

CURRICULUM VITAE

Gene Elden Likens

Date of Birth: 6 January 1935
Place of Birth: Pierceton, Indiana USA

*Founding Director, President Emeritus
Distinguished Senior Scientist Emeritus
Cary Institute of Ecosystem Studies*
Box AB
Millbrook, NY 12545*

*November 2007, organizational name change: **Cary Institute of Ecosystem Studies**

<http://www.caryinstitute.org/science-program/our-scientists/dr-gene-e-likens>

In residence (August – December 2014 – 2020/Virtually January – April 2021) at University of Connecticut, Storrs

Distinguished Research Professor (Ecology and Evolutionary Biology)
Special Advisor to the UCONN President on Environmental Affairs
University of Connecticut -- UCONN
Storrs, Connecticut 06268

EMPLOYMENT:

Sept. 1957 - Sept. 1961	Graduate Assistant in Zoology, University of Wisconsin
Sept. 1961 - Dec. 1961	Instructor in Zoology, Dartmouth College
Jan. 1962 - June 1962	Project Assistant in Zoology, University of Wisconsin
June 1962 - Nov. 1962	Research Associate in Zoology, University of Wisconsin
Nov. 1962 - Feb. 1963	Research Associate in Meteorology, University of Wisconsin
Feb. 1963 - Sept. 1963	Instructor in Biological Sciences, Dartmouth College
Sept. 1963 - Oct. 1963	Visiting Lecturer in Zoology, University of Wisconsin
Sept. 1963 - June 1966	Assistant Professor, Biological Sciences, Dartmouth College
July 1966 - June 1969	Associate Professor, Biological Sciences, Dartmouth College
Jan. 1968 - March 1968	Visiting Associate Ecologist, Brookhaven National Laboratory
July 1969 - June 1972	Associate Professor, Section of Ecology and Systematics, Cornell University
July 1972 - Aug. 1983	Professor, Section of Ecology and Systematics, Cornell

	University
Sept. 1973 - Aug. 1974	Acting Chairman, Section of Ecology and Systematics, Cornell University
Sept. 1978 - Aug. 1979	Visiting Professor, Center for Advanced Research and Department of Environmental Sciences, University of Virginia, Charlottesville, Virginia
July 1982 - June 1983	Chairman, Section of Ecology and Systematics, Cornell University
Jan. 1983 - Sept. 1983	Charles A. Alexander Professor of Biological Sciences, Section of Ecology and Systematics, Cornell University
Sept. 1983 - July 2018	Adjunct Professor, Section of Ecology and Systematics, Cornell University; 2003, Department of Ecology and Evolutionary Biology [changed Dept. name]
Sept. 1983 - Nov. 1993	Vice President, The New York Botanical Garden, The Bronx, New York
Sept. 1983 - Nov. 1993	Director, Institute of Ecosystem Studies; and Director, Mary Flagler Cary Arboretum, Millbrook, New York
Nov. 1993 - June 2007	President and Director, Institute of Ecosystem Studies
March 1984 – June 2008	Professor, Department of Ecology and Evolutionary Biology, Yale University
March 1985 - present	Professor, Graduate Field of Ecology, Rutgers University
Sept. 1985 - present	Fellow, Timothy Dwight College, Yale University
May 2003 - present	Adjunct Professor, Department of Biological Sciences, University at Albany, State University of New York
Nov. 2004 - present	Distinguished Research Professor, Department of Ecology and Evolutionary Biology, University of Connecticut, Storrs, Connecticut
June 2007 - present	Founding Director and President Emeritus, Cary Institute of Ecosystem Studies
October 2009 - present	Honorary Professor, Jinan University, Guangzhou, China
October 2009 - present	Einstein Professor, Chinese Academy of Science
July 2012 - present	Distinguished Senior Scientist Emeritus, Cary Institute of Ecosystem Studies
2011 - 2013	Guest Visiting Professor, Department of Limnology, EBC-

Uppsala University, Sweden

July 2012 - *present*

Special Advisor to the President on Environmental Affairs,
and Distinguished Research Professor, University of
Connecticut, Storrs, CT

EDUCATION:

1955 - 1957	Manchester College	B.S.	(Zoology)
1957 - 1959	University of Wisconsin-Madison	M.S.	(Zoology)
1959 - 1962	University of Wisconsin-Madison	Ph.D.	(Zoology)

HONORARY DEGREES:

1979	Manchester College	D.Sc.	(Honorary)
1985	Rutgers University	D.Sc.	(Honorary)
1989	Plymouth State College, Univ. System of New Hampshire	D.Sc.	(Honorary)
1990	Miami University	D.Sc.	(Honorary)
1991	Union College [Doctor of Humane Letters]		(Honorary)
1992	Universität für Bodenkultur, Vienna, Austria [Doctor, H.C.]		(Honorary)
1993	Marist College	D.Sc.	(Honorary)
1998	Wageningen Agricultural University, The Netherlands	D.Sc.	(Honorary)
2004	University of Connecticut, Storrs	D.Sc.	(Honorary)
2012	Montclair State University	D.Sc.	(Honorary)
2018	Uppsala University, Sweden	D.Sc.	(Honorary)

TEACHING EXPERIENCE:

Sept. 1955 - June 1956	Assistant in Zoology, Manchester College
Sept. 1956 - June 1957	Assistant in Zoology, Manchester College
Sept. 1957 - June 1959	Graduate Teaching Assistant in Zoology, University of Wisconsin-Madison
Sept. 1961 - Dec. 1961	Instructor in Zoology, Dartmouth College
Feb. 1963 - Sept. 1963	Instructor in Biological Sciences, Dartmouth College

Sept. 1963 - Oct. 1963	Visiting Lecturer in Zoology, University of Wisconsin-Madison
Oct. 1963 - June 1966	Assistant Professor, Biological Sciences, Dartmouth College
July 1966 - June 1969	Associate Professor, Biological Sciences, Dartmouth College
July 1969 - June 1972	Associate Professor, Section of Ecology and Systematics, Cornell University
July 1972 - Aug. 1983	Professor, Section of Ecology and Systematics, Cornell University
Sept. 1978 - Aug. 1979	Visiting Professor, Center for Advanced Research and Dept. Environmental Sciences, University of Virginia, Charlottesville
April - May 1995	Visiting Professor, Institute of Forest Ecology, Universität für Bodenkultur, Vienna, Austria
March 2001	Walker Ames Professorship, University of Washington, Seattle
February - April 2004	Miegunyah Distinguished Fellow, School of Botany, University of Melbourne, Australia
November - December 2007	Nicholas School of the Environment, Duke University, Durham, North Carolina
Autumn 2005 - present	Distinguished Research Professor, Department of Ecology and Evolutionary Biology, University of Connecticut, Storrs
February - April 2011; Sept. - Nov. 2012; March - April 2013	Guest Visiting Professor, Department of Limnology, EBC-Uppsala University, Sweden
August – Sept. 2011	Guest Visiting Professor, Department of Geography and Earth Sciences, University of New England, Armidale, New South Wales, Australia
November 2011	Guest Visiting Professor, Department of Natural Resources, University of Missouri-Columbia

DISTINGUISHED MEMBERSHIPS:

American Academy of Arts and Sciences (*elected 1979*)

National Academy of Sciences (*elected 1981*)

The Royal Swedish Academy of Sciences (*elected Foreign Member 1988*)

The British Ecological Society (*elected Honorary Member 1991*)

The Royal Danish Academy of Sciences and Letters (*elected Foreign Member 1994*)

Austrian Academy of Sciences (*elected Foreign Member 2000*)

The International Water Academy (*Chair No. 186 - elected Life Member 2003*)

American Philosophical Society (*elected 2006*)

MEMBERSHIPS IN SCIENTIFIC SOCIETIES AND FRATERNITIES:

American Association for the Advancement of Science (*Fellow 1965*)

American Institute of Biological Sciences (*President Elect 2001; President 2002;
Past President 2003*)

American Polar Society

American Society of Limnology and Oceanography (*Vice President 1975-76;
President 1976-77*)

American Water Resources Association (*Honorary Member*)

Australian Society of Limnology (*Lifetime Member*)

The British Ecological Society (*Elected Honorary Member 1991*)

Ecological Society of America (*Vice President 1978-79; President 1981-82; Honorary
Fellow 2012-present*)

Foreign Correspondents' Club of Japan (*Honorary Member 2003-2004*)

Freshwater Biological Association

Gamma Alpha

The Hudson River Environmental Society

INTECOL (*Honorary Member 2005*)

International Water Resources Association (*Charter Member*)

International Association for Great Lakes Research

International Association for Sediment Water Science

Phi Sigma

Societas Internationalis Limnologiae (*U.S. National Representative since 1970 to
2016; Executive Vice President 1998-2001; President 2001-2007*); 2007, name
changed to *International Society of Limnology*, but also retaining *SIL (Societas
Internationalis Limnologiae)*).

Sigma Xi

COMMENCEMENT ADDRESSES:

1. **Rutgers University**, “Are we pulling the plug on our life support systems?” (New Brunswick, New Jersey); 23 May 1985.
2. **Goshen College**, “Protecting Earth’s Environment – It’s the right thing to do” (Goshen, Indiana); 22 April 1990.
3. **Miami University**, “What on Earth are we passing to our children?” (Oxford, Ohio); 13 May 1990.
4. **University of Connecticut**, “Embrace Life” (Storrs, Connecticut); 8 May 2004.
5. **Montclair State University**, “Our Future” (Montclair, New Jersey); 12 May 2012.

BOARDS OF TRUSTEES/DIRECTORS:

- Board of Trustees, Environmental Defense, New York, NY, 1985-2005 [Vice Chair (1999-2005), Honorary Trustee (2005-**present**)]
- Trustee and President, Board of Trustees, Institute of Ecosystem Studies, Millbrook, New York, 1993-2007
- Board of Directors, Island Press, 1994-2002
- Board of Trustees, Hubbard Brook Research Foundation, 1994-**present** [Vice Chair (2002-2003), Acting Chair (2003), Vice Chair (2006)]
- Board of Directors, Aldo Leopold Foundation, Inc., Baraboo, Wisconsin, 1997-2007, 2008-2014, 2016-2017. [Vice Chair (2010, 2011)]
- Board of Directors, American Institute of Biological Sciences, 2001-2004 [President (2002)]
- President, Societas Internationalis Limnologiae, 2001-2007 [U.S. National Representative – 2007-2016]
- Board of Directors, Scenic Hudson, 2007-2009; President’s Council of Advisors, 2009-**present**
- Board of Directors, Hudson River Foundation, 2007-**present**

AWARDS AND HONORS:

1. Who’s Who in the East, 1964-present.
Outstanding Young Men of America, 1965.
Who’s Who in America, Marquis, 1979-present.
Who’s Who in Technology Today, J. Dick & Co., 3rd edition, 1981.

Who's Who in the World, Marquis, 1980-present.

Who's Who in Frontier Science and Technology, Marquis, 1983-present.

International Who's Who, 1986-1987.

Who's Who in Science and Engineering, 3rd Edition, 1995; 5th edition, 1999. 12th Edition, 2016-2017.

American Men and Women of Science, 21st edition, 2002.

National Register's Who's Who in Executives & Professionals, 2003.

Chosen by Hudson Valley Magazine as "1989 The Best of Hudson Valley -- Best Environmentalist." 21 Club.

2. American Motors Conservation Award, Professional Category; 1969.
3. NATO Senior Fellowship, England and Sweden; 1969.
4. Guggenheim Fellowship; 1972 - 1973.
5. Certificate of Appreciation, Environmental Protection Agency, Region II; 1976 and 1978.
6. U.S. Forest Service 75th Anniversary Award, for significant contributions to forestry and conservation, U.S. Department of Agriculture; 1980.
7. *Science Citation Index* and the *Social Sciences Citation Index* identified Likens *et al.* 1970. *Ecological Monographs* 40:23, as one of the most cited items in its field; Citation Classic in *Current Contents* 12(36):28 (1981).
8. G. E. Hutchinson Award for Excellence in Research (first time awarded), presented by the American Society of Limnology and Oceanography; October 1982.
9. Distinguished Achievement Award, Laboratory of Biomedical and Environmental Studies, University of California, Los Angeles; October 1982.
10. Honorary Membership Award, in recognition of eminence in water-resources science and technology, American Water Resources Association; October 1983.
11. Selected as Baldi Lecturer, Society of International Limnology; 1983.
12. Acid Rain '84 Citizens Award, presented to Hubbard Brook Experimental Forest, with special recognition to Gene Likens for outstanding contributions toward solving the acid rain problem. Manchester, New Hampshire; January 1984.
13. Regents Medal of Excellence, Bicentennial of Board of Regents and the University of the State of New York, New York: State of Agriculture and Natural Resources. Syracuse, New York; October 1984.
14. Certificate of Appreciation, IV International Congress of Ecology, Syracuse, New York; August 1986.

15. The New York Academy of Sciences Award, “in recognition of his world wide influence in ecology and environmental education through the results of the Hubbard Brook Ecosystem Study that led to discoveries of major importance including acid rain and forest harvesting practices.” New York, New York; December 1986.
16. First International ECI Prize in Limnetic Ecology, The Ecology Institute, Oldendorf/Luhe, Germany; April 1988.
17. The New York Botanical Garden Distinguished Service Award, The New York Botanical Garden; May 1989.
18. 1990 AIBS Distinguished Scientist Award, American Institute of Biological Sciences; August 1990.
19. Elected as Honorary Member, The British Ecological Society; September 1991.
20. The Garden Club of America Special Citation, for outstanding achievement in ecology and environmental education, Baltimore, Maryland; May 1992.
21. 1993 Tyler Prize, The World Prize for Environmental Achievement; December 1993. (with F. H. Bormann)
22. 1994 Australia Prize for Science and Technology, The Parliament House, Canberra, Australia; April 1994.
23. Elected Foreign Member, The Royal Danish Academy of Sciences and Letters, Natural Sciences Class; April 1994.
24. Einar Naumann-Augustus Thienemann Medal, Societas Internationalis Limnologiae, São Paulo, Brazil; August 1995.
25. Eminent Ecologist, Ecological Society of America, Snowbird, Utah; August 1995.
26. Distinguished Service Award, Hudson River Environmental Society, Inc.; November 1997.
27. 1997 R. A. Vollenweider Award and Lectureship in Aquatic Sciences (granted annually to an eminent freshwater scientist for global contribution to advancement of aquatic sciences), National Water Research Institute and Canada Centre for Inland Waters, Burlington, Ontario, Canada; March 1998.
28. Storm King Award, presented by Scenic Hudson, New York, New York; May 1998.
29. Award of Excellence, National Council of State Garden Clubs, Inc., Atlanta, GA; May 1999.
30. AIBS Lifetime Accomplishment Award, American Institute of Biological Sciences, Washington, D.C.; March 2000.
31. G. Evelyn Hutchinson Chair in Ecology, Institute of Ecosystem Studies, Millbrook, NY;

April 2000 - 2007.

