

Knut J. Nadelhoffer

Department of Ecology & Evolutionary Biology
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Academic and Professional Appointments:

Sept. 2003- present	Professor, Dept. of Ecology and Evolutionary Biology University of Michigan, Ann Arbor, MI
June 2003- present	Director, University of Michigan Biological Station
June 2002–May 2003	Director, NSF Ecosystem Studies Program, Arlington, VA
Sept. 1984 – June 2002	Assistant through Senior Scientist, The Ecosystems Center, MBL, Woods Hole, MA <ul style="list-style-type: none"> • Senior Scientist: October 1999 – October 2002 • Associate Scientist: August 1991 – October 1999 • Assistant Scientist: June 1985 – August 1991 • Postdoctoral Fellow: September 1983 – May 1985

Other Appointments and Honors:

President	Association of Ecosystem Research Centers. http://www.ecosystemresearch.org/ November 2004 - Nov. 2006
Fulbright Scholar	Norwegian Institute for Water Research, Oslo, Norway and Norwegian Institute for Forest Research, Ås, Norway: Sept. 1996 – August 1997.
Panel Manager	Forest Rangeland and Crop Ecosystems Program, USDA National Research Initiative Competitive Grants Program, October 1991 - October 1992 (2 months)
Research Assistant,	Department of Forestry, University of Wisconsin, Madison, 1979 - August 1983
Henry Vilas Fellow	University of Wisconsin, Graduate School, 1979-1980

Professional Preparation:

Post Doctoral Institution- Marine Biological Laboratory, Woods Hole, MA, 1983-84
Ph.D., University of Wisconsin - Madison, 1983
B.S., University of Wisconsin - Madison, 1977
B.A., Carroll College, Waukesha, Wisconsin, 1972

Professional Interests and Experience:

Dr. Knute Nadelhoffer is an ecologist who investigates controls of terrestrial ecosystem structure and functioning at local, regional and global scales. He conducts research projects in temperate forests and arctic tundra where he combines field studies and modeling studies aimed at predicting ecosystems responses to climate change, air pollution and physical disturbances.

He is a Professor in the Department of Ecology and Evolutionary Biology at the University of Michigan (<http://www.eeb.lsa.umich.edu>) and Director of the University of Michigan Biological Station (www.lsa.umich.edu/umbs) in Pellston. He received his PhD from the University of Wisconsin-Madison in 1983 and was a post-doctoral research at the Ecosystems Center of Marine Biological Laboratory (Woods Hole, Massachusetts) in 1983-84. He held positions as Assistant, Associate and Senior Scientist at the Ecosystems Center through 2002. Dr. Nadelhoffer spent a year (1996-97) as a Fulbright Research Fellow at the Norwegian Institute of Water Research (Oslo) and the Norwegian Institute of Forest Research (Ås) integrating North American and European studies of nitrogen deposition affects on forests. He served as Director of the Ecosystem Studies Program at the National Science Foundation in 2002-2003 and moved to the University of Michigan in June 2003.

Professor Nadelhoffer authored or co-authored over 95 research papers and book chapters. He is President-Elect of the Association of Ecosystem Research Centers (AERC <http://www.ecosystemresearch.org/>), was a member of the Ecosystem Interagency Working Group while serving as an NSF Program Officer and was a co-author of *The Strategic Plan for the U.S. Climate Change Science Program: Ecosystems*(2003). He is a member of the National Network Design Committee of the AIBS project to plan the National Ecological Observatory Network (NEON at www.neoninc.org).

Teaching Experience:

University of Michigan-

EEB 401 *Population, Community & Ecosystem Ecology*, Winter 2004, 3 credits (16 enrolled, 2 audit)
Coordinator and co-Instructor with Professors John Vandermeer and Deborah Goldberg

EEB 405 *Biological Station Topics: Forest Ecology & Biogeochemistry*, Summer 2004, 5 credits. With B. Barnes, R. Bowden, S. Bertman

EEB 476 *Ecosystem Ecology*, 3 credits (26 enrolled). Co-Instructor (50%) with Professor George Kling.
EEB 700.

- Fall 2007, 1 credit. Jasmine Crumsey, EEB pre-candidate
- Winter 2008, 1 credit. Sarah Barbrow, EEB pre-candidate

EEB 730 *Advanced Studies*,

- winter 2004, 1 credit, Independent readings & discussion with Emily Farrer, EEB M.S. student, Current PhD student
- Fall 2005, 1 credit, Independent readings & discussion with Deborah Hudleston, EEB PhD student.
- Fall 2007, 1 credit. Sarah Barbrow, EEB pre-candidate
- Winter 2008, 1 credit. Jasmine Crumsey, EEB pre-candidate

EEB 800 *Biogeochemistry Seminar* Fall 2003, Winter 2004, 1 credit. Approx 20 PhD students, various post-doctoral researchers, M.S. students, and visiting faculty. Co-instructor with Profs George Kling (co-ordinator, EEB), Donald Zak (SNRE), Joel Blum (Geology)

Marine Biological Laboratory (Woods Hole, Mass.-

Semester in Environmental Science (SES), a course in ecosystems ecology for undergraduates. 1997-2000 (Terrestrial Ecology Course Coordinator: 1997, 1998)

Science Writing Fellowship Program of the Marine Biological Laboratory

- Led field trips and 'hands on' exercises for science journalists from national media. 1998.

- Presented seminar on global N cycled and participated in panel discussion. September 22, 2001.

University of Wisconsin-Madison-

Teaching Assistant for "Forest Biometrics/Computer Science", a short course for USDA Forest Service personnel offered by the Department of Forestry, University of Wisconsin, March 1982

Instructor for Forestry 100: "Introduction to Forestry", a University of Wisconsin-Extension independent study course, 1982 - June 1983

Graduate Student Committees:

University of Michigan-

Current Students

Yi Ciu (committee member) PhD candidate, LSA, Dept. of Ecology & Evolutionary Biology

Kristine Crous (committee member), PhD candidate, SNRE

Iryna Dronova (committee member), PhD pre-candidate, SNRE

Emily Farrer (committee member) PhD candidate, LSA, Ecology & Evolutionary Biology

John Hassett (committee member), PhD candidate, SNRE

Degrees granted or pending

Amanda Dasch, PhD 2006 LSA Dept. of Geological Sciences, (committee member),

Deborah Hudleston, M.S. 2006 LSA, Dept. of Ecology & Evolutionary Biology (co-advisor with D. Zak)

Leslie Sefcik, PhD 2007, School of Natural Resources and the Environment (cognate)

Other institutions-

Christopher Neill, Ph.D. 1992. Dept. of Forestry and Wildlife Management, University of Massachusetts, Amherst, MA. Dissertation: "Relationships Between Seasonal Flooding and Emergent Plant Production in Prairie Whitetop (*Scolochloa festucacea*) Marshes."

Rose Crabtree, Ph.D. 1992. Dept. of Evolutionary and Organismal Biology, Harvard University, Cambridge, MA. Dissertation: "Birch Regeneration in a Changing Nitrogen Environment"

Edzo Veldkamp, Ph.D. 1993. Dept. of Soil Science and Geology. Wageningen Agricultural University, Wageningen, The Netherlands. Dissertation: "Soil Organic Carbon Dynamics in Pastures Established After Deforestation in the Humid Tropics of Costa Rica."

Joseph Hendricks, Ph.D. 1994. University of New Hampshire. Dissertation: "The Effects of Nitrogen Availability on Fine Root Dynamics in Forest Ecosystems."

Anna Clemensson-Lindell, Ph.D. 1994. Swedish University of Agricultural Sciences, Uppsala, Sweden. Dissertation "Norway Spruce Fine-Root Morphology as Influenced by Nutrient Applications in Forests." Served as Dissertation Opponent (primary examiner in a public defense).

Chris Koopmans, Ph.D. 1996. Dept. of Physical Geography and Soil Science, University of Amsterdam, Amsterdam, The Netherlands. Dissertation: "The Impact of Reduced Atmospheric Nitrogen Deposition on Nitrogen Cycling in Dutch Forest Ecosystems."

Christian Johannison. Ph.D. 1996. Dept. of Forest Ecology, Swedish University of Agricultural Sciences, Umeå, Sweden. Dissertation "¹⁵N Abundances an Indicator of N Saturation of Coniferous Forests." Served as Dissertation Opponent (primary examiner in a public defense).

Inger Kappel Schmidt. Ph.D. 1997. Botanical Institute, Faculty of Science, University of Copenhagen, Denmark. Dissertation "Plant-Microbe-Soil Interactions in Arctic Dwarf Shrub Heaths."

Linda Pardo, Ph.D. 1999. Department of Environmental Engineering, Massachusetts Institute of Technology, Cambridge, MA. Dissertation “Natural Abundance of ^{15}N as a Tool for Assessing Patterns of Nitrogen Loss from Forest Ecosystems.”

Jacqueline Aitkenhead, Ph.D. 2000. Department of Natural Resources, University of New Hampshire. Durham, NH. Dissertation “Sources, Production and Exports of Dissolved Organic Carbon and Nitrogen”

Jennifer Doles, M.S. 2000. University of Northern Colorado.

