual aluminum in filtered water. *J. Am. Water Works Assoc.* 80:154-158.
- * Lawrence, G.B., C.T. Driscoll and R.D. Fuller. 1988. Hydrologic control of aluminum chemistry in an acidic headwater stream. *Water Resour. Res.* 24:659-669.

- * Schecher, W.D. and C.T. Driscoll. 1988. An evaluation of equilibrium calculations within acidification models: the effect of uncertainty in measured chemical components. *Water Resour. Res.* 24:533-540.
- * Sullivan, T.J., C.T. Driscoll, J.M. Eilers and D.H. Landers. 1988. Evaluation of the role of sea salt inputs in the long-term acidification of coastal New England Lakes. *Environ. Sci. Technol.* 22:185-190.
- * Driscoll, C.T. and W.D. Schecher. 1988. Aluminum in the environment. In: H. Sigel and A. Sigel (eds.) *Metal Ions in Biological Systems Vol 24. Aluminum and its Role in Biology.* Marcel Dekker, New York. pp. 59-122.
- Schecher, W.D. and C.T. Driscoll. 1988. Principles and applications of surface water acidification models. In: J. Saxena (ed.) *Hazard Assessment of Chemicals. Vol. 6,* Hemisphere Publishing, New York. pp. 187-223.
- * Lawrence, G.B. and C.T. Driscoll. 1988. Aluminum chemistry downstream of a whole-tree-harvested watershed. *Environ. Sci. Technol.* 22:1293-1299.
- * Driscoll, C.T. and W.D. Schecher. 1988. Aluminum in natural waters: chemistry, transport and effects. In: H. Gitelman (ed.) *Aluminum and Health: A Critical Review.* Marcel Dekker, New York. pp 21-65.
- * Fuller, R.D., D.M. Simone and C.T. Driscoll. 1988. Forest clearcutting effects on trace metal concentrations: spatial patterns in soil solutions and streams. *Water Air Soil Pollut.* 40:185-195.
- Schafran, G.C. and C.T. Driscoll. 1988. Relationships between seepage chemistry and flow path through the near shore sediments of an acidic lake. *Verh. Internat. Verein. Limnol.* 23:2262-2266.
- * Driscoll, C.T., G.E. Likens, L.O. Hedin, J.S. Eaton and F.H. Bormann. 1989. Changes in the chemistry of surface waters: 25-year results of the Hubbard Brook Experimental Forest, NH. *Environ. Sci. Technol.* 23:137-142.
- * Fordham, G.F. and C.T. Driscoll. 1989. Short-term changes in the acid/base chemistry of two acidic lakes following calcium carbonate treatment. *Can. J. Fish. Aquat. Sci.* 46:306-314.
- * Driscoll, C.T., W.A. Ayling, G.F. Fordham and L.M. Oliver. 1989. Chemical response of lakes treated with CaCO₃ to reacidification. *Can. J. Fish. Aquat. Sci.* 46:258-267.
- * Driscoll, C.T., G.F. Fordham, W.A. Ayling and L.M. Oliver. 1989. Short-term changes in the chemistry of trace metals following calcium carbonate treatment. *Can. J. Fish. Aquat. Sci.* 46:249-257.
- Driscoll, C.T. 1989. The chemistry of aluminum in surface waters. In: G. Sposito (ed.) *The Environmental Chemistry of Aluminum.* CRC Press, Boca Rotan, Fl. pp. 241-278.
- * Sullivan, T.J., C.T. Driscoll, S.A. Gherini, R. Munson, R.B. Cook, D.F. Charles and C.P. Yatsko. 1989. Influence of aqueous aluminum and organic anions on measurement of acid neutralizing capacity in surface waters. *Nature* 338:408-410.
- * Driscoll, C.T., R.D. Fuller and W.D. Schecher. 1989. The role of organic acids in the acidification of surface waters in the eastern U.S. *Water Air Soil Pollut.* 43:21-40.
- * Mitchell, M.J., C.T. Driscoll, R.D. Fuller, M.B. David and G.E. Likens. 1989. Effects of whole-tree harvesting on the sulfur constituents of a forest soil. *Soil Sci. Soc. Am. J.* 53:933-940.