32. Gene E. Likens Laboratory, named and dedicated, Institute of Ecosystem Studies, Millbrook, NY; November 2000.
33. Walker-Ames Professorship, Ocean and Fishery Sciences, Zoology, Forest Resources and Civil Engineering Departments, University of Washington, Seattle; March 2001.
34. Huxley Medal, Institute of Biology, London, UK, instituted in 1900 in memory of Thomas Henry Huxley, "the highest honor at the disposal of the Royal Anthropological Institute of London and acknowledges lifetime achievement at the highest level in all fields of anthropology." April 2001.
35. 2001 National Medal of Science, Washington, D.C.; June 2002.
36. 2003 Blue Planet Prize for "outstanding scientific research achievements and help to solve global environmental problems." The Asahi Glass Foundation, Tokyo, Japan; October 2003. (with F.H. Bormann)
37. Miegunyah Distinguished Visiting Fellowship, University of Melbourne, Australia; January - April 2004.
38. North American Benthological Society awards 2004 Hynes Young Investigator Award to E. Bernhardt for Bernhardt and Likens, "DOC enrichment alters nitrogen dynamics in a forest stream," *Ecology* 83(6):1689-1700 (2002), for excellent science.
39. Science Leadership Award, U.S. Forest Service Centennial Congress. Presented to Gene Likens, F. H. Bormann, R. S. Pierce, N. M. Johnson, "In recognition of outstanding contributions in science leadership and resource stewardship during our first century of service." Washington, D.C.; January 2005.
40. Awarded Honorary Membership, INTECOL, to recognize distinguished contributions to ecological science; July 2005.
41. Naming and dedication of the "Gene E. Likens Science Division Conference Room" in the new Science Center, Manchester College, North Manchester, Indiana; September 2005.
42. *Limnology and Oceanography* 51(1), Part 2, *Special Issue* "Eutrophication of Freshwater and Marine Ecosystems," dedicated to Gene E. Likens "in recognition of his career-long contributions to ecosystem science." January 2006.
43. Elected to American Philosophical Society; April 2006.
44. Centennial Award, Botanical Society of America, Chico State University, Chico, CA; August 2006.
45. Awarded Flagship Fellowship, "Water for a Healthy Country" CSIRO, Canberra, Australia; December 2007 - May 2008.
46. Awarded CERF Research Fellowship, Australian National University, Canberra, Australia; July 2008 - May 2010.

47. Black Rock Forest Consortium's 2008 Dr. E. G. Stillman Award; June 2008.
48. Awarded Einstein Professorship of Chinese Academy of Sciences; March 2009.
49. Honorary Professorship, Jinan University, Guangzhou, China; November 2009.
50. American Publishers Award, 2009 Honorable Mention Multivolume Reference/Science Presented to Academic Press/Elsevier Inc. for Encyclopedia of Inland Waters, Editor-in-Chief Gene E. Likens, Professional & Scholarly Publishing Division, Association of American Publishers, Inc.
51. Inducted: Basketball Hall of Fame, Kosciusko County, Indiana. Announced December 2010; Induction Ceremony; June 2011. http://kchalloffame.com/2011_Inductees.php
52. Elected to Connecticut Academy of Science and Engineering; May 2011.
53. Gusi Peace Prize, Philippines; August 2011. (Awarded November 2011, but unable to attend ceremony and accept prize).
54. Honorary Degree (and Convocation Speech), Doctor of Sciences, Montclair State University, Montclair, New Jersey; May 2012.
55. Honorary Fellow, Ecological Society of America; September 2012.
56. Manchester University Alumni Honor Award; May 2013.
57. Alfred C. Redfield Lifetime Achievement Award, Joint Aquatic Sciences Meeting, Association for the Sciences of Limnology and Oceanography, Portland, Oregon; May 2014.
58. Leading Educators of the World – 2015, International Biographical Centre, Cambridge, England; 2015.
59. "To Dr. Gene E. Likens in recognition to (sic) his valuable contributions to long-term studies and ecosystem research in the Southern Hemisphere and worldwide." Southern Connection Meeting, Punta Arenas, Chile, 19 January 2016. Award was an original work of art in metal and wood, with plaque.
60. Gene E. Likens Science Award – awarded at the Dutchess County Regional Science Fair to the winning young scientist.
61. Visiting Fellow at the Australian National University, Canberra, Australia; 17 Feb to 31 March 2017.
62. BBVA Foundation Frontiers of Knowledge Award in Ecology and Conservation Biology. Madrid, Spain; June 2017.
63. PROSE Award from the American Association of Publishers for, "Hubbard Brook: The Story of a Forest Ecosystem", by Richard T. Holmes and Gene E. Likens (Yale University Press). This award was given to the most noteworthy professional and scholarly publication in the Biological Sciences for 2017.

64. New England Society Book Award – 2017 (Specialty category) for Hubbard Brook: The Story of a Forest Ecosystem, by Richard T. Holmes and Gene E. Likens (Yale University Press).
65. Plaque honoring the leadership and scientific achievements of Gene E. Likens & Phyllis C. Likens. Naming/Dedication of the Likens Conservation Campus at Mirror Lake. Mirror Lake, NH; 9 July 2017.
66. 2017 Environmental Stewardship Award. Manchester University, North Manchester, IN; Saturday, 15 October 2017.
67. Honorary Doctoral Degree. Uppsala University, Sweden; 26 January 2018.
68. Nominated for the Presidency of the American Academy of Arts and Sciences – 2018.
69. Recipient of the 2019 Benjamin Franklin Medal in Earth and Environmental Science, The Franklin Institute. Philadelphia, PA; 11 April 2019.

INVITED LECTURES:

1. Williams Summer Institute for College Teachers; 1966, 1967.
2. Drew Summer Institute for College Teachers; 1968.
3. Lecture Series, Division of Biological Sciences, University of Michigan, Ann Arbor; 1977.
4. Paul C. Lemon Ecology Lecture, State University of New York at Albany, New York; 1978.
5. Cornell Alumni University; July 1978.
6. Distinguished Senior Scientist Lecture Series, W.K. Kellogg Biological Station, Michigan State University, Hickory Corners, Michigan; 1978.
7. C.P. Snow Lecturer, Ithaca College, Ithaca, New York, April 1979; April 1989.
8. Distinguished Ecologist Lecturer, North Carolina State University, Raleigh, North Carolina; 1980.
9. Robert S. Campbell Lecture, University of Missouri, Columbia, Missouri; 1980.
10. College of Science Lectureship in Biology, Lecture Series, University of Notre Dame, Indiana; October 1982.
11. Nelson Distinguished Lecture in Biology, Rutgers University (Busch Campus), New Jersey; March 1983.
12. Sigma Xi Lecture, The Academy of Natural Sciences, Philadelphia, Pennsylvania; March 1983.
13. Tenth Edgardo Baldi Memorial Lecture, Societas Internationalis Limnologiae, XXII Congrès de Limnologie, Lyon, France; August 1983.
14. Tansley Lecture for the British Ecological Society, University of Leicester, England;

- December 1983.
15. Annual Meeting of the Coalition of Northeastern Governors, Secaucus, New Jersey; December 1983.
 16. Steinhaus Memorial Lecture, University of California, Irvine; January 1984.
 17. Barbara Cushing Paley Memorial Lecture, The New York Botanical Garden, The Bronx, New York; December 1984.
 18. Henry J. Oosting Memorial Lecture in Ecology, Duke University, Department of Botany, Durham, North Carolina; April 1985.
 19. Rilett Visiting Scholar for 1985, Department of Biological Sciences and the Beta Lambda Chapter of Phi Sigma Society, Illinois State University, Normal-Bloomington, Illinois; April 1985.
 20. Participant and Speaker, United States -- China Air Pollution Technology Workshop, Nanjing Botanical Garden, Nanjing, China; and Institute of Environmental Chemistry, Academia Sinica, Beijing, People's Republic of China; November 1985.
 21. Visiting Scholar, James Madison University, Harrisonburg, Virginia; April 1988.
 22. Speaker/Participant, Pontifical Academy of Sciences, Study Week on Modern Approach for the Protection of the Environment, Vatican City State, Italy; November 1987.
 23. Commemorative Speaker, Meeting to commemorate Svante Odèn and his pioneering contribution in environmental science, Skokloster and Uppsala, Sweden; November-December 1987.
 24. James Norris Oliphant Fellowship Distinguished Fellows Lecture Series, Sigma Phi, Cornell University, Ithaca, New York; April 1988.
 25. Mid-Hudson Biologist Group, State University of New York College at New Paltz; April 1988.
 26. 1988 Jack R. Hargis Lecture in Biology, University of Minnesota, Duluth; September 1988.
 27. Plenary Speaker, International Mountain Watershed Symposium "Subalpine Watershed Processes and Water Quality," Lake Tahoe; June 1988.
 28. Robert H. Woodworth Lecture in Science, Bennington College, Bennington, Vermont; October 1988.
 29. Class of 1960 Visiting Scholars, Williams College, Williamstown, Massachusetts; November 1988.
 30. Graduate Biology Club, Western Connecticut State University, Danbury, Connecticut; March 1988.

31. Speaker for the seminar series on Ecology-Economics-Ethics: The Broken Circle, Yale University; February 1989.
32. Culpeper Fellow Lecturer, The Charles E. Culpeper Foundation, Inc., The Millbrook School, Millbrook, New York; February 1989.
33. 1988 Ecology Institute Prize Lecturer, Biologische Anstalt Helgoland, Hamburg, Federal Republic of Germany; August 1989.
34. Keynote Speaker/Participant, Chapman Conference, American Geophysical Union, Bar Harbor, Maine; September 1989.
35. Speaker/Participant, The Global Environment: Are We Overreacting? Conference, Smithsonian Institution, Washington, D.C.; September 1989.
36. Distinguished Lectureship for Frontier in Life Sciences, Boyce Thompson Institute for Plant Research at Cornell University, Ithaca, New York; November 1989.
37. Speaker/Participant, International Workshop on Comparative Studies of North and South American Temperate Ecosystems: Theory, Approaches and Limitations, Termas de Chillán, Chile; January 1990.
38. Speaker 'Earth in Rebellion' series, The New York Botanical Garden Environmental Issues Forum, New York, New York; February 1990.
39. A. E. Waller Lecture, Ohio State University, Columbus, Ohio; April 1990.
40. Keynote Speaker, Centennial Science Symposium and Annual Meeting of Indiana Academy of Sciences, Manchester College, North Manchester, Indiana; April 1990.
41. Olin Lecture on the Environment, Fairfield University, Fairfield, Connecticut; October 1990.
42. Keynote Speaker, Annual Conference on Environmental Problems: Global and Regional Concerns, Vermont Academy of Arts and Sciences, Burlington, Vermont; October 1990.
43. Plenary Speaker, First European Symposium on Terrestrial Ecosystems: Forests and Woodlands, Commission of the European Communities, Florence, Italy; May 1991.
44. Lecturer in "Golden Series", Institut für Forstökologie, Universität für Bodenkultur, Vienna, Austria; May 1991.
45. Keynote Speaker, Gordon Research Conference on Hydrological-Geochemical-Biological Interactions in Forested Catchments, Holderness, New Hampshire; July 1991.
46. William V. Kaeser Memorial Scholar for 1991, Center for Limnology, University of Wisconsin-Madison; September 1991.
47. Distinguished Scientist Lecture Series, Bard College, Annandale-on-Hudson, New York; November 1991.

48. Plenary Speaker, American Society of Limnology and Oceanography, 1992 Aquatic Sciences Meeting, Santa Fe, New Mexico; February 1992.
49. Donnell Foster Hewett Lecture Series, Department of Earth and Environmental Sciences, Lehigh University, Bethlehem, Pennsylvania; April 1992.
50. Honorary Invited Speaker, Honorary Doctorate Ceremony, Universität für Bodenkultur, Vienna, Austria; November 1992.
51. Speaker, Zone III Conservation Meeting, The Garden Club of America, Lakeville, Connecticut; September 1992.
52. Keynote Speaker, Freshwater Imperative Meeting, Friday Harbor, Washington; January 1993.
53. Speaker, Conservation and National Affairs Meeting, The Garden Club of America, Washington, D.C.; February 1993.
54. Miles C. Horton Special Lecture, Colloquium on Aquatic Ecology, Virginia Polytechnic Institute and State University, Blacksburg, Virginia; March 1993.
55. Invited Speaker, MBL Friday Evening Lecture Series, Marine Biological Laboratory, Woods Hole, Massachusetts; August 1993.
56. Invited Guest Speaker, GRIL Symposium (Groupe de Recherche InterUniversitaire en Limnologie), University of Quebec at Montreal, McGill University, University of Montreal; March 1994.
57. The Second Granville H. Sewell Distinguished Lecture in Environmental Sciences, Columbia University, School of Public Health, Division of Environmental Sciences, New York, New York; March 1994.
58. Distinguished Ecologist Series of Lectures, Colorado State University, Fort Collins, Colorado; April 1994.
59. Lectures associated with The 1994 Australia Prize: 1994 Australia Prize Public Lecture at the National Convention Centre, Canberra, Australia, 27 April 1994; Seminar, RSBS Australian National University, 28 April 1994; After Dinner Address, Australian Academy of Science, Canberra, 28 April 1994; Seminar, Monash University, and The University of Melbourne, 29 April 1994; Seminar, Sydney Water Board, and Australian Water Technologies, Science & Environment, North Ryde, 2 May 1994; After Dinner Address, Joint Academies of Science, Technological Sciences and Engineering, Social Sciences, Humanities, 2 May 1994; Seminar, Murdoch University, 5 May 1994.
60. Plenary Speaker, International Conference on Ecosystem Monitoring and Protected Areas and Second International Conference on Science and the Management of Protected Areas, Dalhousie University, Halifax, Nova Scotia, Canada; May 1994.
61. Invited Speaker, International Arid Lands Consortium Workshop on Arid Lands Management--Towards Ecological Sustainability, Jerusalem and the Negev Desert, Israel;

June 1994.