Wendy Marie Loya, Ph.D. 2001, Division of Biology Kansas State University. Dissertation “Carbon Cycling and Storage in Arctic Tundra Soils”

Service

University of Michigan

- Promotion and Merit *ad hoc* committee member for review of
 - Dr. Mercedes Pascual (LSA-EEB tenure review), November 2003
 - Dr. David Ellsworth (SNRE, tenure review), February 2004
- EEB Executive Committee, Fall 2004- Summer 2006
- EEB Promotions & Merit Committee, Fall 2004- Spring 2005
- LSA Natural and Physical Sciences Divisional Evaluation Committee, Fall 2004-present
- Provost’s Advisory Committee on the School of Natural Resource & the Environment (SNRE), member 2004-2005

Regional

- Great Lakes Observing System (Great Lakes Commission), Steering Committee member, 2004-present
- Roundtable on Scientific Integrity, sponsored by the Union of Concerned Scientists. Panel Moderator, University of Michigan, March 21, 2005

National

- American Institute for Biological Sciences (AIBS), Public Policy Review Committee Member, 2006
- Association of Ecosystem Research Centers (AERC)-
 - Member at Large- 2003-2004
 - President Elect, Nov 2004-Nov 2005
 - President, Nov 2005 – Nov 2006
 - Past President, Nov 2006-Nov 2008
- Ecosystems Interagency Working Group
 - NSF Representative, June 2002-June 2003
 - Non-agency participant, June 2003 - 2006
- Environmental Law and Policy Center (www.elpc.org), Science Advisory Committee, Member. 2007-present
- Smithsonian Institution, Member, Science Advisory Team for planned exhibit at the National Museum of Natural History: “**SOILS: Worlds Underfoot**” (proposed for 2008)

- MacArthur Agro-ecology Research Center, Lake Placid Florida
 - Member, Scientific Advisory Committee, 2007 - present
- NEON design and development:
 - Member, NEON Design Consortium, 2004- 2006
 - Co-Chair Biogeochemical Cycles Subcommittee (NEON Science and Human Dimensions Committee), 2004 - 2006
 - Participant in AIBS (IBRCS) NEON Coordination and Implementation Conferences, September and November 2003. Contributor to- *IBRCS White Paper: A Plan for Developing A Plan for Developing and Governing the and Governing the National Ecological National Ecological Observatory Network* (NEON).
- NSF Ecosystem Studies Program
 - Program Director June 2002-May 2003
 - Panelist 1998-2001
- NSF Research Coordination Network Review Panelist, October 2004

International

- Member, Oversight Board of the North American Nitrogen Center (NANC). The NANC is one of five globally distributed centers of the International Nitrogen Initiative (<http://www.initrogen.org/>) sponsored by the International Council of Science (ICSU) through the Scientific Committee on Problems of the Environment (SCOPE) and the International Geosphere-Biosphere Program (IGBP).
- Co-Organizer (with Drs. Peter Högberg of Umeå, Sweden, Terry Callaghan, Abisko Research Station, Sweden & Sarah E. Hobbie, U. Minnesota) of a GCTE (Global Change in Terrestrial Ecosystems) conference entitled: “How Nutrient Cycles Constrain Carbon Balances in Boreal Forests and Arctic Tundra”. Abisko, Sweden. June 15-20, 1999.
- Member of SCOPE working group project entitled “Nitrogen Transport and Transformations: A Regional and Global Analysis.” Participant in related workshops at the National Center for Ecological Analysis and Synthesis and co-author of synthesis paper by Goodale et al 2002. Forest nitrogen sinks in large eastern U.S. watersheds.... *Biogeochemistry* 57/58:239–266.

Published Journal Articles:

1. Nadelhoffer, K. J., and J. D. Aber. 1982. Ecosystems and soil nitrogen: A critical interaction identified. *Restoration and Management Notes* 1(2):9-10.
2. Nadelhoffer, K. J., J. D. Aber and J. M. Melillo. 1983. Leaf-litter production and soil organic matter dynamics along a nitrogen availability gradient in southern Wisconsin (USA). *Canadian Journal of Forest Research* 13:12-21.
3. Nadelhoffer, K. J., J. D. Aber and J. M. Melillo. 1984. Seasonal patterns of ammonium and nitrate uptake in nine temperate forest ecosystems. *Plant and Soil* 80:321-335.
4. Aber, J. D., J. M. Melillo, K. J. Nadelhoffer, C. McLaugherty and J. Pastor. 1985. Fine root turnover in forest ecosystems in relation to quantity and form of nitrogen availability. A comparison of two methods. *Oecologia* 66(3):317-321.
5. Nadelhoffer, K. J., J. D. Aber and J. M. Melillo. 1985. Fine root production in relation to net primary production along a nitrogen availability gradient in temperate forests: A new hypothesis. *Ecology* 66:1377-1390.

6. Binkley, D., J. D. Aber, J. Pastor and K. J. Nadelhoffer. 1986. Nitrogen availability patterns in some Wisconsin forests: A comparison of resin bags and on site incubations. *Biology and Fertility of Soils* 2:77-82.
7. Nadelhoffer, K. J., and B. Fry. 1988. Controls on natural nitrogen-15 and carbon-13 abundances in forest soil organic matter. *Soil Science Society of America Journal* 52(5):1633-1640.
8. Aber, J. D., K. J. Nadelhoffer, P. A. Steudler and J. M. Melillo. 1989. Nitrogen saturation in forest ecosystems. *BioScience* 39:378-386.
9. Melillo, J. M., J. D. Aber, A. E. Linkins, A. R. Turner, B. Fry and K. J. Nadelhoffer. 1989. Carbon and nitrogen dynamics along the decay continuum: Plant litter to soil organic matter. *Plant and Soil* 115:189-198.
10. Raich, J. W., and K. J. Nadelhoffer. 1989. Belowground carbon allocation in forest ecosystems: Global trends. *Ecology* 70:1346-1354.
11. Nadelhoffer, K. J. 1990. A microlysimeter for measuring N mineralization and microbial respiration in aerobic soil incubations. *Soil Science Society of America Journal* 54:411-415.
12. Nadelhoffer, K. J., A. E. Giblin, G. Shaver, and J. Laundre. 1991. Effects of temperature and organic matter quality on C, N and P mineralization in soils from arctic ecosystems. *Ecology* 72:242-253.
13. Aber, J. D., J. M. Melillo, K. J. Nadelhoffer, J. Pastor and R. Boone. 1991. Factors controlling nitrogen cycling and nitrogen saturation in northern temperate forest ecosystems. *Ecological Applications* 1:303-315.
14. Giblin, A. E., K. J. Nadelhoffer, G. R. Shaver, J. Laundre and A. McKerrow. 1991. Biogeochemical diversity along a topographic gradient in a tundra landscape. *Ecological Monographs* 61:415-436.
15. McLellan, T., J. D. Aber, J. Melillo and K. J. Nadelhoffer. 1991. Determination of nitrogen, lignin and cellulose content of decomposing leaf litter by near infrared reflectance spectroscopy. *Canadian Journal of Forest Research* 21:1684-1688.
16. McLellan, T., M. E. Martin, J. D. Aber, J. M. Melillo, K. J. Nadelhoffer, B. Dewey and J. Pastor. 1991. Comparison of wet chemical and near infrared reflectance measurements of carbon fraction chemistry and nitrogen content of forest foliage. *Canadian Journal of Forest Research* 21:1689-1693.
17. Rastetter, E. B., M. G. Ryan, G. R. Shaver, J. M. Melillo, K. J. Nadelhoffer, J. E. Hobbie and J. D. Aber. 1991. A general biogeochemical model describing the responses of the C and N cycles in terrestrial ecosystems to changes in CO₂, climate, and N deposition. *Tree Physiology* 9:101-126.
18. Nadelhoffer, K. J., and J. W. Raich. 1992. Fine root production estimates and belowground carbon allocation in forest ecosystems. *Ecology* 73:1139-1147.
19. Shaver, G. R., W. D. Billings, F. S. Chapin, A. E. Giblin, K. J. Nadelhoffer, W. C. Oechel and E. B. Rastetter. 1992. Global change and the carbon balance of arctic ecosystems. *BioScience* 42:433-441.
20. Bowden, R. D., K. J. Nadelhoffer, R. D. Boone, J. M. Melillo and J. B. Garrison. 1993. Contributions of aboveground litter, belowground litter, and root respiration to total soil respiration in a temperate mixed hardwood forest. *Canadian Journal of Forest Research* 23:1402-1407.
21. Downs, M. R., K. J. Nadelhoffer, J. M. Melillo and J. D. Aber. 1993. Foliar and fine root nitrate reductase activity in seedlings of four forest tree species in relation to nitrogen availability. *Trees: Structure and Function* 7:233-236.
22. Hendricks, J. J., K. J. Nadelhoffer and J. D. Aber. 1993. The role of fine roots in energy and nutrient cycling. *Trends in Ecology and Evolution* 8:174-178.
23. Kahl, J. S., S. A. Norton, I. J. Fernandez, K. J. Nadelhoffer, C. T. Driscoll and J. D. Aber. 1993. Experimental inducement of nitrogen saturation at the watershed scale. *Environmental Science and Technology* 23:565-568.