- * Rice, D.A., T.K. Tsay, S.W. Effler and C.T. Driscoll. 1989. Modeling thermal stratification in a transparent Adirondack lake. *J. Water Resour. Plan. Manage.*, ASCE 115:440-456.
- * Heit, M., C.L. Schofield and C.T. Driscoll. 1989. Trace element concentrations in muscle tissue and gut contents of fish from three Adirondack lakes with different pH values. *Water Air Soil Pollut.* 44:9-30.
- * Smith, M.E., B.J. Wyskowski, C.T. Driscoll, C.M. Brooks and C.C. Cosentini. 1989. Palaeodipteron Walkeri (Diptera: Nymphomyiidae) in the Adirondack Mountains, New York. *Ent. News* 100:122-124.
- Driscoll, C.T., G.E. Likens, L.O. Hedin and F.H. Bormann. 1989. Response to letter by C.W. Chen and L.E. Gomez on article "Changes in the chemistry of surface waters". *Environ. Sci. Technol.* 23:754.
- Driscoll, C.T., G.E. Likens, L.O. Hedin and F.H. Bormann. 1989. Response to letter by P.J. Dillon on article "Changes in the chemistry of surface waters". *Environ. Sci. Technol.* 23:1028.
- Driscoll, C.T., G.E. Likens, L.O. Hedin and F.H. Bormann. 1989. Response to letter by G.R. Holdren, Jr. and M.R. Church on article "Changes in the chemistry of surface waters". *Environ. Sci. Technol.* 23:1079.
- * Mulder, J., N. van Breemen, L. Rasmussen and C.T. Driscoll. 1989. Aluminum chemistry of acidic sandy soils with various inputs of acidic deposition in the Netherlands and in Denmark. In: T. Lewis (ed.) *The Environmental Chemistry and Toxicology of Aluminum*. Lewis Publishing, Chelsea, MI. pp. 171-194.
- * Driscoll, C.T., B.J. Wyskowski, P. DeStaffan and R.M. Newton. 1989. Chemistry and transfer of aluminum in the Adirondack region of New York, USA. In: T. Lewis (ed.) *The Environmental Chemistry and Toxicology of Aluminum*. Lewis Publishing, Chelsea, MI. pp. 83-106.
- * Dahlgren, R.A., C.T. Driscoll and D.C. McAvoy. 1989. Aluminum precipitation and dissolution rates in Spodosol Bs horizons in the northeastern USA. *Soil Sci. Soc. Am. J.* 53:1045-1052.
- * McAvoy, D.C. and C.T. Driscoll. 1989. The chemical response following base application to Little Simon Pond, New York State. *J. Water Pollut. Cont. Fed.* 61:1552-1563.
- * Porcella, D.B., C.L. Schofield, J.V. DePinto, C.T. Driscoll, P.A. Bukaveckas, S.P. Gloss and T.C. Young. 1990. Mitigation of acidic conditions in lakes and streams. In: D.C. Adriano (ed.) *Advances in Environmental Science*. Springer-Verlag, New York. pp. 159-186.
- * Browne, B.A., J. McColl and C.T. Driscoll. 1990. Aluminum speciation using morin: I. Morin and its complexes with aluminum. *J. Environ. Qual.* 19:65-72.
- * Browne, B.A., C.T. Driscoll and J. McColl. 1990. Aluminum speciation using morin: II. Principles and procedures. *J. Environ. Qual.* 19:73-82.
- * Driscoll, C.T. and D.A. Schaefer. 1990. Overview of Nitrogen Processes. In: J.L. Malanchuk and J. Nilsson (eds.) *The Role of Nitrogen in the Acidification of Soils and Surface Waters*. Nordic Council of Ministers, Solna, Sweden. pp. 4-1 - 4-12.
- * Driscoll, C.T., D.A. Schaefer, L.A. Molot and P.J. Dillon. 1990. Summary of North American Data. In: J.L. Malanchuk and J. Nilsson (eds.) *The Role of Nitrogen in the Acidification of Soil and Surface Waters*. Nordic Council of Ministers, Solna, Sweden. pp. 6-1 - 6-45.