62. The First Raymond Lindeman Memorial Lecture, Department of Ecology, Evolution and Behavior, University of Minnesota, St. Paul, Minnesota; October 1994.
63. Distinguished Lecturer in Biological/Environmental Science, Ohio Northern University, Ada, Ohio; November 1994.
64. Invited Speaker, Marist College Center for Lifetime Study Convocation, Poughkeepsie, New York; September 1995.
65. Hans Jenny Memorial Lecture, Division of Ecosystem Sciences, University of California, Berkeley; April 1996.
66. Invited Keynote Speaker/Participant, Symposium on Institute of Ecology: Past, Present and Future, The University of Georgia, Athens; October 1996.
67. Invited Speaker and Participant, Tyler Environmental Prize Pavilion Dedication and Conference on International Environmental Science, Policy, and Security in the 21st Century, University of Southern California, Los Angeles; November 1996.
68. Conference Lecture, II Southern Connection Congress on Southern Temperate Biota and Ecosystems: Past, Present and Future, Valdivia, Chile; January 1997.
69. Topical Lecture, American Association for the Advancement of Science [AAAS] Meeting, Seattle, Washington; February 1997.
70. The First Noye Johnson Distinguished Lectureship, Department of Earth Sciences, Dartmouth College, Hanover, New Hampshire; April 1997.
71. Invited Speaker and Panelist, The Recovery and Future of the Northeastern Forest, A Symposium presented by The Center for Conservation Biology and Environmental Studies, Connecticut College and the Connecticut Forest and Park Association, New London, Connecticut; April 1997.
72. Invited Lecturer, Center for Freshwater Studies, University of Alabama, Tuscaloosa; April 1997.
73. Invited Lecture, Switzer Foundation, Hubbard Brook Experimental Forest, New Hampshire; November 1997.
74. Joseph Henry Science Lecture, co-sponsored by American Association of University Women and General Electric Research and Development Center, Schenectady, New York; November 1997.
75. Invited Lecture, Hudson River Environmental Society, Inc., Newburgh, New York; November 1997.
76. Opening Plenary Lecture and closing summary statement; Research in the Taieri Catchment, A symposium supporting multidisciplinary environmental research in Otago and celebrating the sesquicentennial of Dunedin, University of Otago, Dunedin, New

- Zealand; February 1998.
77. Invited Lecturer (in conjunction with 80th Anniversary of Wageningen Agricultural University); March 1998.
 78. R.A. Vollenweider Award and Lectureship in Aquatic Sciences, Canada Centre for Inland Waters, National Water Research Institute; March 1998.
 79. The Edward Bronfman Family Foundation Lecture, University of Vermont, Burlington; April 1998.
 80. Invited Speaker, American Philosophical Society, Philadelphia, PA; April 1998.
 81. Invited Lecture, Department of Natural Resources and Environmental Sciences, University of Illinois, Champaign; October 1998.
 82. Invited Speaker, Eville Gorham Symposium, University of Minnesota, St. Paul; November 1998.
 83. Joan Milliken Stroud Memorial Lecture, Stroud Water Research Center, Avondale, PA; November 1998.
 84. Edwin Way Teale Lecture, University of Connecticut, Storrs; December 1998.
 85. Plenary Lecture, American Society of Limnology and Oceanography Aquatic Sciences Meeting, Santa Fe, New Mexico; February 1999.
 86. Video Teleconference Lecture “Ecosystem Structure and Function, Change over Time” with University of Vermont’s course, “Health and the Environment: Exploring Critical Connections – Part II: Ecology, Human Health, and Emerging Infections” Institute of Ecosystem Studies, Millbrook, NY; April 1999.
 87. Plenary Lecture, Conference Summary Lecture and “Biogeochemistry of calcium: Long-term studies at Hubbard Brook” at ‘Frontiers of Catchment Biogeochemistry’ Conference, CSIRO Land and Water, Canberra, ACT, Australia; November/December 1999.
 88. Invited Speaker, Landcare Research New Zealand Ltd., Lincoln University, Lincoln, NZ; February 2000.
 89. Plenary Speaker, ‘Biology: Challenges for the New Millennium,’ American Institute of Biological Sciences 51st Annual Meeting, Washington, D.C.; March 2000.
 90. Invited Speaker, Recent Advances in Limnology and Oceanography Seminar Series, “Limnology and Freshwater Ecosystems in the Twenty-First Century,” Great Lakes WATER Institute, University of Wisconsin-Milwaukee, WI; May 2000.
 91. Invited Speaker, The Effects of Acid Deposition on Northeastern Forests, “Acid Deposition in Context.” Hubbard Brook Research Foundation and Society for the Protection of New Hampshire Forests, New Hampshire Technical Institute, Concord, NH; June 2000.

92. Walker-Ames Lecture, University of Washington, Seattle; March 2001.
93. Invited Lecturer, “Integrated Catchment Knowledge and Management,” Watershed Ecology and Management Class, University of Washington, Seattle; March 2001.
94. Huxley Lecture, The Royal Society and Institute of Biology, London, UK; April 2001.
95. Invited Lecturer, Nicholas School of the Environment and Earth Sciences, Duke University; April 2002.
96. Plenary Speaker, Biogeomon 2002, University of Reading, United Kingdom; August 2002.
97. Lane Family Lecture in Environmental Science, Washington State University, Pullman; September 2002.
98. Keynote Speaker, Biogeochemical Cycles in Temperate Forest Ecosystems, International Workshop, Bilateral [international] scientific and technological cooperation between Flanders and Chile, Universidad Austral de Chile, Valdivia; November 2002.
99. Festschrift Dinner Speaker, Lee M. Talbot Festschrift, “From Conservation to Sustainability: The Co-Evolution of Science and Policy.” Washington, D.C.; April 2003.
100. Commemorative Address, 2003 Blue Planet Prize, “Environmental Challenges in the Twenty-First Century and Our Respect for Nature.” The Asahi Glass Foundation, Tokyo, Japan; October 2003.
101. Foreign Correspondents’ Club of Japan, 2003 Blue Planet Prize, Tokyo, Japan; October 2003.
102. Invited Speaker, National Institute for Environmental Studies, Tsukuba City, Japan (in conjunction with Blue Planet Prize); October 2003.
103. Invited Speaker, Austrian Academy of Sciences, Vienna, Austria; November 2003.
104. Invited Lecturer, Universität für Bodenkultur, Institute of Forest Ecology, Vienna, Austria; November 2003.
105. Invited Speaker, School of Science & Engineering Colloquium Series, SUNY New Paltz, NY; November 2003.
106. Invited Lecturer, School of Botany, University of Melbourne, Australia; February and March 2004.
107. Invited Speaker, Director’s Circle, Royal Botanic Gardens, Melbourne, Australia; February 2004.
108. Invited Lecturer (with Professor Peter Cullen), Australian Land & Water and Cooperative Research Centre for Freshwater Ecology, Canberra, Australia; February 2004.
109. Invited Speaker, Australian Institute of International Affairs, Melbourne, Australia; March 2004.

110. Invited Speaker, Australia-Israel Chamber of Commerce (with Governor John Landy), Melbourne, Australia; March 2004.
111. Miegunyah Lecture, University of Melbourne, Australia; March 2004.
112. Invited Speaker, Dinner at Government House (with Governor John Landy), Melbourne, Victoria, Australia; April 2004.
113. Invited Lecturer, Madison Ecology Group, and Spring Symposium, University of Wisconsin-Madison; April 2004.
114. Keynote Speaker, Center for the Environment, Plymouth State University, Plymouth, NH; June 2004.
115. Invited Speaker, Lake Sunapee Protective Association, Sunapee, NH; July 2004.
116. Invited Speaker, Squam Lakes Science Center, Holderness, NH; July 2004.
117. Presidential Address, International Society of Theoretical and Applied Limnology, Lahti, Finland; August 2004.
118. Canon Environmental Scholar, College of William and Mary and Virginia Institute of Marine Sciences, Williamsburg, VA; September 2004.
119. Invited Speaker, Science in the Northwoods, at Camp Manito-wish, Boulder Junction, WI; September 2004.
120. Keynote Speaker, 100 Years of Athletics, Manchester College, North Manchester, IN; September 2004.
121. Banquet Speaker, Center for Environmental Information, Rochester, NY; October 2004.
122. Moore Lecture, Department of Environmental Sciences, University of Virginia, Charlottesville, VA; October 2004.
123. Keynote Lecture, Virginia Mountain Stream Symposium, University of Virginia, Charlottesville, VA; October 2004.
124. Invited Lecturer and Panelist, 'The Liberal Education: Dead or Alive,' Dartmouth College, Hanover, NH; November 2004.
125. Lecture, Summer School Session to Trinity College and University of Melbourne, Melbourne, Australia (videoconferenced from Marist College); December 2004.
126. Banquet Speaker, New York State Federated Garden Club's 2005 Annual Meeting, Poughkeepsie, NY; March 2005.
127. Honors' Seminar Speaker, Rubenstein School of Environment and Natural Resources, University of Vermont, Burlington, VT; March 2005.
128. Science Center Symposium Dedication, Invited Presenter of 'Reflections', "Liberal Education: A Personal View", Manchester College, North Manchester, Indiana;

September 2005.

129. Invited Speaker, Department of Ecology and Evolutionary Biology, University of Connecticut, Storrs, Connecticut; November 2005.
130. Keynote Lectures (2), Environmental Chemistry Student Symposium, Pennsylvania State University, State College, PA; March 2006.
131. Invited Lecturer, Northwest Fisheries Science Center, Seattle, Washington; October 2006.
132. Keynote Lecture, International Workshop, "Ecosystem Services in the Neotropics: State of the Art and Future Challenges." FORECOS, Universidad de Chile, Valdivia; November 2006.
133. Conservation Law Foundation, 'Understanding Ecological and Economic Impacts of Acid Rain on Northeastern Forests' – Implications for Timber Owners, Investors, Forest Managers, Sugarmakers, State Governments – University of New Hampshire, Durham; November 2006.
134. Cornell University, Program of Biogeochemistry and Environmental Biocomplexity; December 2006.
135. Invited Lecturer, Senda Darwin, Chiloe Island, Chile; March 2007.
136. Presidential Lecture, International Society of Limnology (formerly, International Association of Theoretical and Applied Limnology; Societas Internationalis Limnologiae). SIL Meeting, Montreal, Quebec, Canada; August 2007.
137. Invited Lecturer, Ecology Center, Utah State University, Logan, Utah; October 2007.
138. Cornell-Gladstone-Hanlon-Kaufmann Lecture Series, State University of New York, Oneonta; October 2007.
139. Invited Lecturer, University of Connecticut-Storrs; October 2007.
140. Invited Speaker, Duke University; November 2007.
141. Invited Lecturer, Monash University; December 2007.
142. Invited Lecturer, CSIRO, Canberra, ACT, Australia. February, May 2008; Adelaide, S.A., March 2008; Wodonga, VIC, March 2008; Townsville, Qld., April 2008.
143. Invited Lecturer, Australian Rivers Institute, Griffith University, Brisbane, Queensland, Australia; April 2008.
144. Invited Lecturer, University of Queensland, Brisbane, Australia; April 2008.
145. Invited Speaker, National Water Commission, Canberra, ACT, Australia; February 2008; Adelaide; May 2008.
146. Invited Lecturer, University of Canberra, ACT, Australia; May 2008.

147. Invited Special Lecturer, Australian Rivers Institute, Conservatorium Theatre, Queensland Conservatorium, Griffith University, Brisbane, Queensland, Australia; August 2008.
148. Invited Speaker and Panelist, Aldo Leopold Centennial Celebration 2009. A Cultural Conversation: Aldo Leopold, the Southwest, and the Evolution of a Land Ethic for the Future. National Hispanic Cultural Center, Albuquerque, NM; February 2009.
149. Invited Lecturer, Southern Illinois University, Carbondale, Illinois; March 2009.
150. Invited Plenary Speaker, 3rd Connecticut Conference on Natural Resources (CCNR), University of Connecticut-Storrs; March 2009.
151. Jane and Whitney Harris Lecturer, University of Missouri-St. Louis and Missouri Botanical Garden; March 2009.
152. Graduate-Student Invited Lecturer, Program in Ecology, Evolution, and Conservation Biology's seminar series, University of Illinois, Champaign-Urbana; March/April 2009.
153. At-Large H. Burr Steinbach Scholar, Massachusetts Institute of Technology and the Woods Hole Oceanographic Institution, Woods Hole, Massachusetts; July 2009.
154. Invited Lecturer, Session on Special Series on Coupled Biogeochemical Cycles at 94th Ecological Society of America, Albuquerque, NM; August 2009.
155. Conservation and Landscape Ecology (CLE) Invited Speaker, "Dynamics of Nitrogen Biogeochemistry", Fenner School of Environment and Society, Australian National University, Canberra; September 2009.
156. Plenary Lecture, International Society of Limnology (SIL), Nanjing, China; October 2009.
157. Einstein Professorship Lecture, Chinese Academy of Sciences, Nanjing, China; November 2009.
158. Invited Lecturer, Graduate School of the Chinese Academy of Sciences, Beijing, China; November 2009.
159. Honorary Ph.D. Lecture, Jinan University, Guangzhou, China; November 2009.
160. Invited Lecturer, Southern China Botanical Garden, Guangzhou, China; November 2009.
161. Invited Speaker, "Effective Ecological Monitoring", Fenner School of Environment and Society, Australian National University, Canberra; March 2010.
162. Conservation and Landscape Ecology (CLE) Invited Speaker, "Mountain-top coal mining in the U.S.", Fenner School of Environment and Society, Australian National University, Canberra; April 2010.
163. Presented Keynote Address to National Natural Resource Management Knowledge Conference, Darwin, NT, Australia [conference 20-22 April 2010].