24. Giblin, A. E., J. A. Laundre, K. J. Nadelhoffer and G. R. Shaver. 1994. Measuring nutrient availability in arctic soils using ion exchange resins: A field test. *Soil Science Society of America Journal* 58:1154-1162.
25. Mitchell, M. J., M. B. David, I. J. Fernandez, R. D. Fuller, K. J. Nadelhoffer, L. E. Rustad and A. C. Stam. 1994. Response of buried mineral soil bags to experimental acidification of a forest ecosystem. *Soil Science Society of America Journal* 58:556-563.
26. Nadelhoffer, K. J., M. Downs, B. Fry, J. D. Aber, A. H. Magill and J. M. Melillo. 1995. The fate of ¹⁵N-labelled nitrate additions to a northern hardwood forest in eastern Maine, USA. *Oecologia* 103:292-301.
27. Aber, J. D., A. Magill, S. G. McNulty, R. D. Boone, K. J. Nadelhoffer, M. Downs and R. Hallett. 1995. Forest biogeochemistry and primary production altered by nitrogen saturation. *Water, Air and Soil Pollution* 85:1665-1670.
28. Chapin, F. S. III, G. R. Shaver, A. E. Giblin, K. G. Nadelhoffer and J. A. Laundre. 1995. Responses of Arctic tundra to experimental and observed changes in climate. *Ecology* 76:694-711.
29. Nadelhoffer, K., G. Shaver, B. Fry, A. Giblin, L. Johnson and R. McKane. 1996. ¹⁵N natural abundances and N use by tundra plants. *Oecologia* 107:386-394.
30. Downs, M. R., K. J. Nadelhoffer, J. M. Melillo and J. D. Aber. 1996. Immobilization of a ¹⁵N labelled nitrate addition by decomposing forest litter. *Oecologia* 105:141-150.
31. Johnson, L. C., G. R. Shaver, A. Giblin, K. Nadelhoffer, E. Rastetter, J. Laundre and G. Murray. 1996. Effects of enhanced drainage and elevated temperature on carbon balance of tussock tundra microcosms. *Oecologia* 108:737-748.
32. Magill, A. H., M. R. Downs, K. J. Nadelhoffer, R. A. Hallett and J. D. Aber. 1996. Forest ecosystem response to four years of chronic nitrate and sulfate additions at Bear Brooks Watershed, Maine, USA. *Forest Ecology and Management* 84:29-37.
33. Rustad, L. E., I. J. Fernandez, M. B. David, M. J. Mitchell, K. J. Nadelhoffer and R. B. Fuller. 1996. Experimental soil acidification and recovery at the Bear Brook Watershed in Maine (BBWM). *Soil Science Society of America Journal*, 60:1933-1943.
34. Shaver, G. R., J. A. Laundre, A. E. Giblin and K. J. Nadelhoffer. 1996. Changes in vegetation biomass, primary production, and species composition along a riverside toposequence in arctic Alaska. *Arctic and Alpine Research* 28:363-379.
35. Williams, M., E. B. Rastetter, D. N. Fernandes, M. L. Goulden, S. C. Wofsy, G. R. Shaver, J. M. Melillo, J. W. Munger, S.-M. Fan and K. J. Nadelhoffer. 1996. Modelling the soil-plant-atmosphere continuum in a *Quercus-Acer* stand at Harvard Forest: the regulation of stomatal conductance by light, nitrogen and soil/plant hydraulic properties. *Plant, Cell and Environment* 19:911-927.
36. Hendricks, J. J., K. J. Nadelhoffer and J. D. Aber. 1997. A ¹⁵N tracer technique for assessing fine root production and turnover. *Oecologia* 112:300-304.
37. Jordan, M. J., K. J. Nadelhoffer and B. Fry. 1997. Nitrogen cycling in forest and grass ecosystems irrigated with treated wastewater enriched in ¹⁵N. *Ecological Applications* 7:864-881.
38. McKane, R. B., E. B. Rastetter, G. R. Shaver, K. J. Nadelhoffer, A. E. Giblin, J. A. Laundre and F. S. Chapin III. 1997. Climatic effects on tundra carbon storage inferred from experimental data and a model. *Ecology*, 78:1170-1187.
39. McKane, R. B., E. B. Rastetter, G. R. Shaver, K. J. Nadelhoffer, A. E. Giblin, J. A. Laundre and F. S. Chapin III. 1997. Reconstruction and analysis of historical changes in carbon storage in arctic tundra. *Ecology* 78:1188-1198.
40. Nadelhoffer, K. J., J. W. Raich and J. D. Aber. 1998. Carbon budgets and forest ecosystems: using mass balances to assess fine root production estimates: Comment. *Ecology* 79:1822-1825.

41. Aber, J. D., W. H. McDowell, K. J. Nadelhoffer, A. Magill, G. Bernston, M. Kamakea, S. G. McNulty, W. Currie, L. Rustad and I. Fernandez. 1998. Nitrogen saturation in temperate forest ecosystems: Hypotheses revisited. *BioScience* 48:921-934.
42. Boone, R. D., K. J. Nadelhoffer, J. D. Canary and J. P. Kaye. 1998. Roots determine the temperature sensitivity of soil respiration. *Nature* 396:571-572.
43. Shaver, G. R., L. C. Johnson, D. H. Cades, G. Murray, J. A. Laundre, E. B. Rastetter, K. J. Nadelhoffer and A. E. Giblin. 1998. Biomass and CO₂ flux in wet sedge tundras: Responses to nutrients, temperature, and light. *Ecological Monographs* 68:75-97.
44. Nadelhoffer, K. J., M. R. Downs, and B. Fry. 1999. Sinks for N additions to an oak forest and a red pine plantation. *Ecological Applications* 9:72-86.
45. Nadelhoffer, K. J., B. A. Emmett, P. Gundersen, O. J. Kjønaas, C. J. Koopmans, P. Schleppei, A. Tietema, and R. F. Wright. 1999. Nitrogen deposition makes a minor contribution to carbon sequestration in temperate forests. *Nature* 398:145-148.
46. Nadelhoffer, K. J., M. R. Downs, B. Fry, A. Magill and J. D. Aber. 1999. Controls on N retention and exports in a fertilized watershed. *Environmental Monitoring and Assessment* 55:187-210.
47. Nadelhoffer, K. J., B. A. Emmett, P. Gundersen, C. J. Koopmans, P. Schleppei, A. Tietema, and R. F. Wright. 1999. Nitrogen deposition and carbon sequestration: *Reply to D.S. Jenkinson, K. Goulding and D.S. Powlson, and to H. Seivering.* *Nature* 400, 630.
48. Currie, W. S., and K. J. Nadelhoffer. 1999. Dynamic redistribution of isotopically labelled cohorts of nitrogen inputs in two temperate forests. *Ecosystems* 2:4-18.
49. Currie, W. S., K. J. Nadelhoffer, and J. D. Aber. 1999. Soil detrital processes controlling the movement of ¹⁵N tracers to forest vegetation. *Ecological Applications* 9:87-102.
50. Downs, M. R., R. H. Michener, B. Fry and K. J. Nadelhoffer. 1999. Routine measurement of dissolved inorganic ¹⁵N in streamwater. *Environmental Monitoring and Assessment* 55:211-220.
51. Fernandez, I. J., L. E. Rustad, M. B. David, K. J. Nadelhoffer and M. J. Mitchell. 1999. Mineral soil and solution responses to experimental N and S enrichment at the Bear Brook Watershed in Maine (BBWM). *Environmental Monitoring and Assessment* 55:165-185.
52. Rainey, S. M., K. J. Nadelhoffer, W. L. Silver and M. R. Downs. 1999. Effects of chronic nitrogen additions on understory species abundance and nutrient content in a red pine plantation. *Ecological Applications* 9:949-957.
53. Rastetter, E. B., L. Gough, A. E. Hartley, D. A. Herbert, K. J. Nadelhoffer and M. Williams. 1999. A revised assessment of species redundancy and ecosystem reliability. *Conservation Biology* 13:440-443.
54. Nadelhoffer, K. J. 2000. The potential effects of nitrogen deposition on fine root production in forest ecosystems. *New Phytologist* 137:131-139.
55. Hendricks, J. J., J. D. Aber, K. J. Nadelhoffer and R. D. Hallett. 2000. Nitrogen controls on fine root substrate quality in temperate forest ecosystems. *Ecosystems* 3:57-69.
56. Johnson, L., G. R. Shaver, D. Cades, E. Rastetter, K. J. Nadelhoffer, A. E. Giblin, J. Laundre, and A. Stanley. 2000. Carbon-nutrient interactions control CO₂ exchange in Alaskan wet sedge ecosystems. *Ecology* 81:453-469.
57. Magill, A. H., J. D. Aber, G. M. Berntson, W. H. McDowell, K. J. Nadelhoffer, J. M. Melillo, and P. Steudler. 2000. Long-term additions and nitrogen saturation in two temperate forests. *Ecosystems*, 3:238-253.
58. Nadelhoffer K. J., L. Johnson, J. Laundre, A. E. Giblin, and G. R. Shaver. 2002. Fine root production and nutrient use in wet and moist arctic tundras as influenced by chronic fertilization. *Plant and Soil*, 242(1): 107-113.