- * Cronan, C.S., R. April, R.J. Barlett, P.R. Bloom, C.T. Driscoll et al. 1990. Aluminum toxicity in forests exposed to acidic deposition - the ALBIOS results. *Water Air Soil Pollut.* 48:181-192.
- * Dahlgren, R.A., D.C. McAvoy and C.T. Driscoll. 1990. Acidification and recovery of a Spodosol Bs horizon from acidic deposition. *Environ. Sci. Technol.* 24:531-537.
- * Cronan, C.S., C.T. Driscoll, R.M. Newton, J.M. Kelly, C.L. Schofield, R.J. Barlett and R. April. 1990. A comparative analysis of aluminum biogeochemistry in a northeastern and southeastern forested watershed. *Water Resour. Res.* 26:1413-1430.
- * Schaefer, D.A., C.T. Driscoll, R. van Dreason and C.P. Yatsko. 1990. The episodic acidification of Adirondack lakes during snowmelt. *Water Resour. Res.* 26:1639-1647.
- * Driscoll, C.T. and W.D. Schecher. 1990. The chemistry of aluminum in the environment. *Environ. Geochem. Health* 12:28-49.
- * Grieb, T.M., C.T. Driscoll, S.P. Gloss, C.L. Schofield, G.L. Bowie and D.B. Porcella. 1990. Factors affecting mercury accumulation in fish in the Upper Michigan Peninsula. *Environ. Toxicol. Chem.* 9:919-930.
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- * Selvendiran, P., C.T. Driscoll, J.T. Bushey and M.R. Montesdeoca. 2008. Wetland influence on mercury fate and transport in a temperate forested watershed. *Environ. Pollut.* doi:10.1016/j.envpol.2007.12.005:154:46-55.
- * Cleavitt, N.L., T.J. Fahey, P.M. Groffman, J.P. Hardy, K. Henry, and C.T. Driscoll. 2008. Effects of soil freezing on fine roots in a northern hardwood forest. *Can. J. For. Res.* 38:82-91.

- * McNeil, B. E., J. M. Read, T. J. Sullivan, T. C. McDonnell, I. J. Fernandez, and C. T. Driscoll. 2008. The spatial pattern of nitrogen cycling in the Adirondack Park, New York. *Ecol. Appl.* 18(2):438-452.
- * Bookman, R., C.T. Driscoll, D.R. Engstrom, and S.W. Effler. 2008. Local to regional emission sources affecting mercury fluxes to New York lakes. *Atmos. Environ.* 42:6088-6097.
- * Driscoll, C.T. 2008. Ecological effects of acidic deposition. In S. E. Jorgensen and B. D. Fath (Eds.) *Encyclopedia of Ecology*, 1st Edition. Elsevier B.V., Oxford, pages 1012-1019.
- * Matthews, D.A., S.W. Effler, C.T. Driscoll, S.M. O'Donnell, and C.M. Matthews. 2008. Electron budgets for the hypolimnion of a recovering urban lake, 1989-2004: Response to changes in organic carbon deposition and availability of electron acceptors. *Limnol. Oceanogr.* 53(2):743-759.
- * Bushey, J.T., A.G. Nallana, M.R. Montesdeoca, and C.T. Driscoll. 2008. Mercury dynamics of a northern hardwood canopy. *Atmos. Environ.* 42:6905-6914.
- * Bushey, J.T., C.T. Driscoll, M.J. Mitchell, P. Selvendiran, and M.R. Montesdeoca. 2008. Mercury transport in response to storm events from a northern forest landscape. *Hydrol. Proc.* DOI: 10.1002/hyp. 7091, 14 pp.
- * Warby, R.A.F., C.E. Johnson, and C.T. Driscoll. 2008. Changes in aluminum concentrations and speciation in lakes across the northeastern U.S.A. following reductions in acidic deposition. *Environ. Sci. Technol.* 10.1021/es801125d.
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- Driscoll, C.T., K.M. Driscoll, M.J. Mitchell, D.J. Raynal, and K.M. Roy. Impacts of long-range emissions of air pollution on Adirondack Ecosystems in W. F. Porter, R. S. Whaley, and J. D. Erickson, eds. The Great Experiment in Conservation: Light from an Adirondack Prism. Syracuse University Press, Syracuse, NY (in press).
- * Owens, E.M., R. Bookman, S.W. Effler, C.T. Driscoll, D.A. Matthews, and A.J.P. Effler. Resuspension of mercury-contaminated sediments from an in-lake industrial waste deposit. *ASCE J. Environ. Eng.* (in press)
- * Bushey, J.T., P.M. Groffman, C.T. Driscoll, and G.T. Fisher. Mercury patterns and flux under base flow conditions in an urban watershed ecosystem. *Environ. Pollut.* (in press).
- * Campbell, J.L., L.E. Rustad, E.W. Boyer, S.F. Christopher, C.T. Driscoll, I.J. Fernandez, P.M. Groffman, D. Houle, J. Kiekbusch, A.H. Magill, M.J. Mitchell, and S.V. Ollinger. Consequences of climate change for biogeochemical cycling in forests of northeastern North America. *Can. J. For. Res.* (in press).
- * Selvendiran, P., C.T. Driscoll, M.R. Montesdeoca, and J.T. Bushey. Inputs, storage and transport of total and methyl mercury in two temperate forest wetlands. *J. Geophys. Res.* (in press).
- * Bookman, R., C.T. Driscoll, S.W. Effler, and D.R. Engstrom. (in press). Anthropogenic impacts recorded in the geochemical record of recent sediments from Otisco Lake, New York, USA. *J. Paleolimnol.*
- * Warby, R.A.F., C.E. Johnson, and C.T. Driscoll. Continuing acidification of organic soils across the northeastern USA: 1984 – 2001. *J. Soil. Sci. Am.* (in press).