164. Plenary Speaker and Workshop Synthesizer for Meeting of Motueka Integrated Catchment Management Workshop, 10-year anniversary meeting, Nelson, New Zealand. “Integrated Research, Monitoring and Management at the Catchment Scale (from rainwater to the sea and everything in between)” [workshop, 26-29 April 2010].
165. Invited Speaker – National Water Commission, Canberra, Australia; May 2010.
166. Keynote Lecture, Hubbard Brook Research Foundation Consortium Second Annual Meeting, “Mirror Lake: Ecological Insights from Long-Term Studies”, Plymouth State University, Plymouth, NH; June 2010.
167. Edwin Way Teale Lecture, University of Connecticut, Storrs; September 2010.
168. Invited Speaker, Austrian Academy of Sciences and Bodenkultur Institute (BOKU) Lecture - Vienna, Austria; October 2010.
169. Invited Speaker, Department of Ecology and Evolutionary Biology; University of Connecticut, Storrs, public lecture; November 2010.
170. Invited Speaker, Marist College; January 2011.
171. Invited Speaker, University of Pennsylvania, Philadelphia; January 2011.
172. Invited Speaker, Department of Limnology, Uppsala University; March 2011.
173. Invited Speaker, IGB (Leibniz-Institute of Freshwater Ecology and Inland Fisheries), Institute of Biology Free University of Berlin, Germany; April 2011.
174. Invited Plenary Speaker, North American Benthological Society (NABS), Providence, RI; May 2011.
175. Invited Speaker, University of New England, Armidale, New South Wales, Australia; August 2011.
176. Invited Speaker, University of Wyoming, Laramie; October 2011.
177. J. Michael Dunmire Lecture, University of Missouri, Columbia; November 2011.
178. Invited Speaker, Greenwich Bruce Museum, Greenwich, CT; December 2011.
179. Invited Convocation Speaker, College of Mathematics and Science; Montclair State University, NJ, May 2012.
180. Invited Speaker, Global Change Biology class, Department of Limnology, University of Vienna, Austria; October 2012.
181. Invited Speaker, Global Element Cycles course, Geosciences Department, Lund University, Lund, Sweden; November 2012.
182. Invited Speaker, Uppsala University, Sweden; April 2013.
183. Keynote Speaker, Hubbard Brook Ecosystem Study 50th Celebration, Robert S. Pierce

- Ecosystem Laboratory, Northern Research Station, Hubbard Brook Experimental Forest, North Woodstock, New Hampshire; July 2013.
184. Invited Speaker, Kansas State University, Biology Department, Manhattan, Kansas; October 2013.
 185. Invited Speaker, Jones Center Conference: Conservation and Natural Resource Management in an Uncertain Future: Using the Southeastern U.S. as a Model for Managing Change. Bainbridge, Georgia; November 2013.
 186. Invited Speaker, University of Connecticut Ecology and Evolutionary Biology; December 2013.
 187. Invited Speaker, Water Management Meeting, Hartford, CT; January 2014.
 188. University of Connecticut Seminar Series. "Acid Rain: A long unfinished journey." April 2, 2015.
 189. Presentation, GLEON meeting – Trout Lake. August 19, 2015.
 190. Featured Presentation, HBEF 60th Anniversary Meeting. October 10, 2015.
 191. Lecture, University of Connecticut. "Current Issues in Environmental Science." November 5, 2015.
 192. Presentation and Class Discussion, University of Maryland. "Classic Readings in Ecology." November 6, 2015.
 193. Lecture, University of Connecticut. "Plants in a Changing World." November 10, 2015.
 194. Presentation, Great Mountain Forest Lecture Series. "Land and Ethics: Aldo Leopold's Legacy in the 21st Century" (with Buddy Huffaker). Norfolk Library, Norfolk, CT. November 14, 2015.
 195. Lecture, North Carolina State University, Raleigh, NC. "Acid Rain, the long, but unfinished journey from discovery to political action." November 19, 2015.
 196. Honorary Lecture, Cary Institute of Ecosystem Studies, Millbrook, NY. "Lessons from a Forest Ecosystem." Ned Ames Honorary Lecture. June 24, 2016.
 197. Lecture to geohydrology class at Queen's University, Kingston, Ontario via SKYPE. "Hubbard Brook Ecosystem Study." 30 November, 2016.
 198. Lecture to limnology class on "stream ecosystems." University of Connecticut. 29 November 2016.
 199. Lecture to Cary Institute of Ecosystem Studies, FEE Course – "History of Ecosystem Ecology." January 3, 2017.

200. Lecture to LTER distributed course on Long-term Ecological Research: Advancing Ecological Theory (via the internet). "Mass Balance in Watershed Science." 11 November 2017.
201. Plenary Lecture to UCOWR/NIWR Annual Water Resources Conference, 26 June 2018 (Pittsburgh, PA). "Insights into Water Quality from Long-Term Research and Monitoring: Lessons Learned and Implications for the Future."
202. Talk at R. T. Holmes' 50-year celebration. Annual Hubbard Brook Cooperators' meeting. North Woodstock, New Hampshire. 11-13 July 2018.
203. Lecture to class, Plants in a Changing World, University of Connecticut. "Acid rain: A long and unfinished journey from discovery to political action." 2 October 2018.
204. Helz Lecture, University of Maryland. "Acid Rain: A long and unfinished journey from discovery to political action." 18 October 2018.
205. Lecture, Department of Geology, University of Maryland, "Lessons learned from long-term studies of a forest ecosystem." 19 October 2018.
206. Keynote Lecture to 2018 Scientific Symposium and Fall Meeting of National Atmospheric Deposition Program, Albany, NY: "Environmental Insights from NADP and Hubbard Brook Pertaining to Acid Rain." 8 November 2018.
207. Lecture to Limnology Class on "stream ecosystems", University of Connecticut. 13 November 2018.
208. Talk on scientific ethics. Seminar class for new EEB graduate students. University of Connecticut. 27 November 2018.
209. Lecture to FEE class. Cary Institute of Ecosystem Studies. "History of Ecosystem Ecology." 3 January 2019.
210. Krebs Lecture. University of Canberra, Australia: "Acid-rain: A long and unfinished journey from discovery to political action." 19 February 2019.
211. Lecture to Commonwealth Environmental Water Office (CEWO), Canberra, Australia. "Insights into delivering high-quality monitoring evaluation and research: Experiences and key learnings." 5 March 2019.
212. Panel member. CSIRO Forum (Future Ready Murray-Darling Basin Forum). Canberra, Australia. "Long-term monitoring." 13-15 March 2019.
213. Dutchess County Science Fair (talk). Presented the Gene E. Likens Award to recent science fair winner. 30 March 2019.
214. Talk at Cary Institute of Ecosystem Studies' Spring Luncheon at the University Club, Manhattan. "Keeping a pulse on the planet." 30 April 2019.

215. Adaptive Peaks Lecture, SUNY College of Environmental and Forest Biology, Syracuse, NY. "Acid rain: A long and unfinished journey from discovery to political action." 9 May 2019.
216. Moss Storytelling talk, Hubbard Brook Annual Cooperators' Meeting, Hubbard Brook, NH. "Hubbard Brook's connection to the center of the Earth." 9 July 2019.
217. Annual Hubbard Brook Cooperators' Meeting. 9-11 July 2019.
218. Talk, North Woodstock, NH. "Unusual sequence of ice cover formation on Mirror Lake." 10 July 2019.
219. Lecture in Global Change Ecology course, University of Connecticut, CT. "Acid Rain: A long and unfinished journey from discovery to political action." 16 September 2019.
220. Shepard Lecture, Trent University, Peterborough, ON, Canada. "Hubbard Brook: Lessons learned from long-term ecosystem studies." 17 October 2019.
221. Lecture in Current Issues in Environmental Science, University of Connecticut, CT. "The Acid rain wars and the Hubbard Brook Ecosystem Study." 30 October 2019.
222. Lecture in EEB graduate course (5100), University of Connecticut, CT. "Scientific ethics" (with Prof. P. Diggle). 12 November 2019.
223. Invited keynote lecture, Vienna, Austria. "Hubbard Brook: Lessons learned from long-term ecosystem studies." 19 November 2019.
224. Lecture to graduate students and faculty at Institute of Forest Ecology, BOKU, Vienna, Austria. "Long-term studies in ecology." 20 November 2019.
225. Lecture to Fundamentals of Ecosystem Ecology class, Cary Institute of Ecosystem Studies, Millbrook, NY. "History of Ecosystem Science." 6 January 2020.
226. Introductory Remarks, Youth Climate Change Town Hall for Presidential Candidates, Concord, NH, Hubbard Brook Research Foundation and Stonyfield Organic. 5 February 2020.

PROFESSIONAL ACTIVITIES, COMMITTEES, ETC.

1. Director, NSF Undergraduate Research Participation Program, Department of Biological Sciences, Dartmouth College; 1964-1967.
2. Member, Governor's Radiation Advisory Committee, New Hampshire; 1964-1969.
3. Member, New Hampshire Natural Preserves Forum; 1964-1969.
4. Received travel awards from NSF and NIH to attend XVI International Congress of Limnology in Poland; 1965.
5. Chairman, New England Division of the Task Force for the Conservation of Aquatic Ecosystems, U.S. I.B.P.; 1966-1967.

6. Member, NSF Science Faculty Fellowship Panel; 1966, 1968, 1970.
7. Member, U.S. National Committee, International Hydrological Decade; 1966-1970.
8. Representative of the American Society of Limnology and Oceanography to the AIBS Inter-Society Committee; 1967.
9. Member, Subcommittee on Conservation of Ecosystems, U.S. I.B.P.; 1967-1968.
10. Received travel award from NSF to attend XVII International Congress of Limnology in Israel; 1968.
11. Member-at-Large and Member of Board of Directors, American Society of Limnology and Oceanography; 1969-1972.
12. Member, Advisory Committee, Eastern Deciduous Forest Biome, Analysis of Ecosystems, U.S. I.B.P.; 1970-1971.
13. Member, Steering Committee, Cornell Program on Science, Technology and Society; 1970-1972.
14. Member, Governing Board, Water Resources and Marine Sciences Center, Cornell University; 1970-1972.
15. Ecological Advisor, U.S. Senate Committee on Public Works; 1970-1973.
16. U.S. National Representative to Societas Internationalis Limnologiae, 1970-2016; Executive Vice President, 1998-2002; President, 2004-2007.
17. Received travel award from American Society of Limnology and Oceanography and the Ecological Society of America to attend XVIII International Congress of Limnology in Russia; 1971.
18. Member, External Advisory Committee, Grassland Biome, Analysis of Ecosystems, U.S. I.B.P.; 1971-1972.
19. Chairman, Study Committee, Ecological Society of America; 1971-1974.
20. Member, National Academy of Sciences Panel for Southeast Asia Regional Workshop on the Use and Protection of Water Resources, Singapore; 1972.
21. Member, Committee on Biology of Pest Species, NAS, National Research Council; 1973-1976.
22. Member, Committee on Water Quality Policy, NAS, National Research Council; 1973-1976.
23. Member, Freshwater Sciences Committee, Pacific Science Association; 1973-1975.
24. Member, Water Research Strategy Review Committee, U.S. Environmental Protection Agency; 1974.

25. Received travel award from the Ecological Society of America to attend the First International Congress of Ecology in The Netherlands; 1974.
26. Member, Program Committee, First International Symposium on Acid Precipitation and the Forest Ecosystem, Ohio State University, Columbus, Ohio; 1974-1975.
27. Resource Advisor, New York State Department of Environmental Conservation; 1974-2000.
28. Member, Scientific Advisory Committee, Edmund Niles Huyck Preserves, Inc.; 1974-1979.
29. Member, Ecology Advisory Committee and Science Advisory Board, U.S. Environmental Protection Agency; 1975-1978.
30. Member, Cayuga Station Impact Study Steering Committee, representing Tompkins County Environmental Management Council; 1975-1976.
31. Member, Program Committee, IAGLR First Specialty Symposium on Precipitation and Aquatic Ecosystems, Orillia, Canada; 1975.
32. Member, NATO Advanced Research Institute on Acid Rain; 1976-1978.
33. Invited by the government of Norway to participate and chair a working group for an International Conference on the Effects of Acid Precipitation, Telemark, Norway; 1976.
34. Participant, SCOR-NAS Working Group on Tropospheric Transport of Pollutants to the Ocean, Miami, Florida; 1976.
35. Participant, Dahlem Konferenzen on Global Chemical Cycles and Their Alterations by Man, West Berlin; 1976.
36. Member, Precipitation Committee of the American Geophysical Union Section of Hydrology; 1977-1981.
37. Member, UNESCO Man and the Biosphere Directorate, Project 2 -- Temperate Forests; 1976-1978.
38. External examiner, Department of Biology, Dalhousie University; 1977.
39. Participant, Jubilee Symposium for 500-year celebration, University of Uppsala, Sweden; 1977.
40. Member, Review Panel for the Department of Biological Sciences, State University of New York at Buffalo; 1977.
41. Member, Assembly of Life Sciences, NAS National Research Council; 1977-1982.
42. Participant, NATO Advanced Research Institute on Effects of Acid Precipitation on Terrestrial Ecosystems, University of Toronto, Canada; 1978.
43. Participant, EPA-DOE Workshop on Effects of Acid Precipitation on Aquatic Ecosystems,

- Sagamore Conference Center, Adirondack Mountains, New York; 1978.
44. Member, Program Committee, Norwegian Ministry of the Environment, International Conference on the Ecological Impact of Acid Precipitation, Oslo, Norway; 1979-1980.
 45. Member, Scientific Advisory Committee, Committee for the Development of Oceanography in Israel, Israel Oceanographic and Limnological Research Institute; 1978-2000.
 46. Member, Editorial Committee, *Annual Review of Ecology and Systematics*, Annual Reviews, Inc., Palo Alto, California; 1979-1982.
 47. Participant/Chairperson, International Workshop on Ecosystem Nitrogen Cycles, Terrestrial Nitrogen Cycles -- Processes, Ecosystem Strategies and Management Impacts. SCOPE/UNEP International Nitrogen Unit and the Commission for Research on Natural Resources of the Swedish Council for Planning and Coordination of Research. Gysinge Wårdshus, Österfornebo, Sweden; September 1979.
 48. Member, Steering Committee for the Biological Effects Governing Board, National Atmospheric Deposition Program; 1979-1981.
 49. Consultant for SRI International, Menlo Park, California; 1979.
 50. Elected to membership in The Explorer's Club; 1979.
 51. Member, Review Panel for Gray Freshwater Biological Institute, University of Minnesota; 1979.
 52. Chairperson, NAS/NRC Workshop on the Flux of Carbon by Rivers to the Oceans, Woods Hole, Massachusetts; 1980.
 53. Chairperson of Policy Board, EPA Ecosystems Research Center, Cornell University; 1980.
 54. Member, Advisory Panel for the Congress of the U.S. Office of Technology Assessment (OTA) on the Impacts of Atmospheric Alteration; 1981-1984.
 55. Member, Review Group for Wetlands Protection, Environmental Defense Fund, Washington, D.C.; 1982.
 56. Member, Steering Committee, Ecotoxicology Program, The Andrew W. Mellon Foundation for a research and training program in ecotoxicology at the Institute for Comparative and Environmental Toxicology, Cornell University; 1982.
 57. Member, Nominating Committee, National Academy of Sciences; 1982-1984, 1987.
 58. Member, Acid Rain Peer Review Panel, Office of Science and Technology Policy (OSTP), Washington, D.C.; 1982-1984.
 59. Member, Science Advisory Board *ad hoc* committee to review National Acid Precipitation Assessment Program, U.S. Environmental Protection Agency; 1983-1984.