59. Currie, W. S. and K. J. Nadelhoffer. 2002. The imprint of land use history: Patterns of Carbon and Nitrogen in downed woody debris at the Harvard Forest. *Ecosystems* 5:446-460.
60. Currie, W. S., K. J. Nadelhoffer, and B. Colman. 2002. Long-term movement of ^{15}N tracers into fine woody debris under chronically elevated N inputs. *Plant and Soil* 238:313-323.
61. Goodale, C. L., K. Lajtha, K. J. Nadelhoffer, E. W. Boyer, and N. A. Jaworski. 2002. Forest nitrogen sinks in large eastern U.S. watersheds: inventory and modeled estimates. *Biogeochemistry* 57/58:239-266.
62. Hobbie, S. E., K. J. Nadelhoffer, and P. Högberg. 2002. A synthesis: the role of nutrients as constraints on carbon balances in boreal and arctic regions. *Plant and Soil* 242: 163-170.
63. McKane, R. B., L. C. Johnson, G. R. Shaver, K. J. Nadelhoffer, E. B. Rastetter, B. Fry, A. E. Giblin, K. Kielland, B. L. Kwiatkowski, J. A. Laundre, and G. Murray. 2002. Resource-based niches provide a basis for plant species diversity & dominance in arctic tundra. *Nature*, 415:68-71.
64. Mayer, B., E. W. Boyer, C. L. Goodale, N. A. Jaworski, N. Van Breemen, R. W. Howarth, S. P. Seitzinger, G. Billen, K. Lajtha, K. J. Nadelhoffer, D. Van Dam, L. J. Hetling, M. Nosal, K. Paustian. 2002. Sources of nitrate in rivers draining sixteen watersheds in the northeastern U. S.: Isotopic constraints. *Biogeochemistry* 57/58:171-197.
65. Van Breemen, N., E. W. Boyer, C. L. Goodale, N. A. Jaworski, K. Paustian, S. P. Seitzinger, K. Lajtha, B. Mayer, D. Van Dam, R. W. Howarth, K. J. Nadelhoffer, M. Eve, and G. Billen. 2002. Where did all the nitrogen go? Fate of nitrogen inputs to large watersheds in the northeastern U.S.A. *Biogeochemistry* 57/58:267-293.
66. Loya, W.M., L. Johnson, G.W. Kling, J.Y. King, W.S. Reeburgh, and K. Nadelhoffer. 2002. Pulse-labeling studies of carbon cycling in arctic tundra ecosystems: the contribution of photosynthates to soil organic matter. *Global Biogeochemical Cycles*, 16:4 (Art. No. 1101 OCT-NOV).
67. King, J.Y., W. S. Reeburgh, K. K. Thieler, G. W. Kling, W. M. Loya, L. C. Johnson, and K. J. Nadelhoffer. 2002. Pulse-labeling studies of carbon cycling in Arctic tundra ecosystems: the contribution of photosynthates to methane emission. *Global Biogeochemical Cycles*, 16:4 (Art. No. 1062 OCT-NOV).
68. Koba, K., M. Hirobe, L. Koyama, A. Kohzu, N. Tokuchi, K. J. Nadelhoffer, E. Wada, and H. Takeda. 2003. Natural ^{15}N abundances of plants and soil in a temperate coniferous forest. *Ecosystems* 6:457-469.
69. Loya, W. M., L. C. Johnson, K. J. Nadelhoffer. 2004 Seasonal dynamics of leaf- and root-derived C in arctic tundra mesocosms. *Soil Biology and Biochemistry*, 36:655-666
70. Nadelhoffer, K.J., B.P. Colman, W.S. Currie, A. H. Magill, and J.D. Aber. 2004. Decadal scale fates of ^{15}N tracers added to oak and pine stands under ambient and elevated N inputs at the Harvard Forest (USA). *Forest Ecology and Management*, 196(1): 89-107.
71. Currie, W.S., K.J. Nadelhoffer, and J.D. Aber. 2004. Redistributions of ^{15}N highlight turnover and replenishment of mineral soil organic N as a long-term control on forest C balance. *Forest Ecology and Management*, 96(1): 109-127.
72. Magill, A.H., J.D. Aber, W. S. Currie, K.J. Nadelhoffer, M.E. Martin, W.H. McDowell, J.M. Melillo, P. Steudler. 2004. Ecosystem response to 15 years of chronic nitrogen additions at the Harvard Forest LTER, Massachusetts, USA. *Forest Ecology and Management* 196(1): 7-28
73. Micks, P., M. R. Downs, A.H. Magill, K.J. Nadelhoffer, and J.D. Aber. 2004. Decomposing litter as a sink for ^{15}N -enriched additions to an oak forest and a red pine plantation. *Forest Ecology and Management*, 196 (1): 71-87.
74. Moore, J.C., E.L. Berlow, D.C. Coleman, P.C. de Ruiter, Q. Dong, A. Hastings, N.C. Johnson, K.S. McCann, K. Melville, P.J. Morin, K.J. Nadelhoffer, A.D. Rosemond, D.M. Post, J.L. Sabo, K.M.

- Scow, M.J. Vanni, and D.H. Wall. 2004. Detritus, Trophic Dynamics, and Biodiversity. *Ecology Letters*, 7:584-600.
75. Johnston, C.A., P. Groffman, D.D. Breshears, Z.G. Cardon, W. Currie, W. Emanuel, J. Gaudinski, R. Jackson, K. Lajtha, K. Nadelhoffer, D. Nelson Jr., W.M. Post, G. Retallack, and L. Wielopolski. 2004. Carbon cycling in soil. *Frontiers in Ecology and the Environment*, 2(10): 522–528
76. Pardo, L.N., P. Templer, C.L. Goodale, S. Duke, P. Groffman, M.B. Adams, P. Boeckx, J. Boggs, J. Campbell, J. Compton, B. Emmett, P. Gundersen, J. Kjønaas, G. Lovett, M. Mack, A. Magill, M.J. Mitchell, M. Mbila, G. McGee, S. McNulty, K. Nadelhoffer, B. Colman, S. Ollinger, D. Ross, H. Rueth, L. Rustad, P. Schaberg, S. Schiff, P. Schleppei, J. Spoelstra, W. Wessel. 2006. Regional Assessment of N saturation using foliar and root $\delta^{15}\text{N}$. *Biogeochemistry*, 80(2): 143-171.
77. Shaver, G.R., A.E. Giblin, K.J. Nadelhoffer, J.E. Laundre, K. Thieler, M. Downs, E.B. Rastetter. 2006. Carbon turnover in Alaskan tundra soils: effects of organic matter quality, temperature, moisture, and fertilizer. *Journal of Ecology*, 94:740 –753.
78. Sullivan, P.F, M. Sommerkorn, H.M. Rueth, K.J. Nadelhoffer, G.R. Shaver, J.M. Welker. 2007. Climate and species affect fine root production with long-term fertilization in acidic tussock tundra near Toolik Lake, Alaska, *Oecologia*, DOI 10.1007/s00442-007-0753-8.
79. Peters, D.P.C., P.M. Groffman, K.J. Nadelhoffer, N.B. Grimm, S.L. Collins, W.K. Michener, and M.A. Huston. 2008. Living in an increasingly connected world: a framework for continental-scale environmental science. *Frontiers in Ecology and the Environment*, *accepted*.
80. Grimm, N.B., D. Foster, P.M. Groffman, J.M. Grove, C.S. Hopkinson, K.J. Nadelhoffer, D.E. Pataki, D. Peters. *In revision*. Land Change: Ecosystem responses to urbanization and pollution across climatic and societal gradients. *Frontiers in Ecology and the Environment*.

Published Book Chapters:

1. Gildea, M. P., B. Moore, C. J. Vorosmarty, B. Bergquist, J. M. Melillo, K. J. Nadelhoffer and B. J. Peterson. 1986. A global model of nutrient cycling: I. Introduction, model structure and terrestrial mobilization of nutrients. Chapter 1 *in*: D. Correll (ed.), *Watershed Research Perspectives*. Smithsonian Press, Washington, DC, pp. 1-31.
2. Binkley, D., R. Powers, J. Pastor and K. J. Nadelhoffer. 1990. Protocols for testing measures of nitrogen availability in forest soils. *In*: W. J. Dyck and C. A. Mees (eds.), *Impact of Intensive Harvesting on Forest Site Productivity*. Proceedings, IEA/BE A3 Workshop, South Island, New Zealand, March 1989. IEA/BE T6/A6 Report No. 2. Forest Research Institute, Rotorua, New Zealand, FRI Bulletin No. 159, pp. 111-125.
3. Shaver, G. R., K. J. Nadelhoffer and A. E. Giblin. 1990. Climatic change, nutrient cycling, and primary production in the Arctic landscape. *In*: *Arctic Research: Advances and Prospects (Part 2)*. Proceedings of the Conference of Arctic and Nordic Countries on Coordination of Research in the Arctic, Leningrad, USSR. Nauka, Moscow, pp. 134-135.
4. Nadelhoffer, K. J., A. E. Giblin, G. R. Shaver and A. E. Linkins. 1991. Microbial processes and plant nutrient availability in arctic soils. Chapter 13 *in*: F. S. Chapin et al. (eds.), *Physiological Ecology of Arctic Plants: Implications for Climate Change*. Academic Press, New York, pp. 281-300.