- * Selvendiran, P., C.T. Driscoll, and M.R. Montesdeoca. Mercury dynamics and transport in two Adirondack lakes. *Limnol. Oceanogr.* (in press).
- Lovett, G.M., T.H. Tear, D.C. Evers, S.E.G. Findlay, B.J. Cosby, J.K. Dunscomb, C.T. Driscoll, and K.C. Weathers. Effects of air pollution on ecosystems and biological diversity in the Eastern United States. *Ann. N.Y. Acad. Sci.* (in press).
- * Dittman, J. A., J. B. Shanley, C. T. Driscoll, G. R. Aiken, A. T. Chalmers, and J. E. Towse. Ultraviolet absorbance as a proxy for total dissolved mercury in three northeastern forest streams. *Environ. Sci. Technol.* (in review).
- * Dittman, J. A., and C. T. Driscoll. Response of yellow perch (*Perca flavescens*) in Adirondack lakes to changes in atmospheric deposition of mercury in strong acids. *Biogeochemistry* (in review).
- * Geary, R.J., and C.T. Driscoll. The effect of aluminum on the retention of cations and dissolved organic carbon in organic forest horizons. *Soil Sci. Soc. Am. J.* (in review).
- * Bushey, J.T., C.T. Driscoll, P. Selvendiran, E.F. Mason Jr., C.B. Fuss, B.D. Page, M. Mitchell, and M.R. Montesdeoca. The transport and fate of mercury in a northern deciduous upland forest soil. *Biogeochemistry* (in review).
- * Selvendiran, P., C.T. Driscoll, M.J. Mitchell, J.B. Shanley, B. Mayer, and S. Gbondo-Tugbawa. Application of a sulfur biogeochemical model with stable isotopes to Sleepers River Watershed in Vermont, USA. *J. Hydro.* (in review).
- * Wu, W., and C.T. Driscoll. Application of PnET-BGC – an integrated biogeochemical model – to assess ANC recovery in the Adirondack region of New York under three multi-pollutant proposals. *Ecol. Appl.* (in review).
- * Chen, X., and C.T. Driscoll. Watershed land use controls on chemical inputs to Lake Ontario embayments. *J. Environ. Qual.* (in review).
- * Cho, Y., C.T. Driscoll, and J.D. Blum. The effects of whole-watershed calcium addition on the chemistry of stream storm events at the Hubbard Brook Experimental Forest in NH, USA. *Hydrol. Proc.* (in review).
- * Minocha, R., S. Long, P. Thangavel, S.C. Minocha, C. Eager, and C.T. Driscoll. Species-specific elevation dependent response of foliar physiology of trees to calcium supplementation at Hubbard Brook Experimental Forest, New Hampshire, USA. *Plant Cell Environ.* (in review).
- * McNeil, B.E., J.M. Read, and C.T. Driscoll. Spatial variability of foliar nitrogen in ten temperature tree species. *Ecosystems* (in review).
- * Adams, R.M., M.R. Twiss, and C.T. Driscoll. Mercury accumulation in seston in lakes of the Adirondack Mountains, New York. *Environ. Sci. Technol.* (in review).
- * Sullivan, T.J., B.J. Cosby, C.T. Driscoll, A.T. Herlihy, J. Zhai, I.J. Fernandez, and K.U. Snyder. Possible reversal of recent regional trends in aquatic recovery from acidification. *Proc. Natl. Acad. Sci.* (in review).
- * Wu, W., and C.T. Driscoll. Deriving a three dimensional target load function surface under climate change. *Environ. Sci. Technol.* (in review).