60. Participant/Speaker, Briefing on Acid Rain Legislation, Center for Energy and Environmental Management and *Inside EPA Weekly Report*, Arlington, Virginia; June 1983.
61. Advisor to President Reagan and the Cabinet on Acid Rain; September 1983.
62. Associate Editor, American Water Resources Association; 1983-1988.
63. Participant/Lecturer, 1983 Annual Meeting of the Coalition of Northeastern Governors, "Cleaning Up: Northeast Conference on Acid Rain and Hazardous Waste," Secaucus, New Jersey; December 1983.
64. Elected Member, Corporation of The New York Botanical Garden; 1984-1993.
65. Senior Advisor, Center of Energy and Environment Research [CEER], Department of Energy and University of Puerto Rico; 1983-1988.
66. Participant, NATO Advanced Research Workshop on Biogeochemical Cycles of Sulfur and Nitrogen in Remote Areas, Bermuda Biological Station for Research, St. George's, Bermuda; October 1984.
67. Participant/Speaker, CSIRO Division of Atmospheric Research and Bureau of Meteorology, The Scientific Application of Baseline Observations of Atmospheric Composition (SABOAC), Aspendale, Australia; November 1984.
68. Chairman/Organizer/Participant, First Cary Conference on The Status and Future of Ecosystem Science. Institute of Ecosystem Studies, Millbrook, New York; April/May 1985.
69. Chairman/Organizer/Participant, Symposium on Differentiating Between Natural Oscillations and Man-Made Perturbations in Aquatic Ecosystems. 48th Annual Meeting, American Society of Limnology and Oceanography, Minneapolis, Minnesota; June 1985.
70. Member, Scientific Advisory Committee, The Ecosystems Center, Marine Biological Laboratory, Woods Hole, Massachusetts; 1984-1985.
71. Member, *ad hoc* committee, Acid Rain: Science and Policy, Millbrook, New York and New York, New York; 1984-1985.
72. Member, U.S. Environmental Protection Agency Steering Committee for Mountain Cloudwater Chemistry, State University of New York, Albany, New York; 1984-1985.
73. Member, Environmental Advisory Board to Governor Mario M. Cuomo, State of New York; 1985-1994.
74. Advisor on Acid Rain to Drew Lewis, Special Envoy to President Reagan and to William Davis, Special Envoy to Prime Minister Mulroney, The White House, Washington, D.C.; August 1985.
75. Elected Chairman, Section of Population Biology, Evolution and Ecology (27), National Academy of Sciences; 1986-1989.

76. Participant, United States: China Air Pollution Technology Workshop, Nanjing Botanical Garden, Nanjing, China; and Institute of Environmental Chemistry, Academia Sinica, Beijing, People's Republic of China; November 1985.
77. Visiting Fellow, Chisholm Institute of Technology, Water Studies Centre, East Caulfield (Melbourne), Australia; February 1987.
78. Member, Editorial Advisory Board for Science Year, World Book, Inc.; 1987-1991.
79. Convenor/Participant, Second Cary Conference on Long-Term Studies in Ecology: Approaches and Alternatives. Institute of Ecosystem Studies, Millbrook, NY; May 1987.
80. Member, Board of Directors, Association for Ecosystem Research Centers (AERC); 1987-1996.
81. Trustee, Environmental Defense Fund, New York, New York; 1987-2005; Chairman, Scientific Advisory Committee, EDF, 1990-2005; Vice Chair, 1999-2005. **Honorary Trustee; 2005-present.**
82. Advisory Committee Member, Ph.D. Program in Biological Sciences, Fordham University; 1988-1990.
83. LTER Cedar Creek Advisory Panel Member, Cedar Creek, Minnesota; 1988-2002.
84. Advisor, Sand County Foundation, Aldo Leopold Memorial Reserve, Baraboo, Wisconsin; 1988-2001.
85. Invited Speaker, Testimony presented before U.S. House of Representatives Subcommittee on Natural Resources, Agriculture Research and Environment, Washington, D.C.; April 1988.
86. Member, Environmental Sciences Division Advisory Committee, Oak Ridge National Laboratory, Oak Ridge, Tennessee; 1988-2002.
87. Panel Member for Hudson River Foundation Symposium on Making the Estuary. Mohonk Mountain House, New Paltz, New York; November 1988.
88. External Reviewer, Department of Biological Sciences, University of Notre Dame, Indiana; November 1988, March 1997.
89. Advisor for Sierra Club Legal Defense Fund on Hoosier National Forest, Bloomington, Indiana; 1988.
90. Scientific Advisory Committee for Joseph W. Jones Ecological Research Center at Ichauway, Newton, Georgia; 1988-present [*Chairman 1988-2012*].
91. Advisor, Pace Center Advisory Board, Pace University of Law, Center for Environmental Legal Studies, White Plains, New York; 1988-2002.
92. Steering Committee/Participant, Third Cary Conference on Comparative Analyses of Ecosystems: Patterns, Mechanisms, and Theories. Institute of Ecosystem Studies,

- Millbrook, New York; May 1989.
93. Advisor, School of Natural Resources, University of Vermont, Burlington, Vermont; September 1988.
 94. Member, External Advisory Committee, Marine Biological Laboratory, Woods Hole, Massachusetts; 1989-1992.
 95. Advisor appointed by Governor Mario Cuomo, Commission on the Adirondacks in the Twenty-First Century, State of New York; 1989-1992.
 96. Invited Participant, Meeting of experts held by the Friedrich Ebert Foundation and the United Nations Centre for Science and Technology for Development on Peace, Development and the Role of Science and Technology, United Nations, New York; September 1989.
 97. Member of Advisory Panel for Crisis in the Atmosphere, *The Infinite Voyage*, A Production of WQED/Pittsburgh in association with the National Academy of Sciences; 1989.
 98. Member of Advisory Board, *Environmental Quarterly*, educational television series for WNET/THIRTEEN, New York, New York; 1990.
 99. Participant and Member of Planning Workshop for 1991 International Symposium on Terrestrial Ecosystems: Forests and Woodlands, Florence, Italy (May 1991), Commission of the European Communities, Brussels, Belgium; March 1990.
 100. Member, Selection Committee for Chair in Freshwater Biology at the Freshwater Biology Laboratory of Copenhagen University, Denmark; 1989-1990.
 101. Symposium Chair/Panelist, The New York Natural History Conference, Albany, New York; June 1990.
 102. Member, NRC/NAS Commission on Geosciences, Environment and Resources (CGER); 1990-1993.
 103. Member, NRC/NAS Board on Environmental Studies and Toxicology (BEST); 1990-1993.
 104. Plenary Chairman, International Conference on Acidic Deposition, Glasgow, Scotland; September 1990.
 105. Steering Committee and Participant, Fourth Cary Conference on Human versus Natural Influence on Ecosystems: Implications for Theory and Practice. Institute of Ecosystem Studies, Millbrook, New York; May 1991.
 106. Member, Committee of Environmental Quality Bond Act, New York State; 1990.
 107. Member, Advisory Committee, U.S. Baikal Research Association, for Baikal International Center for Ecological Research (BICER); 1991-2002.
 108. Editor (with J. Lawton) of Book Series, Methods in Ecology, Blackwell Publications; 1991-

- 2005.
109. Member, National Commission on the Environment, World Wildlife Fund, Washington, D.C.; 1991-1992.
 110. Faculty Committee Member, Institute for Biospheric Studies, Yale University; 1991-1994.
 111. Convenor/Participant, Antarctic Dry Valleys: Terrestrial and Aquatic Ecosystems. Institute of Ecosystem Studies, Millbrook, New York; October 1991.
 112. Steering Committee and Participant, Fifth Cary Conference on Linking Populations, Species Interactions, and Ecosystems. Institute of Ecosystem Studies, Millbrook, New York; 1992-1993.
 113. Participant, U.S. Geological Survey/Institute of Ecosystem Studies, Workshop on Large Rivers. Institute of Ecosystem Studies, Millbrook, New York; March-April 1992.
 114. Steering Committee, The Freshwater Imperative (FWI); 1992-1994.
 115. Member, Visiting Committee of Advisory Board, Center for the Environment, Cornell University; 1992-1995.
 116. Chairman of Steering Committee, National Science Foundation Workshop, Integrated Regional Models: Analysis of Interactions Between Humans and their Environment. Institute of Ecosystem Studies, Millbrook, New York; 1992-1993.
 117. Member, Challenges for Limnology Committee, American Society of Limnology and Oceanography; 1992-1993.
 118. Honorary Member, Bat Conservation International; 1992.
 119. Member, Kilham Memorial Lecture Committee, Societas Internationalis Limnologiae (SIL); 1992-2007.
 120. Member, Advisory Committee, Audubon Society of New Hampshire; 1993-1994.
 121. Member, Scientific Advisory Committee for the National Resource Ecology Laboratory, Colorado State University, Ft. Collins, Colorado; 1994-1997.
 122. Member, Life Sciences External Review Committee, University of Maryland System; 1995.
 123. Member, Scientific Advisory Committee for the Center for Ecological Health Research, University of California, Davis; 1995-1998.
 124. Member, Review Team, Cooperative Research Centre for Freshwater Ecology, Canberra, Australia; 1996, 1998.
 125. Member, Advisory Board, *Ecosystems*; 1997-2012.
 126. Member, ASLO Journal Committee (American Society of Limnology and Oceanography);

1997-1999.

127. Organized and Chaired Environmental Defense Fund Workshop on High Volume Organic Wastes, New York, New York; January 1998.
128. Organized and Chaired Environmental Defense Fund Workshop on Antibiotic Resistance, Islamorada, Florida; January 1999.
129. Invited member of Independent Science Panel formed through the International Council for Scientific Unions, at the request of World Heritage Committee of UNESCO, Review of proposed uranium mine near Kakadu National Park, Australia; April 1999-May 2000.
130. Member, LTER Committee on Scientific Initiatives [CoSi]; 1999-2005.
131. Advisor, Landcare Research New Zealand Ltd., Lincoln, NZ; January/February 2000.
132. Governor's Advisory Committee for the Henry Hudson Institute for Riverine and Estuarine Research and Education; 2000-2003.
133. Organized and Chaired Environmental Defense Fund 'Science Day' Workshop on Atmospheric Nitrogen, Menlo Park, California; May 2000.
134. Organized and Chaired Environmental Defense 'Science Day' Workshop on Invasion of Alien Species, New York, New York; January 2001.
135. Reviewer, Narran Lakes Project, NSW, Australia; February 2001, April 2004.
136. Co-Organized and Led: Ethics in Scientific Research, Monash University, Melbourne, Australia; February 2001.
137. Advisor, The Science Center Advisory Committee, Manchester College, North Manchester, Indiana; 2000-2005.
138. President-Elect; Board of Directors; Executive Committee; Chair of Long-Range Planning Committee, American Institute of Biological Sciences (AIBS), 2001; President, 2002; Past President, 2003.
139. President; Executive Committee, Societas Internationalis Limnologiae (SIL), 2001-2003; Re-Elected President, 2004-2007.
140. Attended Council for Scientific Society Presidents' Meeting, Washington, D.C.; May 2002.
141. Invited Participant, ASLO Workshop 'Emerging Research Issues for Limnology: The Study of Inland Waters', American Society of Limnology and Oceanography, Boulder, CO; December 2002.
142. Keynote Speaker and Science Panel Chair, Lee M. Talbot Festschrift, "From Conservation to Sustainability: The Co-Evolution of Science and Policy." Washington, D.C.; April 2003.
143. Recorded Interview with Jackie May of ABC's "Earthbeat." March 2004.

144. Presentation and Discussion with Dialectic Society's 'Soapbox Discussion Series', the Environment Club and Green Group of Trinity College, University of Melbourne; March 2004.
145. National Advisory Board, National Ecological Observatory Network [NEON]; 2004-2007.
146. Presentation and Discussions at Plymouth State University Center for the Environment Retreat, Minary Center, Meredith, NH; June 2004.
147. Invited Speaker and Panelist, "The Liberal Education: Dead or Alive?" Dartmouth College, Hanover, NH; November 2004.
148. Editor-in-Chief of the Encyclopedia of Inland Waters, Elsevier Publishing; 2005-2007.
149. Invited Participant, 'Sulfur Budgets of Small, Forested Watersheds' Workshop at Syracuse University; February 2005.
150. Discussant/Speaker, AAAS Meeting, Washington, D.C.; February 2005.
151. Editorial Advisor, *Limnology*, The Japanese Society of Limnology; April 2005-March 2007.
152. Euro-Limpacs Review Expert, European Commission, Brussels; May 2005.
153. External Advisory Committee, Strategic Assessment of the School of Natural Resources and Environment, University of Michigan, Ann Arbor; August 2005.
154. Recorded Interview (Live), WillI Radio Station, Willimantec, CT; November 2005.
155. Invited to Kindergarten Class at Chancellor Livingston Elementary School to discuss science topics with children ('Ecology of Moose Antlers!'), Rhinebeck, NY; December 2005.
156. Honorary Board Member, Friends of Mirror Lake Association (FMLA), North Woodstock, NH; 2007-*present*.
157. Recorded Radio Interview, "Conversation with Gene E. Likens", 4ZZZ Radio, Brisbane, Queensland, Australia. www.thewire.org.au – produced by Heidi Millington; 11 April 2007.
158. Invited to workshop, CSIRO Healthy Waters Ecosystems, Theme Planning Meeting, Christian Lab, Black Mountain, Canberra, Australia; January 2008.
159. Invited to workshop, CLLAMM Futures Workshop (Coorang Lower Lakes and Murray Mouth), University of Adelaide and Flinders University, Adelaide, S.A., Australia; March 2008.
160. Invited to workshop, TRaCK Workshop (Tropical Rivers and Coastal Knowledge), Charles Darwin University, Darwin, NT, Australia; April-May 2008.
161. Recorded Radio Interview, ABC interview on 666 AM with Genevieve Jacobs; 7 May

- 2008.
162. Organized Workshop, Ecosystems Workshop, The Carrington, Bungendore, NSW, Australia; April 2008.
 163. Speaker and Co-Organizer, Colloquium Celebrating Centennial of Limnology at Cornell University, Ithaca, NY; April 2009.
 164. Invited to Review Program, The Thomas Foundation. Noosaville, Queensland, Australia; April 2010.
 165. Invited Eminent Reviewer, Murray Darling Basin Authority, Canberra, ACT, Australia; May 2010.
 166. Speaker and Plenary Session Chair, Society of International Limnology (SIL) Congress, Cape Town, South Africa; August 2010.
 167. Guest Visiting Professor in Environmental Science, Uppsala University, Uppsala, Sweden; February-April 2011.
 168. Plenary Speaker and Panel Participant, North American Benthological Society (NABS) Annual Meeting, Providence, RI; May 2011.
 169. Advisory Board Member, Sub-Antarctic Biocultural Conservation (SABC) Research Cluster Program, University of North Texas and IEB; May 2011-present.
 170. Guest Visiting Professor in Department of Geography and Planning, University of New England, Armidale, New South Wales, Australia; August 2011.
 171. Guest Visiting Professor and Speaker, University of Wyoming, Laramie; October 2011.
 172. Invited Member, Lewis and Clark Fund for Exploration and Field Research Committee, American Philosophical Society; 2011-2014.
 173. Guest Visiting Professor and J. Michael Dunmire Invited Speaker, University of Missouri, Columbia; November 2011.
 174. Invited Speaker, Greenwich Bruce Museum, Greenwich, CT; December 2011.
 175. Radio Interview, Wayne Norman Wili Radio Show, Willimantic, CT; December 2011.
 176. Participant and Speaker, OPUS Workshop, National Science Foundation; September 2012.
 177. Invited Participant, Environmental Laureate's Convention, European Environment Foundation, Freiburg, Germany; March 2013.
 178. Guest Visiting Professor, Department of Limnology, EBC-Uppsala University, Sweden; March-April 2013.
 179. Interview with WAMC Allison Dunne, "Researchers find acid rain legacy impacts eastern waters." The news story was broadcast on WAMC on 28 August 2013.