5. Shaver, G. R., K. J. Nadelhoffer and A. E. Giblin. 1991. Biogeochemical diversity and element transport in a heterogeneous landscape, The North Slope of Alaska. Chapter 5 *in*: M. Turner and R. Gardner (eds.), *Quantitative Methods in Landscape Ecology*. Springer-Verlag, New York, pp. 105-125.
6. Nadelhoffer, K. J., J. D. Aber, M. Downs, B. Fry and J. M. Melillo. 1993. Biological sinks for nitrogen additions to a forested catchment. *In*: L. Rasmussen, T. Brydges and P. Mathy (eds.), *Experimental Manipulations of Biota and Biogeochemical Cycling in Ecosystems: Approach, Methodologies, Findings*. Ecosystems Research Report No. 4 of the Commission of European Communities. ECSC-EEC-EAEC, Brussels-Luxembourg, pp. 64-70.
7. Nadelhoffer, K. J., and B. Fry. 1994. Nitrogen isotope studies in forest ecosystems. Chapter 2 *in*: K. Lajtha and R. Michener (eds.), *Stable Isotopes in Ecology*, Blackwell Scientific Publications, Oxford, UK, pp. 22-44.
8. Nadelhoffer, K. J., A. F. Bouwman, M. Delaney, J. M. Melillo, W. Schäfer, M. C. Scholes, R. J. Scholes, C. Sonntag, W. Sunda, E. Veldkamp and E. B. Welch. 1995. Effects of climate change and human perturbations on interactions between non-living organic matter and nutrients. Chapter 14 *in*: Zepp, R. G. and C. H. Sonntag (eds.), *Report of the Dahlem Workshop on the Role of Nonliving Organic Matter in the Earth's Carbon Cycle*. John Wiley & Sons, pp. 227-256.
9. Fry, B., D. E. Jones, G. W. Kling, R. B. McKane, K. J. Nadelhoffer and B. J. Peterson. 1995. Adding ¹⁵N tracers to ecosystem experiments. Chapter 4 *in*: E. Wada, T. Yoneyama, M. Minagawa, T. Ando and B. Fry (eds.), *Stable Isotopes in the Biosphere*. Kyoto University Press, Kyoto, Japan.
10. Schulze, E. -D., F. A. Bazzaz, K. J. Nadelhoffer, T. Koike and S. Takatsuki. 1996. Biodiversity and ecosystem function of temperate deciduous broad-leaved forests. Chapter 4 *in*: H. A. Mooney, J. H. Cushman, E. Medina, O. E. Sala, and E. -D. Schulze (eds.), *Functional Roles of Biodiversity: A Global Perspective*, John Wiley and Sons, Chichester, pp. 72-98.
11. Shaver, G. R., A. E. Giblin, K. J. Nadelhoffer and E. B. Rastetter. 1996. Plant functional types and ecosystem change in arctic tundras. Chapter 8 *in*: T. Smith, H. Shugart and I. Woodward (eds.), *Plant Functional Types*, Cambridge University Press, Cambridge, UK.
12. Nadelhoffer, K., G. R. Shaver, A. Giblin, and E. B. Rastetter. 1997. Potential impacts of climate change on nutrient cycling, decomposition, and productivity in arctic ecosystems. Pages 349-364 *in*: W. C. Oechel, T. Callaghan, T. Gilmanov, J. I. Holten, B. Maxwell, U. Molau and B. Sveinbjörnsson (eds.), *Global Change and Arctic Terrestrial Ecosystems*. Springer, New York.
13. Rastetter, E. B., R. B. McKane, G. R. Shaver, K. J. Nadelhoffer and A. E. Giblin. 1997. Analysis of CO₂, temperature, and moisture effects on carbon storage in Alaskan arctic tundra using a general ecosystem model, pp.437-451. *in*: W. C. Oechel, T. Callaghan, T. Gilmanov, J. I. Holten, B. Maxwell, U. Molau and B. Sveinbjörnsson (eds.), *Global Change and Arctic Terrestrial Ecosystems*. Springer, New York.
14. Shaver, G. R., E. B. Rastetter, K. J. Nadelhoffer and A. E. Giblin. 1997. Carbon-nutrient interactions as constraints on recovery of arctic ecosystems from disturbance. Pages 553-562 *in*: R. M. M. Crawford, (ed.) *Disturbance and Recovery of Arctic Lands: An Ecological Perspective*. Kluwer Academic Publishers, Dordrecht, The Netherlands.
15. Harmon, M. E., K. J. Nadelhoffer and J. M. Blair. 1999. Measuring decomposition, nutrient turnover, and stores in plant litter. Chapter 11 *in*: G. P. Robertson, C. S. Bledsoe, D. C. Coleman, and P. Sollins (eds.), *Standard Soil Methods for Long Term Ecological Research*. Oxford University Press, New York, pp. 202-240.
16. Robertson, G. P., D. Wedin, P. M. Groffman, J. M. Blair, E. Holland, K. J. Nadelhoffer and D. Harris. 1999. Soil carbon and nitrogen availability: nitrogen mineralization, nitrification, and soil respiration potentials. Chapter 13 *in*: G. P. Robertson, C. S. Bledsoe, D. C. Coleman, and P. Sollins (eds.),

- Standard Soil Methods for Long Term Ecological Research. Oxford University Press, New York, pp. 258-271.
17. Nadelhoffer, K. J., R. D. Bowden, R. D. Boone, and K. Lajtha. 2000. Controls on forest soil organic matter development and dynamics: Chronic litter manipulation as a potential international LTER activity. Pages 3-9 *in*: K. Lajtha and K. Vanderbilt (eds.), Cooperation in Long Term Ecological Research in Central and Eastern Europe: Proceedings of the ILTER Regional Workshop, 22-25 June, Budapest, Hungary. Oregon State University, Corvallis, Oregon.
 18. Nadelhoffer, K. J. 2001. The impacts of nitrogen deposition on forest ecosystems. Chapter 12 *in*: R. F. Follett and J. L. Hatfield (eds.), Nitrogen in the Environment: Sources, Problems, and Management. Elsevier Science, Amsterdam, pp. 311-331.
 19. Nadelhoffer, K. J., R.D. Boone, R. D. Bowden, J. D. Canary, J. Kaye, P. Micks, A. Ricca, J. A. Aitkenhead, K. Lajtha, and W.H. McDowell. 2004. The DIRT experiment: litter and root influences on forest soil organic matter stocks and function. Chapter 15 *in*: D. Foster and J. Aber (eds.), Forests in Time: The Environmental Consequences of 1000 Years of Change in New England. Yale University Press, pp. 300-315.
 20. Aber, J., A. Magill, K. Nadelhoffer, R. Boone, J. Melillo, P. Steudler, J. Hendricks, R. Bowden, W. Currie, and W. McDowell. 2004. Exploring the process of nitrogen saturation. Chapter 12 *in*: D. Foster and J. Aber (eds.), Forests in Time: The Environmental Consequences of 1000 Years of Change in New England. Yale University Press, pp. 259-279.
 21. Melillo, J., P. Steudler, J. Aber, K. Newkirk, H. Lux, F. Bowles, C. Catricala, A Magill, T. Ahrens, S. Morriseau, E. Burrows, and K. Nadelhoffer. 2004. Soil warming: a major consequence of global climate change. Chapter 13 *in*: D. Foster and J. Aber (eds.), Forests in Time: The Environmental Consequences of 1000 Years of Change in New England. Yale University Press, pp. 280-299
 22. Nadelhoffer, K.J. Atmospheric Nitrogen Deposition: Implications for Terrestrial Ecosystem Structure and Functioning. 2007. Chapter 5 *in*: G. R. Visgilio and D. M. Whitelaw (eds.). Acid in the Environment: Lessons Learned and Future Prospects. Springer, pp. 77-96.

Book Reviews:

1. Nadelhoffer, K. J. 1993. Review of *Functional Ecology of Woodlands and Forests* (1992, by J. R. Packham, J. L. Harding, G. M. Hilton and R. A. Stuttard, Chapman & Hall, London). *Forest Ecology and Management* 63:82-83.
2. Nadelhoffer, K. J. 1994. Review of *Soil Ecology* (1994, by K. Kilham, Cambridge University Press, Cambridge, UK). *Écoscience* 1(4):359.

Reports:

1. *The Strategic Plan for the U.S. Climate Change Science Program: Chapter 8 - Ecosystems*. Published by the US Climate Change Science Program / US Global Change Research Program (US CCSP/GCRP), 2003. (Co-authors- S.H. Julius, S. Shafer, J. Amthor, P. Bontempi, M. Buford, J. Calder, S. Coloff, S. Conard, S. Mirabilio, K. Nadelhoffer, W. Peterson, D. Scavia, B. Stokes, W. Turner)
2. *IBRCS White Paper: A Plan for Developing A Plan for Developing and Governing the and Governing the National Ecological National Ecological Observatory Network (NEON)*. 32 pp. 2004. (Co-authors- J. Franklin, R. Gardner, A. Mills, W. Michener, K. Holsinger, K. Nadelhoffer, R. J. O'Connor, J. Goldman, J. MacMahon, H. Swain)
3. *Ecological Aspects of Biogeochemical Cycles: Report from a NEON Science Workshop*. 2004. Washington, DC: American Institute of Biological Sciences. R. Monson, lead author. Co-author with 19 other participants

4. *Ecosystems and Climate Change: Research Priorities for the U.S. Climate Change Science Program. Recommendations from the Scientific Community.* Lucier, A., M. Palmer, H. Mooney, K. Nadelhoffer, D. Ojima, and F. Chavez. 2006. Special Series No. SS-92-06 of the University of Maryland Center for Environmental Science, Chesapeake Biological Laboratory, Solomons, MD.
5. *Carbon - nitrogen interactions in forest ecosystems – Final report. Forest & Landscape Working Papers 17.* Gundersen, P., B. Berg, W. S., Currie, N.B. Dise, B.A. Emmett, V. Gauci, M. Holmberg, O.J. Kjønaas, J. Mol-Dijkstra, C. van der Salm, I.K. Schmidt, A. Tietema, W.W. Wessel, L.S. Vestgarden, C. Akselsson, W. De Vries, M. Forsius, H. Kros, E. Matzner, F. Moldan, K. J. Nadelhoffer, L.-O. Nilsson, G.J. Reinds, U. Rosengren A.O. Stuanes and R.F. Wright, 2006. ISBN-10 87-7903-287-3, Danish Centre for Forest, Landscape and Planning, KVL, 62 pp.
6. *CLIMATE CHANGE IN CHICAGO: An Assessment Prepared for the City of (2007)* Lead Authors (alphabetical). Katharine Hayhoe, Jessica Hellmann, Barry Lesht, Knute Nadelhoffer, University of Michigan, Donald Wuebbles. Plus 21 contributing authors.

Outreach and Public Media:

1. WUOM (Michigan Public Radio)- Interviewed on “Stateside” October 17, 2003 (archived www.michiganradio.org/stateside.asp). Discussed global carbon cycling, climate change and ongoing research on forest CO₂ uptake at the University of Michigan Biological Station.
2. Nadelhoffer, Knute J., 2003. “Biological Station is a hotspot for global change research”, University of Michigan LSA Magazine, Fall 2003, pp 7-10.
3. Hogg, Alan, Robert Vande Kopple, and Knute Nadelhoffer. 2005. Focus on Field Stations: The University of Michigan Biological Station. Bulletin of the Ecological Society of America, 86:49-56.