- * Demers, J.D., C.T. Driscoll, and J.B. Shanley. Hydrologic flow paths, source areas, and supply of DOC link episodic acidification and mercury transport during snowmelt. *Water Resour. Res.* (in review).
- * Yu, R-Q., I. Adatto, M. Montesdeoca, C.T. Driscoll, M.E. Hines, and T. Barkay. Microbial guilds that methylate mercury in association with *Sphagnum* moss in a high latitude wetland-dominated freshwater lake ecosystem. *Appl. Environ. Microbiol.* (in review).
- * Chen, C.Y., C.T. Driscoll, and N.C. Kamman. Mercury hotspots in freshwater ecosystems: Drivers, processes, and patterns in M. S. Bank, ed. Mercury in the Environment: Pattern and Process. University of California Press, Berkeley, CA. (in review).
- * Yavitt, J.B., J. Demers, C.T. Driscoll, M. Kalicin, R. Newton, and R. Munson. Wetland characteristics and mercury behavior within an Adirondack (New York State) watershed. *Environ. Pollut.* (in process).
- * Munson, R., R. Harris, C.T. Driscoll, J. Yavitt and R. Newton. The mercury cycling model for headwater drainage lakes (MCM-HD): Model Theory and Processes. (in process).
- * McLaughlin, E., C.T. Driscoll, J. Sutherland, J. Yavitt, R. Newton and R. Munson. Trophic transfer of mercury in an Adirondack lake ecosystem. *Environ. Pollut.* (in process).
- * McLaughlin, E., C.T. Driscoll, J. Yavitt, R. Newton and R. Munson. Mercury in upland and riparian wetland vegetation. *Environ. Pollut.* (in process).
- * Kalicin, M.H., C.T. Driscoll, J. Yavitt, R. Newton and R. Munson. The dynamics of mercury in upland forests of the Adirondack region of New York. *Environ. Pollut.* (in process).
- * Driscoll, C.T., R. Munson, J.B. Yavitt, R. Newton, J. Demers, M. Kalicin, and E. McLaughlin. Chemical and biological control of mercury cycling in an upland-wetland-lake ecosystem in the Adirondack region of New York. *Environ. Pollut.* (in process).
- * Lorey, P., C.T. Driscoll, and D.R. Engstrom. Changes in historical mercury deposition in Adirondack Lake Sediments and a lagged response from watershed contributions. *Environ. Pollut.* (in process).

TECHNICAL PRESENTATIONS 2007-2008:

- “Mercury Matters: Linking Mercury Science and Public Policy” presentation to National Press Club (with T. Holsen, D. Evers, K. Lambert), Washington, DC, 9 January 2007.
- “Mercury Matters: Linking Mercury Science and Public Policy” presentation to House of Representatives Staff (with T. Holsen, G. Keeler, and D. Evers), Washington, DC, 9 January 2007.
- “Mercury Matters: Linking Mercury Science and Public Policy” presentation to Senate Staff (with T. Holsen, G. Keeler, and D. Evers), Washington, DC, 9 January 2007.
- “Mercury Matters: Linking Mercury Science and Public Policy” presentation to Environmental Protection Agency (with T. Holsen, G. Keeler, and D. Evers), Clean Air Markets Division, Washington, DC, 10 January 2007.
- “Controls on Water Quality in the Croton Reservoir/Turkey Mountain Watershed” presentation given to the Department of Environmental Conservation, Seminar on A Multi-Disciplined Study of the New York City Croton Reservoir - Turkey Mountain Watershed (with D. Dekoski and S. Bhatia), Albany, NY, 26 January 2007.

“Acid Rain Impacts in the Adirondacks” presentation given to the Geology Club at Onondaga Community College, Syracuse, NY, 28 March 2007.

“Biological Mercury Hotspots in Eastern North America and Relationship to Atmospheric Mercury Deposition” presentation given at the CNY Air & Waste Management Association Technical Conference, Syracuse, NY, 28 March 2007.