<http://wamc.org/post/researchers-find-acid-rain-legacy-impacts-eastern-waters>

180. Interview with Rebekah Marcarelli, “Acid rain threatens chemistry of rivers and streams by changing alkalinity; ‘legacy effect’ from 5 decades of pollution may be bad news for aquatic life.” The news story was published in Headlines and Global News on 28 August 2013. <http://www.hngn.com/articles/11057/20130827/acid-rain-threatens-chemistry-rivers-streams-changing-alkalinity-legacy-effect.htm>
181. Interview with Catherine Griffin, “Rivers and streams in U.S. change their chemistry due to acid rain.” The news story was published in the Science World Report on 27 August 2013. <http://www.scienceworldreport.com/articles/9075/20130827/rivers-streams-change-chemistry-due-acid-rain.htm>
182. Interview with Tamarra Kemsley, “Rivers in eastern U.S. becoming alkaline, affecting water supplies.” The news story was published in Nature World News on 27 August 2013. <http://www.natureworldnews.com/articles/3673/20130827/rivers-eastern-becoming-alkaline-affecting-water-supplie.htm>
183. “In U.S. ‘rivers on Roloids’ are legacy of acid rain.” The news story was published on AFP.com on August 27, 2013. <http://www.google.com/hostednews/afp/article/ALeqM5gX9k1MdtKstEeg1H8W8K57zKUAkw?docId=CNG.03d45342ac8babb91b38e0b587305283.481>
184. “Human activity negatively impacts water chemistry.” The news story was published on Environmental News Network on August 26, 2013. <http://www.enn.com/ecosystems/article/46358>
185. Interview with NPR Christopher Joyce, “Rivers On Roloids’: How Acid Rain Is Changing Waterways” NPR - September 13, 2013. <http://www.npr.org/2013/09/13/221725348/rivers-on-roloids-how-acid-rain-is-changing-waterways?sc=17&f=1001>
186. Interview with Cory Edgar, NPR ‘Earthwise’; September 2013.
187. Interview, Ensia, long-term ecological research; November 2013.
188. Interview with Mike Tennyson; 5 May 2014.
189. Interview with Sam of NHPR, update on acid rain; 24 May 2014.
190. University of Connecticut Water Planning Meeting. 20 February 2015.
191. Meeting of the Scientific Advisory Committee, Jones Ecological Research Center. 9-13 February 2015 and 20-23 October 2015.
192. Hubbard Brook Committee of Scientists meeting. Cary Institute of Ecosystem Studies, Millbrook, NY, 7 April 7 2015 and 7 October 2015.
193. Meeting, American Philosophical Society. Philadelphia, PA, 23-25 April 2015.
194. Board Meeting and River Tour, Hudson River Foundation. 5-7 June 2015 and 2 October

- 2015.
195. Board Meetings, Hubbard Brook Research Foundation. 7 July 2005, 24 September 2015, and 26 October 2015 (Program Committee).
 196. Annual Hubbard Brook Cooperators' meeting. Hubbard Brook Experimental Forest, 8-10 July 2015.
 197. Ecological Society of America Meeting. Baltimore, MD, 9-13 August 2015.
 198. Meeting with The Nature Conservancy/University of Connecticut, Storrs. 25 September 2015.
 199. Attended, Great Mountain Forest Board Meeting. Norfolk, CT, 12 November 2015.
 200. Attended, 33 Congress of the International Society of Limnology in Torino, Italy. 31 July 2016 – 5 August 2016. (Presented scientific paper, "Long-term chemical changes in Mirror Lake, New Hampshire, USA"; co-chaired session (Biochemistry and Ecology of Inland Waters); US National Representative to the International Committee.)
 201. Presented, Novus IV Workshop at Hubbard Brook, New Hampshire. 27-30 September 2016. ("Insights from long-term studies of ecosystems at Hubbard Brook and the future.")
 202. Annual Hubbard Brook Cooperators Meeting. 11-13 July 2018.
 203. Board Meeting. NSF AISL program. University of Connecticut. 26 October 2018.
 204. Commonwealth Environmental Water Office (CEWO), Canberra, Australia. Long-term monitoring in the Murray-Darling Basin. 1 February, 4-5 March 2019.
 205. Co-organizer/moderator. Franklin Institute Award Symposium at Temple University. "Science communication: How we do it, how we can improve." 10 April 2019.
 206. American Philosophical Society. Philadelphia. 25-27 April 2019.
 207. Annual Hubbard Brook Cooperators' Meeting. 9-11 July 2019.
 208. Oral History Interview: Manchester University (Kristen Short and Jerry Sweeten), 6 September 2019.
 209. Oral History Interview: Hubbard Brook Research Foundation (Dan McConvey), 14 October 2019.
 210. Oral History Interview: US Fish and Wildlife Service (Mark Madison). 24 October 2019.
 211. Board Meeting. NSF AISL program. University of Connecticut. 21 October 2019.
 212. Oral History Interview: Hubbard Brook Research Foundation (Clara Chaisson). 21 January 2020.
 213. Oral History Interview: AIBS Past Presidents (James Verdier). 24 April 2020.

214. Meeting of the American Philosophical Society. Philadelphia. 20 April 2020 (Zoom).
215. Meeting of the National Academy of Sciences. Washington, D.C. 23-27 April 2020 (Zoom).
216. Interview discussing Likens et al. 1970 – Effects of forest cutting and herbicide treatment on nutrient budgets in the Hubbard Brook watershed-ecosystem. Reflections on papers past on Wordpress.com (Hari Sridhar). 19 November 2020 (Skype).

BOOKS:

1. Likens, G. E. (ed.). 1972. Nutrients and Eutrophication. American Society of Limnology and Oceanography, Special Symposia. Lawrence, Kansas. Volume I. 328 pp.
2. Likens, G. E., F. H. Bormann, R. S. Pierce, J. S. Eaton and N. M. Johnson. 1977. Biogeochemistry of a Forested Ecosystem. Springer-Verlag New York Inc. 146 pp.
3. Bormann, F. H. and G. E. Likens. 1979. Pattern and Process in a Forested Ecosystem. Springer-Verlag New York Inc. 253 pp.
4. Rodhe, W., G. E. Likens and C. Serruya (eds.). 1979. Lake Metabolism and Management. Papers Emanating from the Limnological Jubilee Symposium of Uppsala University (1477-1977), Sweden. *Ergebnisse Limnol. Arch. Hydrobiol.* 13.
5. Wetzel, R. G. and G. E. Likens. 1979. *Limnological Analyses*. W. B. Saunders Co., Philadelphia. 357 pp.
6. Likens, G. E. (ed.). 1981. Some Perspectives of the Major Biogeochemical Cycles, Vol. 17. SCOPE IVth General Assembly, Stockholm, Sweden. John Wiley & Sons Ltd., Chichester. 170 pp.
7. Likens, G. E. (ed.). 1985. *An Ecosystem Approach to Aquatic Ecology: Mirror Lake and Its Environment*. Springer-Verlag New York Inc. 516 pp.
8. Likens, G. E. (ed.). 1989. *Long-Term Studies in Ecology. Approaches and Alternatives*. Springer-Verlag New York Inc. 214 pp.
9. Wetzel, R. G. and G. E. Likens. 1991. *Limnological Analyses. Second Edition*. Springer-Verlag New York Inc. 391 pp.
10. Likens, G. E. 1992. *The Ecosystem Approach: Its Use and Abuse. Excellence in Ecology, Vol. 3*. Ecology Institute, Oldendorf/Luhe, Germany. 167 pp.
11. Train, R. E., P.A.A. Berle, J. E. Bryson, A. W. Clausen, D. M. Costle, M. M. Kunin, G. E. Likens, C. A. Matos, G. S. Omenn, P. H. O'Neill, A. M. Rivlin, P. Robinson, S. C. Rockefeller, W. D. Ruckelshaus, G. R. Scott, J. G. Speth, L. M. Thomas, V. J. Tschinkel and R. M. White. 1993. *Choosing a Sustainable Future. The Report of the National Commission on the Environment*. Island Press, Washington, D.C. 180 pp.
12. Groffman, P. M. and G. E. Likens (eds.). 1994. *Integrated Regional Models: Interactions*

- Between Humans and Their Environment. Chapman & Hall, New York. 157 pp.
13. Likens, G. E. and F. H. Bormann. 1995. Biogeochemistry of a Forested Ecosystem. Second Edition, Springer-Verlag New York Inc. 159 pp.
 14. Pickett, S. T. A., R. S. Ostfeld, M. Shachak and G. E. Likens (eds.). 1997. The Ecological Basis of Conservation: Heterogeneity, Ecosystems, and Biodiversity. Chapman & Hall, New York. 466 pp.
 15. Wetzel, R. G. and G. E. Likens. 2000. Limnological Analyses. Third Edition. Springer-Verlag New York Inc. 429 pp.
 16. Likens, G. E. (Editor-in-Chief). 2009. Encyclopedia of Inland Waters. 3 Volumes. Elsevier, Academic Press.
 17. Winter, T. C. and G. E. Likens (eds.). 2009. Mirror Lake: Interactions among Air, Land and Water. University of California Press. 361 pp.
 18. Likens, G. E. (Editor). 2010. Biogeochemistry of Inland Waters. Elsevier, Academic Press.
 19. Likens, G. E. (Editor). 2010. Lake Ecosystem Ecology. Elsevier, Academic Press.
 20. Likens, G. E. (Editor). 2010. Plankton of Inland Waters. Elsevier, Academic Press.
 21. Likens, G. E. (Editor). 2010. River Ecosystem Ecology. Elsevier, Academic Press.
 22. Lindenmayer, D. B. and G. E. Likens. 2010. Effective Ecological Monitoring. CSIRO Publishing and Earthscan. 170 pp.
 23. Weathers, K. C., D. L. Strayer and G. E. Likens (eds.). 2013. Fundamentals of Ecosystem Science. Elsevier Academic Press. 312 pp. (available in Spanish)
 24. Likens, G. E. 2013. Biogeochemistry of a Forested Ecosystem, Third Edition. Springer. 208 pp.
 25. Holmes, R. T. and G. E. Likens. 2016. Hubbard Brook: The Story of a Forest Ecosystem. Yale University Press, New Haven. 271 pp.
 26. Lindenmayer, D. B. and G. E. Likens. 2018. Effective Ecological Monitoring (2nd Edition). CSIRO Publishing. 224 pp.
 27. Weathers, K. C., D. L. Strayer and G. E. Likens (eds.). 2021. Fundamentals of Ecosystem Science. (2nd Edition), Elsevier Academic Press. In Press.

PUBLICATIONS:

1. Likens, G. E. and A. D. Hasler. 1960. Movement of radiosodium in a chemically stratified lake. *Science* 131(3414):1676-1677.
2. Likens, G. E. and A. D. Hasler. 1962. Movements of radiosodium (Na^{24}) within an ice-covered lake. *Limnol. Oceanogr.* 7(1):48-56.

3. Hasler, A. D. and G. E. Likens. 1963. Biological and physical transport of radionuclides in stratified lakes. pp. 463-470. In: V. Schultz and A. W. Klement, Jr. (eds.). Radioecology. American Institute of Biological Sciences and Reinhold Publ. Corp., New York.
4. Likens, G. E. 1964. An unusual distribution of algae in an Antarctic lake. *Bull. Torrey Bot. Club* 91(3):213-217.
5. Likens, G. E. 1964. Pesticide pollution of freshwater ecosystems. *Bull. Ecol. Soc. Amer.* 45(4):157-159.
6. Ragotzkie, R. A. and G. E. Likens. 1964. The heat balance of two Antarctic lakes. *Limnol. Oceanogr.* 9(3):412-425.
7. Likens, G. E. 1965. Measurement of background radiation in lakes. *Ecology* 46(4):544-548.
8. Likens, G. E. and R. A. Ragotzkie. 1965. Vertical water motions in a small ice-covered lake. *J. Geophys. Res.* 70(10):2333-2344.
9. Likens, G. E. and P. L. Johnson. 1966. A chemically stratified lake in Alaska. *Science* 153(3738):875-877.
10. Likens, G. E. and R. A. Ragotzkie. 1966. Rotary circulation of water in an ice-covered lake. *Verh. Internat. Verein. Limnol.* 16(1):126-133.
11. Bormann, F. H. and G. E. Likens. 1967. Nutrient cycling. *Science* 155(3761):424-429.
12. Johnson, N. M. and G. E. Likens. 1967. A steady-state thermal gradient in the sediments of a meromictic lake. *J. Geophys. Res.* 72(12):3049-3052.
13. Likens, G. E. 1967. Some chemical characteristics of meromictic lakes in North America. pp. 17-62. In: D. Jackson (ed.). Some Aspects of Meromixis. Syracuse University, Syracuse, New York.
14. Likens, G. E., F. H. Bormann, N. M. Johnson and R. S. Pierce. 1967. The calcium, magnesium, potassium, and sodium budgets for a small-forested ecosystem. *Ecology* 48(5):772-785.
15. Bormann, F. H., G. E. Likens, D. W. Fisher and R. S. Pierce. 1968. Nutrient loss accelerated by clear-cutting of a forest ecosystem. pp. 187-195. In: Symposium on Primary Productivity and Mineral Cycling in Natural Ecosystems. University of Maine Press, Orono; Also in *Science* 159(3817):882-884.
16. Fisher, D. W., A. W. Gambell, G. E. Likens and F. H. Bormann. 1968. Atmospheric contributions to water quality of streams in the Hubbard Brook Experimental Forest, New Hampshire. *Water Resour. Res.* 4(5):1115-1126.
17. Johnson, N. M., G. E. Likens, F. H. Bormann and R. S. Pierce. 1968. Rate of chemical weathering of silicate minerals in New Hampshire. *Geochim. Cosmochim. Acta* 32:531-545.