Reviewer for:

Biogeochemistry	Plant and Soil
Canadian Journal of Forest Research	Science
Ecology	Soil Biology and Biochemistry
Ecological Applications	Soil Science Society of America Journal
Ecological Monographs	Tree Physiology
Écoscience	NSF Ecosystems Studies Program
Ecosystems	NSF Physiological Ecology Program
Environmental Science and Technology	NSF Ecology Program
Forest Science	NSF Research Coordination Network
Forest Ecology and Management	NSF Conservation and Restoration Biology
Global Biogeochemical Cycles	USDA Competitive Grants in Forest Biology
Global Change Biology	USDA Forest/Rangeland/Crop Ecosystem Program
Journal of Environmental Biology	USDA Soils and Soil Biology Program
Journal of Environmental Quality	NASA Earth Observing System
Oecologia (Editorial Board 1995 - 2001)	NASA BOREAS Program
Nature	

Review Panels:

Panel Reviewer for EPA Forest Response Program (June 3-4, 1987).

Panel Reviewer for NASA-EOS (Earth Observing System). Team Member/Team Leader Proposals for analysis of HIRIS (High-Resolution Imaging Spectrometer) data (September 26-29, 1988).

Panel Reviewer for USDA National Research Initiative Forest/Rangeland/Crop Ecosystem Program (June 1991).

Panel Reviewer for the Canadian National Centres of Excellence Program (NCE), Montreal, Canada. (February 19-22, 1995).

NSF Dissertation Improvement Awards Panel (January 24-26, 1996).

NSF Site Review Team (Chair), Cornell University Research and Training Grant (May 28-29, 1996).

External Member of Appointments Board at Swedish Agricultural University (Uppsala and Umeå, Sweden), 1997-1998

NSF Ecosystem Studies Review Panel (1998 - 2002)

NSF Research Coordination Network (RCN) Review Panel (November 2004)

Site Review Panel: of German DFG Research Unit "Competitive Mechanisms of Partitioning of Water and Nitrogen in Beech-Dominated Deciduous Forests", Freiburg, Germany (March 9-10, 2006)

Invited talks and seminars:

MBL Ecosystems Center:

- "Fine root production in forest ecosystems" (April 1983)
- "Comparative effects of ammonium and nitrate uptake on forest productivity" (April 17, 1984)
- "The influence of litter inputs on forest soil C and N dynamics" (April 5, 1985)
- "Nitrogen and phosphorus cycling in an arctic landscape: Laboratory experiments" (March 29, 1988)
- "Testing the nitrogen saturation hypothesis in New England forests using ¹⁵N tracers at ecosystem scales" (January 12, 1993)
- "The Influence of N Deposition on C Sequestration in Temperate Forests" (May 19, 1998)

Fourth Tropical Trees Coordination Meeting sponsored by the NRC Board on Science and Technology for International Development (NRC-BOSTID). Presented talk: "Nitrogen cycling studies and plantation forestry at the Harvard Forest", Harvard Forest, Petersham, Mass. (November 14, 1986)

Watershed Co-ordination Workshop of the National Acidic Precipitation Assessment Program (NAPAP) Talk presented: "Nitrate mobility and nitrogen cycling in forested catchments". Atlanta, GA (June 6, 1986)

Program in Forest Microbiology Annual Meeting. Presented talk: "Can fine root production in forests be estimated using C and N budgets?" Harvard Forest, Petersham, Mass. (January 22, 1988)

Boston University. Presented talk: "The biogeochemical interactions in an arctic landscape" Boston, Mass. (March 31, 1988)

Meeting of Acid Rain Coordinators (MARC) Workshop on N Cycling and Nitrate Mobility. Presented talk: "The fate of nitrate additions to forest plots in the Bear Brooks Watershed, Maine, USA". Nijmegen, The Netherlands (May 22-25, 1989)

ESA Symposium: Climate Change and Arctic Ecosystems: The Role of Ecophysiology. Presented talk: "Climate change and plant nutrient availability in arctic soils". Toronto, Ontario (August 8, 1989)

Laval University Lecture Series on Belowground Biological Processes. Presented talk: "Fine root production and total carbon allocation in forest ecosystems". Quebec, Canada (March 2, 1990)

Harvard University. Seminar speaker in the Physiological Ecology Section. Presented talk: "Estimation of fine root production in forest ecosystems using carbon and nitrogen budgets". Cambridge, Mass. (March 9, 1990)

INTECOL V Symposium: The Effects of Closure on Ecosystem Dynamics. Presented talk: "Nutrient recycling and transport between ecosystems along an arctic tundra toposequence". Yokohama, Japan. (August 25, 1990)

Invited seminar: "Plot and catchment level ^{15}N -tracer experiments in forest ecosystems" given at Universität Bayreuth, Germany (January 24, 1991)

Invited seminar: "The use of ^{15}N tracers in ecosystems studies", University of Toronto, Toronto, Canada (November 1991)

ESA Symposium: Toward a Unification of Forest Carbon Budgets. Presented talk: "The use of element budgets to estimate carbon allocation to forest roots." Honolulu, Hawaii (August 10, 1992)

Symposium on Global Change and Arctic Terrestrial Ecosystems. Presented invited talk: "Potential impacts of climate change on nutrient cycling, decomposition and productivity in arctic ecosystems". Oppdal, Norway (August 25, 1993)

BioGeomon Symposium on Ecosystem Behaviour: Evaluation of Integrated Monitoring of Small Catchments. Presented invited talk: "Using ^{15}N tracers to measure biological sinks for N additions to catchments." Prague, Czech Republic. (September 20, 1993)

Invited seminar: "Is there a relationship between fine root production and aboveground production in forest ecosystems?" Dept. of Soil Science and Geology, Wageningen Agricultural University, The Netherlands. (September 23, 1993)

Invited seminar: "Using ^{15}N tracers at ecosystem scales to identify N sinks in New England Forests" Dept. of Ecology and Evolutionary Biology, University of Connecticut, Storrs, CT (April 14, 1994)

Contributed paper: "Using ^{15}N tracers at ecosystem scales to assess biogeochemical perturbations", First GCTE Science Conference, MBL, Woods Hole, MA (May 23-27, 1994)

Contributed paper: "Effects of chronic warming and nutrient additions on ecosystem respiration and methane fluxes along a tundra moisture gradient" Ecological Society of America Annual Meeting, Knoxville, TN. (August 8, 1994)

Invited seminar: "The use of ^{15}N tracers to characterize N retention mechanisms in forests." The University of New Hampshire, Durham, NH. (October 26, 1994)

Invited seminar: "Using ^{15}N tracers to characterize N retention mechanisms in forest ecosystems" The Institute for Ecosystems Studies, Millbrook, NY. (November 18, 1994)

Invited seminar: "Uses of stable isotopes in forest ecosystem studies", Department of Ecology and Environmental Studies, Swedish University of Agricultural Science, Uppsala, Sweden. (November 30, 1994)

Invited seminar: "What determines fine root biomass and turnover in forest ecosystems?" Department of Forest Ecology, Swedish University of Agricultural Science, Umeå, Sweden (December 3, 1994)

Invited seminar: "Mechanisms of N retention in forested watersheds at Bear Brooks, Maine" University of Amsterdam, The Netherlands (June 6, 1996)

Invited seminar: "Controls on N retention and exports in a fertilized forest watershed" Department of Forest Ecology, Swedish University of Agricultural Science, Umeå, Sweden (September 5, 1996)

Invited seminar: "Contrasting fates of ammonium versus nitrate deposition on forest ecosystems", Guest speaker at the Chapman Conference on Nitrogen Cycling in Forested Catchments, Sun River, Oregon. (September 18, 1996)

Invited seminar: "Nitrogen Retention in New England (USA) Forests", Norwegian Institute for Water Research, Oslo, Norway (October 8, 1996)

Invited seminar: "Tundra soil organic matter and climate change" given at Global Change and Tundra Soil Biology: An International Workshop. Danish Polar Centre, Copenhagen, Denmark (November 1-4, 1996)

- Invited seminars: “How do rates and forms of N deposition affect forest N retention?”, Norwegian Institute for Forest Research, Ås, Norway (February 27, 1997) and the Swedish Agricultural University, Uppsala, Sweden (April 17, 1997)
- Invited seminar: “Linking research at local, regional and global scales: Perspectives on the US LTER Program”, Norwegian Institute for Forest Research, Ås, Norway (May 15, 1997)
- Invited seminar: “The big picture: Changes in dynamics of carbon and nitrogen in soils in response to soil warming”, Annual NERC NIGEC Meeting, Harvard Forest, Petersham, Massachusetts (March 12, 1998)
- Invited seminar: “Research at the MBL Ecosystem Center at plot and global scales: Does nitrogen pollution increase CO₂ uptake by forests?” Harvey Mudd College, Claremont, CA (February 3, 1999)
- Invited seminar: “Long-term responses of forest C and N cycles to N deposition at stand and regional Scales.” 10th Annual Harvard LTER Symposium, Petersham, Massachusetts (March 29, 1999)
- Invited seminar: "Does nitrogen deposition increase forest CO₂ uptake?" Colorado State University, Fort Collins (April 19, 1999)
- Invited seminar: “Controls on forest soil organic matter development and dynamics: chronic litter manipulation as a potential international LTER activity.” East European Regional International LTER Workshop. Budapest, Hungary (June 22, 1999), *also given at* The East Asian Regional International LTER Workshop. Seoul, Korea (October 13, 1999)
- Invited seminar: “The potential effects of N deposition on fine root production in forests” New Phytologist & GCTE Symposium – Root Dynamics and Global Change: An Ecosystem Perspective. Townsend, Tennessee (Oct 21, 1999)
- Invited seminar: “How do N availability & N deposition influence fine root production?” Department of Ecology, Evolution and Behavior, University of Minnesota (April 26, 2000)
- Invited seminar: “The missing sink: Is n deposition increasing CO₂ uptake by forests?” Division of Biology, Kansas State University, (October 10, 2000)
- Invited seminar: "Is N deposition stimulating CO₂ uptake by forests?" Boston University Marine Program (April 30, 2001)
- Invited seminar: “Soil Organic Matter Formation: Insights from Chronic Manipulations of Plant Inputs to Soils” The East Asian Regional International LTER Workshop. Hatgal, Mongolia (July 10, 2001)
- Invited seminar: “Is N Deposition Attenuating Atmospheric CO₂ Accumulation?” Department of Biology, University of Pennsylvania (September 13, 2001)
- Invited seminar: “Decade-scale responses of temperate forests to N deposition: Links to the global carbon cycle”, University of Michigan (March, 2002).
- Invited seminars: “Tracing the fate of N additions to temperate forests on decadal time scales: Implications for carbon sequestration”
- Utah State University (February 5, 2003)
 - University of Virginia (February 13, 2003)
 - Kellogg Biological Station, Hickory Corners, MI (January 23, 2004)
 - North American Forest Biology Workshop, Michigan Technological University, Houghton, MI U.S.A. (July 12, 2004)
- Invited seminar “Research opportunities at the National Science Foundation: What graduate students, silverbacks, and others need to know”, Utah State University (February 5, 2003).