“Atmospheric Deposition of Acidity and Mercury in the Eastern U.S.” presentation given to the U.S. House of Representatives Subcommittee on Water Resources and Environment’s Hearing on Nonpoint Source Pollution: Atmospheric Deposition and Water Quality, Washington, D.C., 17 April 2007.

“Interdisciplinary Research and Management of Onondaga Lake” presentation given to the 2nd Environmental Studies Summit, hosted by Syracuse University and the State University of New York College of Environmental Science and Forestry (SUNY-ESF), Syracuse, NY, 8 June 2007.

“Biogeochemical Modeling of Soil and Surface Water Responses to Climate Change in the Northeastern U.S.” presentation given to the Annual Hubbard Brook Cooperators Meeting, West Thornton, NH, July 2007.

“Sources, Deposition and Mobilization of Mercury” presentation given at the 2007 MDIBL Symposium entitled “Human Health and the Environment: Arsenic and Mercury, a Public Health Crisis?”, Bar Harbor, ME, 19 July 2007.

“The Development of an Intelligent Environmental Control System for Watershed Monitoring and Management” presentation given at the annual AEESP conference entitled “Interactions at the Interface – Making the Connections Between Environments, Disciplines and Nations”, Blacksburg, VA, 28 July-1 August, 2007.

“Atmosphere-Land Dynamics of Mercury in a Forest Landscape of the Adirondack Region of New York” presentation given at the annual NADP Technical Meeting and Scientific Symposium, Boulder, CO, 10-12 September 2007.

“Mercury Matters” presentation given at the annual Syracuse University Alumni Reunion, Syracuse University, Syracuse, NY, 12 October 2007.

“Acid Rain Impacts in the Adirondacks” book signing presentation given at Cornell University, Ithaca, NY, 8 November 2007.

“Ecological Effects of Mercury Deposition in the Adirondack Region of New York: Critical Issues for Recovery” presentation given at the annual NYSERDA Environmental Monitoring, Evaluation, and Protection in New York: Linking Science and Policy conference, Albany, NY, 15-16 November 2007.

“Mercury Matters” presentation given at the 2007 Government Relations Fall Symposium, Syracuse, NY, 29 November 2007.

“Acid Rain and the Adirondacks” presentation given at the Sweet Lecture Series hosted by Technology Alliance of Central New York (TACNY), Syracuse University, Syracuse, NY, 14 January 2008.

“Every Cloud Has a Quicksilver Lining: The Environmental Chemistry of Mercury” presentation given to the Department of Chemistry, SUNY ESF, Syracuse, NY, 18 January 2008.

“Every Cloud Has a Quicksilver Lining: The Ecological Effects of Mercury Pollution” presentation given at the annual meeting of the Council of Park Friends, Jamesville, NY, 20 January 2008.

“Acid Rain Impacts in the Adirondacks” book signing presentation given at the Wild Center, Natural History Museum of the Adirondacks, Tupper Lake, NY, 2 February 2008.

“The Development of an Intelligent Environmental Control System for Watershed Monitoring and Management” presentation given at the University of Minnesota as part of their Integrative Graduate Education and Research Traineeship (IGERT) seminar series, 4 February 2008.

“Ecological Effects of Mercury Deposition in the Adirondack region of New York: Critical Issues for Recovery” presentation given at the 2008 Ocean Sciences Meeting “From the Watershed to the Global Ocean”, Orlando, FL, 6-7 March 2008.

“The Hubbard Brook Ecosystem Study: Site Description, Small Watershed Approach and Overview of Cooperative Research Activities” presentation given to the Sustainable Innovations in Residential Construction Class at SUNY ESF, Syracuse, NY, 25 March 2008.

“Air, Land and Water” presentation given at the 2008 Aspen Environment Forum, Aspen, CO March 26- 30, 2008.

“Every Cloud Has a Quicksilver Lining: The Environmental Chemistry of Mercury” presentation given to the Department of Biochemistry and Microbiology at Rutgers University, New Brunswick, NJ, 11 April 2008

“Every Cloud has a Quicksilver Lining: Effects of Mercury Emissions” presentation given to the Department of Civil and Environmental Engineering, University of Iowa, Iowa City, IA, 2 May 2008.

“Overview of the National Mercury Monitoring Program” presentation given at the National Mercury Monitoring Workshop, Annapolis, MD, 5-7 May 2008.