18. Kilham, P. and G. E. Likens. 1968. Penetration of light in the lakes of Grafton County, New Hampshire. NH Department of Resources and Economic Development, Concord, New Hampshire. 93 pp.
19. Likens, G. E. 1968. Limnology -- recent studies on meromictic lakes. pp. 232-233. In: McGraw-Hill Yearbook of Science and Technology. McGraw-Hill Book Co., New York.
20. Likens, G. E. and P. L. Johnson. 1968. A limnological reconnaissance in interior Alaska. U.S. Army Cold Regions Research and Engineering Laboratory, Hanover, NH, Research Report 239. 45 pp.
21. Smith, W. H., F. H. Bormann and G. E. Likens. 1968. Response of chemoautotrophic nitrifiers to forest cutting. *Soil Science* 106(6):471-473.
22. Bormann, F. H. and G. E. Likens. 1969. A watershed approach to problems of nutrient cycling in forest ecosystems. pp. 2303-2306. In: Proc. 6th World Forestry Congress, Vol. 2, Tech. Comm. III. Madrid, Spain.
23. Bormann, F. H. and G. E. Likens. 1969. The watershed-ecosystem concept and studies of nutrient cycles. pp. 49-76. In: G. VanDyne (ed.). The Ecosystem Concept in Natural Resource Management, Chap. IV. Academic Press, New York.
24. Bormann, F. H., G. E. Likens and J. S. Eaton. 1969. Biotic regulation of particulate and solution losses from a forest ecosystem. *BioScience* 19(7):600-610.
25. Collins, L. W. and G. E. Likens. 1969. The effect of altitude on the distribution of aquatic plants in some lakes of New Hampshire, USA. *Verh. Internat. Verein. Limnol.* 17:154-172.
26. Eaton, J. S., G. E. Likens and F. H. Bormann. 1969. Use of membrane filters in gravimetric analyses of particulate matter in natural waters. *Water Resour. Res.* 5(5):1151-1156.
27. Johnson, N. M., G. E. Likens, F. H. Bormann, D. W. Fisher and R. S. Pierce. 1969. A working model for the variation in stream water chemistry at the Hubbard Brook Experimental Forest, New Hampshire. *Water Resour. Res.* 5(6):1353-1363.
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29. Likens, G. E. and N. M. Johnson. 1969. Measurement and analysis of the annual heat budget for the sediments in two Wisconsin lakes. *Limnol. Oceanogr.* 14(1):115-135.
30. Likens, G. E. and P. L. Johnson. 1969. Measurements of background radiation in aquatic habitats in Alaska. pp. 319-328. In: D. J. Nelson and F. C. Evans (eds.). Proc. 2nd National Symposium on Radioecology. Ann Arbor, Michigan.
31. McConnochie, K. and G. E. Likens. 1969. Some trichoptera of the Hubbard Brook Experimental Forest in central New Hampshire. *Can. Field Nat.* 83(2):147-154.

32. Bormann, F. H. and G. E. Likens. 1970. The nutrient cycles of an ecosystem. *Sci. Amer.* 223(4):92-101.
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34. Likens, G. E. and F. H. Bormann. 1970. Chemical analyses of plant tissues from the Hubbard Brook ecosystem in New Hampshire. *Yale University School of Forestry Bulletin* 79. 25 pp.
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36. Likens, G. E. and J. S. Eaton. 1970. A polyurethane stemflow collector for trees and shrubs. *Ecology* 51(5):938-939.
37. Likens, G. E. and J. J. Gilbert. 1970. Notes on quantitative sampling of natural populations of planktonic rotifers. *Limnol. Oceanogr.* 15(5):816-820.
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18(5):734-742.

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194. Likens, G. E. and D. C. Buso. 2005. Long-term measurements of climate change in the Hubbard Brook Valley, New Hampshire, USA. *Abstract for ASLO Summer Meeting, Santiago de Compostela, Spain. June 2005. Conference Abstracts, p. 91.*
195. Lovett, G. M., G. E. Likens, D. C. Buso, C. T. Driscoll and S. W. Bailey. 2005. New perspectives on the chlorine cycle: Results from the Hubbard Brook Ecosystem Study. *Abstract and Poster for Gordon Conference on Forested Catchments. July 2005.*
196. Lowe, W., G. E. Likens, M. McPeck and D. C. Buso. 2005. Linking direct and indirect data on dispersal: Isolation by slope in a headwater stream salamander. *Abstract, 90th Annual Meeting of Ecological Society of America and IX INTECOL International Congress of Ecology, Montreal, Quebec, Canada. August 2005.*
197. Warren, D. R., E. S. Bernhardt, R. O. Hall, Jr. and G. E. Likens. 2005. Forest age, woody debris, and nutrient dynamics in headwater streams of the White Mountains, NH. *Abstract, 90th Annual Meeting of Ecological Society of America and IX INTECOL International Congress of Ecology, Montreal, Quebec, Canada. August 2005.*
198. Bade, D. L. and G. E. Likens. 2006. Sulfate dynamics in Mirror Lake: A 30-year mass balance. *Abstract Submitted to ESA Annual Meeting, Memphis, TN. August 2006.*
199. Butler, T., G. E. Likens, M. Cohen, F. Vermeylen, D. Schmeltz and R. Artz. 2006. Trends in mercury concentration and deposition at MDN sites in the eastern USA 1998-2005. *Abstract and Poster for NADP meeting, Norfolk, VA. October 2006.*
200. Judd, K. E., G. E. Likens and P. M. Groffman. 2006. Nitrate retention in watershed-ecosystems during winter months at the Hubbard Brook Experimental Forest. *Abstract for American Society of Limnology and Oceanography Meeting, Santa Fe, New Mexico. February 2007.*
201. Likens, G. E. 2006. Ecosystem Science, Environmental Change and Society: A Personal View. *Abstract for Neotropics Workshop, Valdivia, Chile. November 2007.*

202. Lowe, W. H., G. E. Likens, M. A. McPeck, D. C. Buso, B. J. Cosentino and B. T. Greene. 2006. Controls and consequences of dispersal in streams. *Abstract for American Society of Limnology and Oceanography, Victoria, Canada. June 2006.*
203. Bade, D. L., K. Bouchard and G. E. Likens. 2007. Algal co-limitation by nitrogen and phosphorus persists after 30 years in Mirror Lake (New Hampshire, USA). *Abstract for Societas Internationalis Limnologiae, Montreal, Canada. August 2007.*
204. Cosentino, B., W. Lowe and G. E. Likens. 2007. Demography and movement of the northern spring salamander, *Gyrinophilus porphyriticus*, in four New Hampshire headwater streams. *Abstract for Societas Internationalis Limnologiae, Montreal, Canada. August 2007.*
205. Judd, K. E., G. E. Likens and P.M. Groffman. 2007. Nitrate retention in watershed-ecosystems during winter months at the Hubbard Brook Experimental Forest. *Abstract for American Society of Limnology and Oceanography Meeting, Santa Fe, New Mexico. February 2007.*
206. Likens, G. E. and D. C. Buso. 2007. Long-term changes in streamwater chemistry following disturbance in the Hubbard Brook Experimental Forest, USA. *Abstract for Societas Internationalis Limnologiae, Montreal, Canada. August 2007.*
207. Warren, D. R., K. E. Judd, D. L. Bade, G. E. Likens and C. E. Kraft. 2007. Determining the influence of wood on stream nitrate dynamics in forested headwater streams. *Abstract for North American Benthological Society (NABS) 55th Annual Meeting, Columbia, SC. June 2007.*
208. Warren, D. R., K. E. Judd, D. L. Bade, G. E. Likens and C. E. Kraft. 2007. Season influences of wood on stream nitrate dynamics in forested headwater streams in the northeast U.S. *Abstract for American Geophysical Union, Fall Meeting. Smithsonian/NASA Astrophysics Data System.*
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212. Likens, G. E. 2009. Using watershed-scale, experimental manipulation to gain insights into coupled biogeochemical cycles. *Abstract for 94th Ecological Society of America Annual Meeting, Albuquerque, New Mexico. August 2009.*

213. Likens, G. E. 2009. Ecosystem science, environmental change and society. Abstract for Graduate School of Chinese Academy of Science, *Nanjing, China. 24 October 2009.*
214. Likens, G. E. 2009. Long-term, air-land-water interactions: Assessing human-accelerated environmental change. *Abstract for Einstein Lecture, Chinese Academy of Sciences, Nanjing, China. October 2009.*
215. Likens, G. E. 2009. Long-term nitrogen dynamics in a temperate forest ecosystem. *Abstract for Agouron Institute Nitrogen Symposium, Scottsdale, AR. October 2009.*
216. Likens, G. E. 2009. Water: A challenging interface between scientific understanding and policy. *SIL Abstract, SIL Symposium on Global Change and Freshwater Environments. Chinese Academy of Sciences and International Society of Limnology, Nanjing, China. October 2009.*
217. Mitchell, M. J., G. Lovett, S. Bailey, F. Beall, D. Burns, D. Buso, T. Clair, F. Courchesne, L. Duchesne, C. Eimers, I. Fernandez, D. Houle, D. Jeffries, G. E. Likens, D. Schwede, J. Shanley, K. Weathers and R. Vet. 2009. Comparisons of watershed sulfur budgets in southeast Canada and northeastern U.S.: New approaches and applications. *PowerPoint posted on website for NADP Annual Meeting and Scientific Symposium, Saratoga Springs, NY. October 2009.*
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222. Argerich, A., S. L. Johnson, S. D. Sebestyen, C. C. Rhoades, J. D. Knoepp, E. A. Greathouse, M. B. Adams, J. Campbell, W. H. McDowell, G. E. Likens and G. Ice. 2011. Trends in stream nitrate concentration and responses to disturbances in human-

- impacted basins across U.S. *Abstract North American Benthological Society (NABS), Providence, RI. May 2011.*
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224. Argerich, A., S. L. Johnson, S. D. Sebestyen, C. C. Rhoades, E. A. Greathouse, J. B. Jones, J. D. Knoepp, M. B. Adams, G. E. Likens, J. L. Campbell, W. H. McDowell, G. G. Ice, D. M. Amatya and P. M. Wohlgemuth. 2011. Temporal Trends in Stream N Concentrations and Responses to Disturbances in US Forested Reference Watersheds. *Abstract and Poster, AGU Meetings.*
225. Argerich, A., S. L. Johnson, S. D. Sebestyen, C. C. Rhoades, J. D. Knoepp, E. A. Greathouse, M. B. Adams, G. E. Likens, J. Campbell, W. H. McDowell, G. G. Ice, D. M. Amatya and P. M. Wohlgemuth. 2011. Trends in stream dissolved inorganic nitrogen in forested reference basins across U.S. *Abstract for 7th Symposium for Freshwater European Sciences, Girona, Catalonia, Spain. June 2011.*
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227. Green, M., D. C. Buso, J. Campbell, C. R. Levine and R. D. Yanai. 2011. Long-term trends in uncertainty of element fluxes at the Hubbard Brook Experimental Forest. *Abstract, 96th Annual Meeting of Ecological Society of America, Austin, TX. August 2011.*
228. Sebestyen, S. D., S. L. Johnson, C. C. Rhoades, J. Knoepp, J. Vose, A. Argerich, E. Greathouse, G. Ice, D. Amatya, J. Campbell, P. Edwards, J. Jones, G. E. Likens, W. McDowell and P. Wohlgemuth. 2011. Synthesizing stream chemistry data. *XXV IUGG General Assembly: Earth on the Edge: Science for a Sustainable Planet Melbourne, Australia. Abstract and Poster.*
229. Likens, G. E. and D. C. Buso. 2012. Determining the elusive baseline for surface water chemistry at the Hubbard Brook Experimental Forest. *Abstract for Ecological Society of America Meeting, Portland, OR. August 2012.*
230. Argerich, A., S. L. Johnson, S. D. Sebestyen, C. C. Rhoades, E. A. Greathouse, P. M. Wohlgemuth, F. N. Scatena, W. H. McDowell, G. E. Likens, J. D. Knoepp, J. B. Jones, G. G. Ice, J. L. Campbell, D. M. Amatya and M. B. Adams. 2012. Effects of forest disturbances on stream nitrate concentrations. *Abstract for Ecological Society of America Meeting, Portland, OR. August 2012.*

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232. Groffman, P., G. E. Likens, D. Buso, M. Fisk, M. Green and C. Beier. 2013. Bioenergy and resilience in the northern hardwood forest. *American Geophysical Union Poster*.
233. Likens, G. E. and D. C. Buso. 2013. Long-term chemical changes in Mirror Lake. *SIL Abstract, Budapest, Hungary. August 2013*.
234. Likens, G. E. 2014. The Hubbard Brook Ecosystem Study – Interactions among air, land, and water. *Abstract for ASLO's Alfred C. Redfield Lifetime Achievement Award Acceptance Talk. 2014 Joint Aquatic Sciences Meeting, Portland, OR*.
235. Marinos, R., E. S. Bernhardt, E. Rosi-Marshall and G. E. Likens. 2014. Algae bloom where no algae grew before: Why Hubbard Brook streams are turning green. *Abstract for 2014 Joint Aquatic Sciences Meeting, Portland, OR*.
236. Butler, T., F. Vermeylen, G.E. Likens, and C.M. Lehman. Temporal and seasonal trends in gaseous NH₃ and precipitation NH₄⁺ concentrations in several regions of the USA. Submitted to International Acid Rain Conference in Rochester, NY. October 2015.
237. ESA 100th Annual Meeting. E.S. Bernhardt, E. Rosi-Marshall, G.E. Likens, and D Buso. The forest grows but the ecosystem leaks: Calcium enrichment increases both forest biomass and nitrogen export. August 9 – August 14 2015, Baltimore, MD.
238. ESA 100th Annual Meeting. C.T. Driscoll, C.E. Johnson, H Fakhraei, J.L. Campbell, J.J. Battles, J.D. Blum, T.J. Fahey, and G.E. Likens. 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. August 9 – August 14 2015, Baltimore, MD.
239. GEO BON Open Science Conference & All Hands Meeting. Biological Field Stations: a pivotal infrastructure for global environmental research. L. Tydecks, V. Bremerich, K. Tockner, I. Jentschke, and G.E. Likens. Leipzig, Germany, July 4th to 9th, 2016.
240. Likens, G.E. and D. Buso. 2016. Long-term chemical changes in Mirror Lake, New Hampshire, USA. SIL 2016 33 Congress, Torino, Italy.
241. Marinos, R., et al. 2016. SOM Stability under Long-term Recovery from Acidic Deposition in a Northern Hardwood Forest. 2016 AGU Fall Meeting.
242. Fakhraei, H., C. Driscoll, T. Fahey, J. Campbell, L. Rustad, P. Groffman, and G. Likens. 2018. Biogeochemical sensitivity of a northeast forest ecosystem to the natural and human land disturbance. 2018 AGU Spring Meeting.
243. Likens, G. E. 2018. Insights into Water Quality from Long-Term Research and Monitoring: Lessons Learned and Implications for the Future. Plenary Address, 2018 UCOWR/NIWR Annual Water Resources Conference, 26 June 2018 (Pittsburgh, PA).