Presentation to the National Science Board: "NEON: A potential user's perspective." The National Science Foundation, Arlington, VA (March 13, 2003).

Invited seminar, "Nitrogen cycling in temperate forests." Workshop on Nitrogen Fluxes and Processes in Tropical and Temperate Systems, Ubatuba, Brazil. (March 16, 2003)

Invited seminar, "Are Temperate Zone Forests Slowing the Rise of Atmospheric CO₂?" Tuskegee University, Tuskegee, AL (October 30, 2004).

Invited keynote address: "A High Latitudes Ecological Observatory: Lessons Learned from Organizing the Great Lakes Regional Observatory". Open meeting of the High Latitudes Ecological Observatory. Fairbanks, AK (February 28, 2005)

Invited conference seminar, "Atmospheric Nitrogen Deposition: Implications for Nutrient Cycling, Acidification and Terrestrial Ecosystem Functioning". Conference titled: *Acid in the Environment: Lessons Learned and Future Prospect*. Goodwin-Niering Center for Conservation Biology and Environmental Studies, Connecticut College, New London, CT (April 1, 2005)

Other Activities:

Participant in "Workshop on Climate Feedbacks and the Role of Tundra, Peatlands, and Boreal Ecosystems in the Global Carbon Cycle" sponsored by DOE CO₂ Research Program, Oak Ridge, TN (May 4-6, 1988).

Co-organizer of "LTER Decomposition Workshop", Marine Biological Laboratory, Woods Hole, MA (May 15-17 1989).

Invited participant in NSF/DOE sponsored conference, "Physiological Ecology of Arctic Plants", Oakville, Ontario (August 2-5, 1989).

Participant in NSF/LTER sponsored workshop: "Comparative Methods of Root Analysis", Michigan State Univ., East Lansing, MI (April 30 - May 2 1990).

Participant in "LTER Stable Isotope Workshop", held at the Marine Biological Laboratory, Woods Hole, MA (September 28-30, 1990).

Invited participant in "Nitrogen Saturation Workshop", at The Institute for Ecosystems Studies, Mary Flagler Cary Arboretum, Millbrook, NY (December 9-10, 1990).

Invited participant in NITREX Workshop on Plot and Catchment scale ¹⁵N Experiments, Amsterdam, The Netherlands (January 26-27, 1991).

Invited participant in annual meetings of the European NITREX project:

- Bangor, Wales (August 31-September 2, 1993);
- Göttingen, Germany (September 26-28, 1994);
- Alptal, Switzerland (September, 1995)

Invited participant in Gordon Research Conference entitled "Hydrological, Geochemical and Biological Interactions in Forested Catchments" (July 1-5, 1991). Co-chair and discussion leader for daily session entitled "Biological processes as influenced by and as influencing geochemical and hydrological responses of forested catchments".

Participant in the "International Symposium on Experimental Manipulations of Biota and Biogeochemical Cycling in Ecosystems", Copenhagen, Denmark (May 18-20, 1992). Presented talk: "Biological sinks for N additions to a forested catchment".

Participant in IPCC workshop "Biotic Feedbacks in the Global Climate System", Woods Hole, Mass., USA (October 25-29, 1992). Rapporteur for session on "Plant Feedbacks".

- Participant in joint IGBP/START/IGAC/GCTE/DIS/GAIM "*Workshop on African Savannas, Land Use and Global Change: Interactions of Climate, Productivity and Emissions*", Victoria Falls, Zimbabwe (June 2-5, 1993).
- Rapporteur, Dahlem Workshop on "*The Role of Nonliving Organic Matter in the Earth's Carbon Cycle*", Berlin, Germany (September 12-17, 1993).
- Participant in the *First GCTE Science Conference*, MBL, Woods Hole (May 23-27, 1994)
- Participant in the *Working Group on Trace Gas Fluxes in the Arctic*, EPA-Athens (February 15-16, 1994)
- Participant in the annual meetings of the Harvard Forest LTER and NIGEC-Northeast Project, Petersham, Mass. 1989-1995
- Participant in the *Annual Arctic Tundra LTER Meetings*, Woods Hole, Mass. (1988-2002)
- Participant in the *Annual Arctic LAII (Land-Atmosphere-Ice Interactions) Workshop*, Seattle WA (February 22-25, 1996)
- Participant in the *Long-Term Intersite Decomposition Experiment Team Workshop*. Sevilletta Research Station, New Mexico (March 24-25, 1996)
- Invited Participant in the "*Workshop on Responses to Multiple Manipulations of Arctic Ecosystems*" Presented talks on the effects of warming and nutrient enrichment on trace gas fluxes and fine root dynamics in tundra ecosystems. Abisko, Sweden. (June 8-11, 1996)
- Invited participant in "*Chapman Conference on Nitrogen Cycling in Forested Catchments*". Served as session co-chair and presented seminar (above). Sun River, Oregon. (September 16-20, 1996)
- Invited participant in *Global Change and Tundra Soil Biology: An International Workshop*. Presented seminar (above). Danish Polar Centre, Copenhagen, Denmark (November 1-4, 1996).
- Invited commentator: "Graduate Students' Workshop", Department of Ecology and Environmental Research, Swedish Agricultural University. Served as external evaluator for 21 graduate Ph.D. student presentations. Hammarskog, Uppsala, Sweden. (April 17-18, 1997)
- External Member of Appointments Board at Swedish Agricultural University (Uppsala and Umeå, Sweden), October 1997-March 1998.
- Hosted IASCE-FATE-GCTE Workshop on the Use of ^{14}C Tracers in Arctic Research. Participants from MBL, UC-Irvine, U-Michigan, Kansas State University, Sweden, and Russia. (October 29-30, 1998)
- Participant in SCOPE (Scientific Committee on Problems in the Environment) Workshops: "*Estimation of Denitrification and other Nitrogen Sinks at the Landscape Scale*," held at the National Center for Ecological Analysis and Synthesis (NCEAS), Santa Barbara, CA. December 12-15, 1998 and May 4-8, 1999. This is a working group of a SCOPE project entitled "Nitrogen Transport and Transformations: A Regional and Global Analysis."
- Participant in SCOPE (Scientific Committee on Problems in the Environment) Workshop: "Soil Warming Synthesis" NCEAS, Santa Barbara, CA. February 1-5, 1999.
- Participant on an ad hoc advisory panel for Biosphere II planning, Oracle, Arizona. May 10-12, 1999
- Co-Organizer of a GCTE (Global Change in Terrestrial Ecosystems) conference entitled: "*How Nutrient Cycles Constrain Carbon Balances in Boreal Forests and Arctic Tundra*". Abisko, Sweden. June 15-20, 1999. (with Drs. Peter Högberg of Umeå, Sweden & Terry Callaghan, Abisko Research Station Sweden)
- Invited participant in the *East European Regional International LTER Workshop*. Budapest, Hungary. Presented a talk entitled "Controls on Forest Soil Organic Matter Development and Dynamics: Chronic Litter Manipulation as a Potential International LTER Activity." June 21-24, 1999

- Invited participant in the *East Asia Regional International LTER Workshop*. Seoul, Korea. Presented a talk entitled "Controls on Forest Soil Organic Matter Development and Dynamics: Chronic Litter Manipulation as a Potential International LTER Activity." Oct 10-17, 1999.
- Invited participant in the New Phytologist Symposium & GCTE Symposium – *Root Dynamics and Global Change: An Ecosystem Perspective*. Invited talk entitled "The Potential Effects of N Deposition on Fine Root Production in Forests" Oct 20-22, 1999
- Science fair judge for Falmouth Public Schools and Falmouth Academy- most years 1988 through 2002
- Ecosystem Interagency Working Group (EIWG)- Participated in drafting and revising Chapter 8 of *The Strategic Plan for the U.S. Climate Change Science Program: Ecosystems*. Published by the US Climate Change Science Program / US Global Change Research Program (US CCSP/GCRP), 2003
- Invited participant, *International Conference on Mechanisms and Regulation of Organic Matter Stabilisation in Soils*, Schloss Hohenkammer, Munich, Germany. October 3-5, 2003
- Invited participant, National Nitrogen Science Plan Development Workshop, Boulder, CO. November 15-17, 2003
- Invited participant, NEON Biogeochemistry Workshop, Boulder, CO. July 20-21, 2004.
Contributor to report entitled: American Institute of Biological Sciences. 2004. *Ecological Aspects of Biogeochemical Cycles: Report from a NEON Science Workshop*. Washington, DC: AIBS.
- Invited conference participant: "*Acid in the Environment: Lessons Learned and Future Prospects*", held at Goodwin-Niering Center for Conservation Biology and Environmental Studies, Connecticut College, New London, CT (April 1 & 2, 2005)