“Mercury Cluster Sites” presentation given at the National Mercury Monitoring Workshop, Annapolis, MD, 5-7 May 2008.

“Every Cloud has a Quicksilver Lining: Effects of Mercury Emissions” presentation given to the Department of Agriculture Engineering, Cornell University, Ithaca, NY, 9 May 2008.

“Every Cloud Has a Quicksilver Lining: The Ecological Effects of Mercury Pollution” presentation given to St. James Church, Skaneateles, NY, 12 May 2008.

“Mercury Hot Spots in the Adirondacks and Northern Forest” presentation given at the 15th Annual Conference of the Adirondack Research Consortium, Lake Placid, NY, 21-22 May 2008.

“Deposition, Transport, Transformations, Bioaccumulation and Monitoring of Mercury” presentation given at the National Academy of Science Panel on Significance of International Transport of Air Pollutants at the Task Force on Hemispheric Transport of Air Pollution, Washington, DC, 9 June 2008.

“Science Links” presentation given to the Research Experience for Undergraduates (REU) students at the Pleasantview Farm, West Thornton, NH, 19 June 2008.

“Mercury Transport in Relation to DOC Quality in Watershed 6” presentation given at the Annual Hubbard Brook Cooperators Meeting, West Thornton, NH, July 2008.

“Theory of Acid-Base Chemistry as Applied to the Hubbard Brook Experimental Forest” presentation given at the Annual Hubbard Brook Meeting, West Thornton, NH, July 2008.

“Acid Rain and Its Effects on the Southeastern United States” presentation given to the Laboratory Research Group and the summer interns at Syracuse University, Syracuse, NY, 14 July 2008.

“Onondaga Lake: Problems and Promises” presentation given to the Department of Earth Sciences Nelson Lecture Series, Syracuse University, Syracuse, NY, 4 September 2008.

“Every Cloud Has a Quicksilver Lining: The Ecological Effects of Mercury Pollution” presentation given at the Residents' Committee to Protect the Adirondacks (RCPA) Annual Meeting, Old Forge, NY, 6 September 2008.

“Biogeochemical Modeling of Soil and Surface Water Responses to Climate Change in the Northeastern U.S.” presentation given at the Hydroclimatic effects on ecosystem response: A synthesis of long-term results from watersheds in the northeastern United States and southeastern Canada” workshop at SUNY ESF, Syracuse, NY, 19 September 2008.

“Syracuse Center of Excellence Research and Technology Water Resources Roadmap” presentation given at the Syracuse Center of Excellence 8th Annual Symposium on Environmental and Energy Systems “Creating Resilience in Sustainable Communities” 29-30 September 2008, Syracuse, NY

“Watershed Modeling with PnET-BGC” presentation given at the US-Canada/Canada-US Acid Rain Workshop: Modeling Environmental Response to Changes in Emissions and Deposition, 28-29 October 2008, Syracuse University, Syracuse, NY.

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 Upstate Freshwater Institute,
1981-Present
Onondaga County, Onondaga Lake Advisory Committee,
1983-Present
National Academy of Sciences, Panel on Processes
of Lake Acidification, 1984
International Panel on the Role of Atmospheric
Nitrogen Deposition in Surface Water
Acidification, 1987
American Water Works Association, Joint Task Group
on Aluminum for the 17th Edition of Standard
Methods, 1987
Scientific Advisory Committee of the Hubbard Brook
Ecosystem Study, 1987-Present
Panel Reviewer Environmental Engineering Program,
National Science Foundation, 1987
U.S. Representative to United Nations/European
Economic Community Workshop of Critical Loads
of Sulfur and Nitrogen, 1988
American Geophysical Union, Organizing Committee for the
Chapman Conference on Hydrogeochemical Responses of