244. Likens, G. E. 2018. Long-term monitoring: Environmental Insights from NADP and Hubbard Brook pertaining to acid rain. Keynote Address, 2018 Scientific Symposium and Fall Meeting of the National Atmospheric Deposition Program (Albany, NY).
245. Galella, J., S. Kaushal, K. Wood, S. Haq, C. Morel, G. E. Likens, and M. Pace. 2019. Abstract - Freshwater salinization syndrome: Causes, consequences, and chemical cocktails. Fall National Meeting and Exposition of the American Chemical Society (ACS), August 25-29, San Diego, CA.
246. Butler, T., G. E. Likens, F. Vermeylen, R. Claybrooke, and R. Larson. 2019. Poster - Long-term monitoring of precipitation chemistry. Insights into environmental changes from Hubbard Brook and the MAP3S/AIRMoN network. NADP Meeting, November 4-8, Boulder, CO.
247. Likens, G. E., T. Butler, F. Vermeylen, R. Claybrooke, and R. Larson. 2019. Abstract - Long-term monitoring of precipitation chemistry. Insights into environmental changes from Hubbard Brook and the MAP3S/AIRMoN network. NADP Meeting, November 4-8, Boulder, CO.
248. Kaushal, S., G. E. Likens, M. Pace, S. Haq, K. L. Wood, J. G. Galella, and C. Morel. 2019. Abstract - Freshwater salinization syndrome: An emerging environmental problem. AGU Fall Meeting, December 9-13, San Francisco, CA.
249. Kaushal, S., G. E. Likens, P. Mayer, M. Pace, J. Reimer, C. Maas, J. Galella, R. Utz, S. Duan, J. Kryger, A. Yaculak, W. Boger, N. Bailey, S. Haq, K. L. Wood, B. Wessel, D. Collison, and B. Aisin. 2021. Abstract - Freshwater Salinization Syndrome: Emerging Global Problem and Risk Management. Virtual PICO presentation (vPICO) at the virtual EGU General Assembly 2021.

RESEARCH GRANTS:

1. Project Associate – ‘Radioisotope exchange studies in lakes.’ AEC AT(1101)-1133: 1962.
2. Co-investigator – ‘Physical limnology of Antarctic lakes.’ NSF GB 24093: 1962-1963.
3. Co-principal investigator – ‘Hydrologic-mineral cycle interaction in a small watershed.’ NSF GB 1144: 1963-1966; GB 4169: 1965-1967.
4. Principal Investigator – ‘Primary succession in some Alaskan lakes.’ USA CRREL - DA-AMC-27-021-64-G9: 1964-1965.
5. Principal Investigator – ‘A limnological study of some Alaskan lakes.’ USA-CRREL - DA-AMC-27-021-65-G17: 1965-1966.
6. Principal Investigator – ‘Geothermal heat flow in lakes.’ NSF GB 3666: 1965-1966.
7. Principal Investigator – ‘Hydrologic-mineral cycle interaction in small undisturbed and man-manipulated ecosystems (watersheds).’ NSF GB 6757: 1967-1969; GB 14325: 1969-1971; GB 30967X: 1971-1973; GB 40716: 1973-1974; BMS 74-20561: 1975-1976; BSR-8341136: 1981-1984; BSR-8406632: 1984-1988; BSR-8807960: 1988-1993; 1993-

- 1998.
8. Principal Investigator – ‘A study of the nutrient inputs into Cayuga Lake and Seneca Lake, New York.’ OWRR 14-31-0001-3232: 1970-1972; OWRR 14-31-0001-3832: 1972-1973.
 9. Principal Investigator – ‘Calibration of collection procedures for determination of precipitation chemistry.’ NOAA 04-4-022-31: 1974-1975; 04-5-022-24: 1975-1980.
 10. Principal Investigator – ‘Man’s influence on the deposition of toxic metals in Adirondack lake sediments.’ USDI 14-34-0001-6033: 1976.
 11. Principal Investigator – ‘Collaborative Research: Hydrologic-nutrient cycle interactions, Part Two.’ NSF DEB 76-10542; BMS 74-20561; BMS 74-20572: 1976-1978.
 12. ‘Collaborative Research: Hydrologic-nutrient cycle interaction in small undisturbed and man-manipulated ecosystems.’ NSF DEB 78-10719; DEB 79-17236: 1978-1981.
 13. Co-principal Investigator – ‘The Acid Precipitation Experiment (APEX).’ NSF ATM 77-23757/NCAR S9010: 1979-1980.
 14. Principal Investigator – ‘Stream acidification.’ International Paper Company Foundation: 1979-1980.
 15. Principal Investigator – ‘Accelerated decomposition in the forest floor of northern hardwoods following clearcutting.’ McIntire-Stennis Project 183-6559: 1979-1983.
 16. Principal Investigator – ‘Experimental field studies to evaluate the effects of acidification of a stream ecosystem.’ EPA CR807104010: 1980-1981.
 17. Co-principal Investigator – ‘Exploratory studies of acid rain on the structure, function and biogeochemistry of the northern hardwood ecosystem at Hubbard Brook.’ The Andrew W. Mellon Foundation: 1980-1993.
 18. Principal Investigator – ‘Support of the Hubbard Brook Experimental Forest as a national field research facility.’ NSF DEB-8122050: 1982-1983; BSR-8307849: 1983-1987.
 19. Co-principal Investigator – ‘Global Trends Network: The Global Precipitation Chemistry Project.’ National Acid Precipitation Assessment, Program Code, NOAA: 1979-1991.
 20. Principal Investigator – ‘Operation and research at the Ithaca MAP3S regional precipitation chemistry site.’ U.S. Department of Energy DE-FG02-85ER60292: 1984-1991.
 21. Principal Investigator -- First Cary Conference on the ‘Status and future of ecosystem science.’ NSF BSR-8500442: 1985-1986.
 22. Principal Investigator – ‘Support of ad hoc committee on acid rain: Science and policy.’ Mary Flagler Cary Charitable Trust: 1984-1985.
 23. Principal Investigator – ‘Cloud water project.’ The Andrew W. Mellon Foundation: 1985-

- 1988.
24. Co-principal Investigator -- 'Mountain cloud chemistry project.' U.S. EPA/Sciences Research Center, SUNY Albany. EPA 685/60107: 1985-1987.
 25. Co-principal Investigator – 'Evaluation and regulation of nutrient sources for Mirror Lake.' NSF BSR-8516879: 1986-1989.
 26. Principal Investigator – 'Response of tropical rain forest watersheds to harvesting.' USDA Forest Service, Rio Piedras, Puerto Rico; Cooperative Agreement 19-86-074: 1986-1990.
 27. Principal Investigator -- Second Cary Conference on 'Long-term studies in ecology: Approaches and alternatives.' NSF BSR-8702772: 1987-1988.
 28. Principal Investigator – 'Air monitoring for dry deposition.' Environmental Science & Engineering, Inc., S86-612-10: 1987-1991.
 29. Principal Investigator – 'A study of cloud water chemistry at various North American sites.' The Andrew W. Mellon Foundation: 1984.
 30. Principal Investigator – 'Long-term Ecological Research [LTER] at the Hubbard Brook Experimental Forest.' Subcontract from Cornell University, NSF OSP4432: 1988-1992; 1992-1998; 1998-2016.
 31. Co-principal Investigator – 'Rehabilitation management and public access study of The New York Botanical Garden forest.' High Winds Fund: 1985-1989.
 32. Co-principal Investigator – 'The New York Botanical Forest project.' Lila Wallace Reader's Digest Fund: 1991-1993.
 33. Co-principal Investigator - Third Cary Conference on 'Comparative analyses of ecosystems: Patterns, mechanisms, and theories.' NSF BSR-8900400: 1989.
 34. Co-principal Investigator – 'Phosphorus release from sediments in aquatic ecosystems: A cross-system study.' NSF BSR: 1990-1992.
 35. Co-principal investigator - Fourth Cary Conference on 'Human versus natural influences on ecosystems: Implications for theory and practice.' NSF: 1991-1992.
 36. Principal Investigator – 'Antarctic dry valleys: Terrestrial and limnetic ecosystems conference.' NSF Subcontract from National Aeronautics and Space Administration: 1991.
 37. Principal Investigator – 'The role of atmospheric flux of chemicals to natural ecosystems in remote regions.' NOAA Subcontract from the University of Virginia, Charlottesville, Virginia: 1991-1992.
 38. Principal Investigator – 'Long-Term monitoring of critical environmental problems.' General Reinsurance Corporation: 1991-1999.

39. Co-principal Investigator – ‘Soil microbial ecology program at the Institute of Ecosystem Studies.’ The Andrew W. Mellon Foundation: 1990-1998.
40. Co-principal Investigator – ‘Effects of watershed liming on lake productivity and trophic interactions.’ USDI Fish and Wildlife Service: 1990-1992.
41. Co-principal Investigator – ‘Acid rain research in the Adirondacks.’ Marjorie and Philip Litchfield: 1991-1992.
42. Principal Investigator – “Research in connection with CASTNET – Site 510 and NDDN Site #110, Ithaca, New York.” QST / U.S. Environmental Protection Agency. 1992-2021.
43. Principal Investigator – “Monitoring Precipitation Chemistry at Ithaca Site.” National Oceanic and Atmospheric Administration. 1992-2021.
44. Co-principal Investigator -- Fifth Cary Conference on ‘Linking species and ecosystems.’ NSF: 1993-1994.
45. Co-principal Investigator – ‘Historical development of an old-growth stand in the White Mountain National Forest.’ USDA Forest Service: 1993.
46. Co-principal Investigator – ‘Mesocosm experiments at the Oneida Lake Research Station.’ Subcontract from Cornell University: 1991-1994.
47. Principal Investigator – ‘The Transport and Fate of Trifluoroacetate (TFA) in a forested watershed at the Hubbard Brook Experimental Forest, New Hampshire: A quantitative, mass-balanced approach.’ E.I. du Pont de Nemours & Co., Inc.: 1993-1995.
48. Principal Investigator – ‘Operation of the NDDN Site #110, Ithaca, New York.’ Environmental Protection Agency/QST: 1992-2020.
49. Principal Investigator – ‘Research in connection with CASTNet—Site #510.’ Environmental Protection Agency/QST: 1993-2020.
50. Principal Investigator – ‘Research on biogeochemical processes, effects of changing air and precipitation chemistry on ecosystems, processes underlying ecosystem structure and development such as nitrogen fixation, base cation loss and weathering, ecological processes governing aquatic and terrestrial ecosystems, the effects of land use on ecosystem structure, function and development, and on other related studies which are part of the Hubbard Brook Ecosystem Study.’ The Andrew W. Mellon Foundation: 1993-1999; 2000-2007.
51. Principal Investigator – ‘Hubbard Brook Research Foundation.’ Funding – Various: 1990-1999.
52. Principal Investigator – ‘Robert S. Pierce Fund.’ Funding – Various: 1990-1999.
53. Principal Investigator – ‘LTREB: Collaborative research: Hydrologic-nutrient cycle interaction in small, undisturbed and human-manipulated ecosystems.’ National Science Foundation: 1993-1998; 1998-2016.

54. Principal Investigator – ‘Monitoring precipitation chemistry at Ithaca site.’ National Oceanic and Atmospheric Administration: 1992-2020.
55. Principal Investigator – ‘General Operating Support.’ Merrill Lynch & Co. Foundation, Inc.: 1992-1998.
56. Principal Investigator – ‘Metabolism transport of carbon and nutrients in the Hudson River Estuary.’ Hudson River Foundation. Subcontract through Cornell University: 1996-2001.
57. Principal Investigator – ‘Field research expenses for the graduate training program in human-accelerated environmental change.’ The Laurel Foundation: 1996-2007.
58. Principal Investigator – ‘Development program at the Institute of Ecosystem Studies.’ Mary Flagler Cary Charitable Trust: 1997-2003.
49. Principal Investigator – ‘Capital campaign for the construction of a new laboratory building and funding off the G.E. Hutchinson Chair.’ Mary Flagler Cary Charitable Trust: 1997-2003.
50. Co-Principal Investigator – ‘Atmospheric controls on nutrient cycles in remote, old-growth, temperate forests of Southern Chile.’ The Andrew W. Mellon Foundation: 1997-2005.
51. Principal Investigator – ‘Director’s program for Visiting Distinguished Scientists.’ Ullman: 1998-2008.
52. Principal Investigator – ‘Ecosystem function in mosaic landscapes: Boundaries, fluxes, and transformations.’ The Andrew W. Mellon Foundation: 1998-2007.
53. Principal Investigator – ‘The role of calcium supply in the structure and function of a Northern Hardwood Forest.’ NSF Subcontract through Syracuse University: 1998-2004.
54. Principal Investigator – ‘Regional scale impacts of Phases I and II of the Clean Air Act Amendments of 1990: The relationship between wet and dry depositions of H^+ , sulfur and nitrogen compounds, and changes in emissions of SO_2 and NO_x .’ Environmental Protection Agency: 1998-2004.
55. Co-Principal Investigator – ‘Feedbacks between calcium cycling and canopy tree dynamics in northern temperate forests.’ National Science Foundation, DEB-9815390: 1999-2004.
56. Principal Investigator – ‘NDDN [National Dry Deposition Network] at Hubbard Brook: Monitoring Site #109.’ Environmental Protection Agency: 1998-2019.
57. Principal Investigator – ‘FSML: Facilities improvement at the Institute of Ecosystem Studies.’ National Science Foundation, DBI-9978240: 1999-2001.
58. Principal Investigator – ‘Colder soils in a warmer world: A snow manipulation in a Northern Hardwood Forest ecosystem.’ National Science Foundation: 2000-2004.
59. Principal Investigator – ‘Monitoring Precip. Chem. VIII.’ NOAA: 2001-2020.

60. Principal Investigator – ‘Synthesis of data concerning the ecosystem functioning of the North Caspian Sea.’ Subcontract through Cornell University, Tengichevroil: 2002-2003.
61. Principal Investigator – ‘Hubbard Brook workshop on stream ecology.’ The Andrew W. Mellon Foundation: 2003-2004.
62. Principal Investigator – ‘The role of hydrologic inputs in the balance of carbon dioxide in small lakes.’ National Science Foundation/CFDA, EAR-0309257: 2004.
63. Principal Investigator – ‘Hubbard Brook National Dry Deposition Network.’ Monitoring Site #109, QST, EPA, Agreement S687D98112/68d-03-052: 1998-2019.
64. Principal Investigator – ‘OPUS: A synthesis of five decades of biogeochemical research in a northern hardwood forest ecosystem.’ National Science Foundation: 2011-2013.
65. Principal Investigator – ‘Long-Term Ecological Research at Hubbard Brook Experimental Forest.’ National Science Foundation: 2011-2017.
66. Principal Investigator – ‘LTREB Renewal at Hubbard Brook: Hydrologic-nutrient cycle interaction in small, undisturbed and man-manipulated ecosystems.’ National Science Foundation: 2013-2018.