Past Awards:

NSF-BSR-8317531	"Carbon-nitrogen interactions along resource availability gradients in forest ecosystems" (Subcontract from University of Wisconsin) Co-PI with J. Melillo February 1984 - March 1986	\$162,925
NSF-BSR-8507493	"Nutrient cycling in an Arctic landscape: Interactions between ecosystems along a riverside toposequence" PIs: G. Shaver, A. Giblin, K. Nadelhoffer September 1985 - August 1988 (4 months/yr),	\$810,000
NSF-BSR-8806635	"Biogeochemical diversity in an Arctic landscape: Element transport and the spread of disturbance effects" PIs: G. Shaver, A. Giblin, K. Nadelhoffer September 1988 - September 1990 (4 months yr 1, 3 months yr 2)	\$365,299
NSF-BSR-8702328	"An LTER program for the Alaskan Arctic" PIs: J. Hobbie, B. Fry, A. Giblin, K. Nadelhoffer, B. Peterson, E. Rastetter, G. Shaver September 1987 - August 1992 (0 months/yr),	\$2,250,000
NSF-BSR-8718426	"A comparative study of the response of terrestrial ecosystems to changes in the global environment" PIs: J. Hobbie, J. Melillo, K. Nadelhoffer, E. Rastetter, G. Shaver March 1988 - August 1991 (3 months/yr)	\$1,364,395
NSF-BSR-8811764	"Harvard Forest: Long Term Ecological Research" (Subcontract from Harvard University) PIs: J. Melillo, K. Nadelhoffer,	\$496,583

	P. Steudler October 1988 - September 1994 (1 month/yr),	
NSF-BSR-9009190	"Biological controls on nitrate retention in northeastern forest ecosystems" PI: K. Nadelhoffer July 1990 - June 1993 (3 months/yr)	\$316,601
NSF-BSR-9019055	"Global change and the carbon balance of arctic ecosystems: the importance of carbon/nutrient interactions" PIs: G. Shaver, A. Giblin, K. Nadelhoffer, E. Rastetter November 1991 - December 1994 (3 months/year)	\$1,212,208
NSF-DEB 9019055	"Global change and the carbon balance of arctic ecosystems: The importance of carbon-nutrient interactions" PIs: G. Shaver, A. Giblin, K. Nadelhoffer, E. Rastetter November 1, 1991 - October 30, 1996 (2 months/yr)	\$1,246,358
NSF-DEB-9408794	"Predicting forest N dynamics using ecosystem-scale 15-N tracers" PI: K. Nadelhoffer July 15, 1994 - June 30, 1999 (3 months/yr)	\$410,000
NSF-DEB 9411975	"Harvard Forest Long-Term Ecological Research Program, Forest Ecosystem Dynamics in central New England." PIs: J. Melillo, K. Nadelhoffer, P. Steudler January 15, 1995 - January 14, 2001 (1 month/yr)	\$746,130
NSF-DEB 9815990	"Effects of N Deposition on Forest C Balance: Long-term Responses at Stand and Regional Scales." PI: K. Nadelhoffer, W. Currie (U. MD) March 1, 1999 – May 31, 2003 (3 months/yr)	\$744,506
NSF/NASA/EPA-OPP-9904392	GCTE Conference: "How Nutrient Cycles Constrain Carbon Balances in Boreal Forests and Arctic Tundra" PI: K. Nadelhoffer March 1, 1999 – February 28, 2000 (0.5 months/yr)	\$25,090
NSF-OPP 9024188	"The Arctic LTER Project: Terrestrial and freshwater research of ecological controls" PIs: J. Hobbie, B. Fry, A. Giblin, K. Nadelhoffer, B. Peterson, E. Rastetter, G. Shaver September 1992 - August 1998 (logistics & supplies, no salary)	\$3,907,500
NSF-OPP 9619942	"Belowground C Sources and Sinks in Arctic Tundra Ecosystems" PIs: K. Nadelhoffer, L. Johnson (Kansas State), G. Kling (U. Mich.), W. Reeburgh (UC-Irvine) March 1, 1997- April 30, 1999 (3 months/yr)	\$478,000
NSF-OPP 9615563	"Global Change and The Carbon Balance of Arctic Tundra Ecosystems: The Importance of Carbon-Nutrient Interactions in Soils" PIs: K. Nadelhoffer, A. Giblin, G. Shaver March 1, 1997-April 20, 2000 (2.5 months/yr)	\$742,776
NSF-OPP 9904392 (symposium proposal)	"How nutrient cycles constrain carbon balances in boreal forests and Arctic Tundra" PIs: K. Nadelhoffer April 1, 1999 – March 31, 2000 (0.5 months/yr)	\$25,000
NSF-OPP-9911681	"Developing Process-Level Understanding of Controls on Belowground Carbon and Nutrient Dynamics in Tundra	\$2,074,085

	Ecosystems." co-PI K. Nadelhoffer (former PI when grant was at MBL, PI transferred to G. Kling with move to Michigan) February 15, 2000 – February 14, 2005 (3 months/yr) Extended through 2007	
NSF-DEB-0089585	"Turnover and Retention of Nitrogen in an Arctic Watershed: Links to Organic Matter Accumulation and Response to Climate" PIs: G. Shaver, A. Giblin, K. Nadelhoffer, E. Rastetter September 15, 2001 – August 31, 2005 (1 month/yr)	\$1,088,392
USDA 95-37101-1879	"Influences of above-and belowground litter on forest soil organic matter dynamics" PI: K. Nadelhoffer August 15, 1995 - August 31, 1999 (2.5 months/yr)	\$316,000
USDA-01-CA-11242343-051	"Predicting the Influence of N Deposition on Temperate Forest Carbon Uptake and Storage Using ¹⁵ N Tracers and Modeling" September 1, 2001 – August 31, 2004 PI: Nadelhoffer (until June 2002, transferred to C. Neill at MBL afterward)	\$73,182
US DOE 901214	"Biological controls on soil organic matter quality and quantity" a component of the New England Regional Center of the National Institute for Global Environmental Change (NIGEC). (Subcontract from Harvard University) PI: K. Nadelhoffer April 1992 - June 1995 (1 month/yr)	\$38,908
US DOE	"Atmosphere-biosphere feedback mechanisms in a forest setting" A component of the New England Regional Center of the National Institute for Global Environmental Change (NIGEC). (Subcontract from Harvard University) PIs: J. Melillo, K. Nadelhoffer, P. Steudler October 1990 - June 1995 (1 month/yr)	\$1,321,845
US DOE	"Atmosphere-biosphere feedback mechanisms in a forest setting" (continuation). PIs: J. Melillo, K. Nadelhoffer, P. Steudler January 1, 1995 – June 30, 1998(1 month/yr)	\$155,700
Harvard/DOE USDA DE-FC03-90ER61010	"Human Influences on Forest Nitrogen Budgets and their Implications for Forest Carbon Storage." PIs: J. Melillo, K. Nadelhoffer, P. Steudler July 1, 1998 – June 30, 2001 (1 month/yr)	\$489,500
US EPA	Watershed Manipulation Project. "Nitrate mobility and nitrogen cycling" (Subcontracts from University of Wisconsin and the University of New Hampshire) PIs: K. Nadelhoffer, J. Melillo September 1986 – February 1993 (2.5 months/yr)	\$521,422
US EPA	"Controls on radiatively active trace gases in tundra and taiga ecosystems." (Subcontract from the University of Alaska) PI: K. Nadelhoffer October 1990 - September 1993 (1.5 month/yr)	\$123,512
US EPA 5B127NASE	"Isotopic analysis of watershed samples following experimental ¹⁵ N additions." PI: K. Nadelhoffer September 11, 1995 - May 30, 1996	\$24,929

U of Michigan OVRP	“A Proposal to Plan a Great Lakes Regional Ecological Observatory” PI- K. Nadelhoffer 2004-2006	\$40,000
National Center for Ecological Analysis and Synthesis (NCEAS)	“The Fate of Nitrogen Inputs to Terrestrial Ecosystems” Working Group/Workshops in Santa Barbara, CA. Funds are all for participant support. PIs: Pamela Templar, Michelle Mack, Knute Nadelhoffer August 2004 – June 2006	\$69,000

Current Awards:

NSF-DBI-0453328	“REU Site: Biosphere-Atmosphere Studies in a Changing Global Environment. PI- K Nadelhoffer, co-PIs M.A. Carroll, D. Karowe March 1, 2005 – February 28, 2008	\$328,148
NSF-DBI-0453328	“REU Site: Biosphere-Atmosphere Studies in a Changing Global Environment. PI- K Nadelhoffer, co-PIs M.A. Carroll, D. Karowe March 1, 2005 – February 28, 2008	\$328,148
NSF-DBI-0453328 (RET Supplement)	REU Site: SUPPLEMENT K Nadelhoffer, co-PIs M.A. Carroll, D. Karowe March 1, 2005 – February 28, 2006	\$9,004
NSF-DBI-0453328 (RET Supplement)	REU Site: SUPPLEMENT K Nadelhoffer, co-PIs M.A. Carroll, D. Karowe March 1, 2006 – February 28, 2007	\$20,001
NSF-IGERT- 0504552	“IGERT: Biosphere-Atmosphere Interactions Phase II” PI. M.A. Carroll, co-PIs, S. Bertman, P. Curtis, D. Karowe, K. Nadelhoffer May 1, 2005 – April 30, 2010	\$1,198,140
NSF-DBI-0504552	“FSML: Enabling Forest Canopy Access and Analytical Capacity at the University of Michigan Biological Station February 1, 2007 – January 31, 2009	\$151,195