Forested Catchments, 1988-1989
 National Science Foundation, Long-Term Ecological
 Research Coordinating Committee, 1988-Present
 Chairman of Working Group on Mapping Critical Loads,
 United Nations Convention on Long-Range
 Transboundary Air Pollution, 1989
 Reviewer, Dutch Acidification Program, 1990
 Organizing Committee for the Gordon Conference on
 Hydrologic, Geochemical and Biological Interactions
 in Forested Catchments, 1991
 Groundwater Working Group, Onondaga Lake Management
 Conference, 1991-1994
 Sediment Working Group, Onondaga Lake Management
 Conference, 1991-1994
 Chairman for the Gordon Conference on Hydrologic,
 Geochemical and Biological Interactions in
 Forested Catchments, 1993
 Board of Directors, Gordon Research Conferences,
 1993
 Secretary, Board of Directors, Hubbard Brook Research
 Foundation, 1993-present
 Editorial Board, *Journal of Hydrological Processes*, 1994
 Reviewer, Swedish Environmental Protection Agency
 Research Program, 1994
 Co-convener 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 for the Adirondack Park Agency, 1997-2002
 Chairman, Hubbard Brook Research Foundation Science
 Linkages Project, 1998-present
 Participant, National Science Foundation's Terrestrial Ecosystems
 and Global Change (TECO) competition, 11-13 May
 1998, Washington, DC.
 Editorial Board, *Environmental Science and Policy*, 1998-2002
 Participant, Ecological Society of America Workshop,
 "Atmospheric Deposition: The Ecological Response",
 1-3 March 1999, Washington, DC.
 Member, National Science Foundation Science and Technology (STC)
 Panel, 16-17 November 2000, Washington, DC
 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 Mercury Monitoring Program Committee, U.S. Environmental
 Protection Agency, September 2003-present
 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, April 2004
 Chair, Ecological Effects Subcommittee for the Advisory Council on Clean Air
 Compliance Analysis, U.S. Environmental Protection Agency, 2004-present
 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
Member, National Research Council Committee on Everglades Restoration, 2006-2008
Member, National Mercury Monitoring Steering Committee for Building a National Mercury Monitoring Network (MercNet), Multi-Federal Agency Initiative, 2006-present
Member, Clean Air Scientific Advisory Committee (CASAC), U.S. Environmental Protection Agency, 2007-present
Member, Ecotrends Committee, Long-Term Ecological Research Network, 2007-present
Member, U.S. National Committee for Soil Science, The National Academies, 2008-2010

FUNDED RESEARCH ACTIVITIES:

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

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

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).

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

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

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

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

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

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

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

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

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

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).

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).

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).

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

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

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).

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

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).

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

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

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

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

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

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).

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).

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

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).

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

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).

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

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

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

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

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).

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

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

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

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

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

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

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

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

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).

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

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

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

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).

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

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).

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).

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

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).

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

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).

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).

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).

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).

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).

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).

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

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)

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).

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).

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).

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

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

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 (6/03-12/07).

Mercury Deposition in Adirondack Region of New York, New York State Energy Research and Development Authority (12/03-12/07).

Ecosystem Modeling and Sensitivity Analysis and Ecological Modeling, Cadmus/Environmental Protection Agency (4/05-4/08).

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 (05/01/07 to 04/30/08).

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 (6/05-5/08)

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 (6/05-5/08).

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 (8/03-7/08).

Evaluation of Nitrate Addition to Control Methylmercury Production in Onondaga Lake: Work Plan for 2006 Study (with S. Effler, Upstate Freshwater Inc.), Honeywell (2/06-8/08).

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 (05/01/07 to 04/30/09).

Biogeochemical Modeling of Soil and Surface Water Responses to Climate Change in the Northeastern US (with J. Campbell, USDA), United States Department of Agriculture (6/1/07 to 5/31/09).

CARTI: Mercury Transport and Contamination in the Lake Ontario Basin, Syracuse University Center of Excellence (8/1/08 to 7/31/09).

Integrating Multimedia Measurements of Mercury in the Great Lakes Region (with D. Evers, BioDiversity Institute), Great Lakes Air Deposition (GLAD) Program (5/1/08 to 5/1/10)

The Production and Transfer of Methylmercury within Terrestrial Foodwebs across the Northeastern Landscape, New York State Energy Research and Development Authority (9/1/08-8/31/10).

Long-Term Ecological Research at Hubbard Brook Experimental Forest (with T.J. Fahey, Cornell University), National Science Foundation (12/04-11/10).

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 (9/1/08-8/31/11).

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 (9/1/08-8/31/11).

The production and transfer of methylmercury within terrestrial foodwebs across the northeastern landscape (with D. Evers, BioDiversity Research Institute), Northeastern States Research Cooperative (9/1/08-8/31/10).

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 (9/1/08-8/31/10).

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 (9/1/08-8/31/11).

COURSES TAUGHT:

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)

Updated October 29, 2008
316 (10/29/08)