

Knute J. Nadelhoffer

Department of Ecology & Evolutionary Biology
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As of November 2, 2020

Academic and Professional Appointments:

Professor	Dept. of Ecology and Evolutionary Biology University of Michigan, Ann Arbor, MI Sept. 2003 – present
Director	University of Michigan Biological Station June 2003 – August 2020
Program Director	National Science Foundation, Ecosystem Studies Program, Arlington, VA June 2002–May 2003
Fulbright Fellow	Norwegian Institute for Water Research, Oslo, Norway and Norwegian Institute for Forest Research, Ås, Norway: Sept. 1996 – August 1997
Researcher	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

Honors:

Fellow– American Association for the Advancement of Science (AAAS): 2019 – Present
 Fellow– Ecological Society of America (ESA): 2020 – Present
 Guest Professor– University of Copenhagen, Denmark: February – July 2017
 ISI Highly Cited Researcher– [Thomson ISI Web of Science: Ecology/Environment](#) : 2001
 Fulbright Fellow– Norwegian Institute for Water Research, Oslo, and
 Institute for Forest Research, Ås, Norway: Sept. 1996 – August 1997
 Henry Vilas Fellow– University of Wisconsin, Graduate School, 1979 – 1980

Other Appointments and honors:

Board Member	Environmental Law & Policy Center (www.elpc.org) 2010 – Present
Scientific Advisory Council	Environmental Law & Policy Center, Founding Chair, 2006 – 2010, Member, 2006 – Present
Certified Senior Ecologist	Ecological Society of America (www.esa.org/careers_certification/) June 1, 2008 – Present
President	Association of Ecosystem Research Centers (http://www.ecosystemresearch.org/) November 2004 – Nov. 2005 AERC Board Member, November 2003 – November 2008

Panel Manager

Forest Rangeland and Crop Ecosystems Program, USDA National
 Research Initiative Competitive Grants Program
 October 1991 – October 1992 (2 months)

Professional Preparation:

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

Professional Interests and Experience:

Dr. Knute Nadelhoffer is an ecologist who studies plant-soil-atmosphere interactions in temperate forests and arctic tundra. His research combines field-based experiments and modeling studies aimed at predicting ecosystems responses to climate change, air pollution, physical disturbances, and human-ecosystem interactions. Nadelhoffer is a Fellow of the American Association for the Advancement of Science (AAAS), a Fellow of the Ecological Society of America, and a Professor in the Department of Ecology and Evolutionary Biology at the University of Michigan (<http://www.eeb.lsa.umich.edu>).

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, and held positions as Assistant, Associate and Senior Scientist at the Ecosystems Center through 2002. He was a Fulbright Research Fellow at the Norwegian Institute of Water Research and the Norwegian Institute of Forest Research (1996-97) and served as Director of the Ecosystem Studies Program at the National Science Foundation (2002-2003). He was President of the Association of Ecosystem Research Centers (2006). He works with the Environmental Law and Policy Center (www.elpc.org) as a Board Member (2010 – present) and Member of ELPC's Science Advisory Council, on which he served as founding Chair (2006-2010).

Dr. Nadelhoffer was a member of the National Network Design Committee of the AIBS project to plan the National Ecological Observatory Network (NEON at www.neoninc.org) and co-chaired the NEON Biogeochemical Cycles subcommittee (2004-2006). He served as an *Expert Reviewer* for (i) the 4th Assessment Report of the Intergovernmental Panel on Climate Change (IPCC Climate Change 2007: Working Group II Report "Impacts, Adaptation and Vulnerability"), (ii) the IPCC Special Report on Climate Change and Land (2019), and (iii) the upcoming IPCC 6th Assessment Report (Working Group I Report, scheduled for release in 2021). He has published over 160 peer-reviewed journal articles, data sets, book chapters, and reports describing ecological processes at local through global scales.

Teaching Experience:

University of Michigan-

Environ 110 *Global Change: The Science of Sustainability*, Fall 2014, 4 credits (72 enrolled), Co-instructor with Professor George Kling and Dr. James Gleason.

EEB 381 *General Ecology*, Spring 2009, Spring 2011, 5 credits.

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 410. *Ecology & Evolutionary Biology Capstone Course*. Winter terms (50%), 2012-16, 2018-19

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
- Fall 2008, 1 credit. Dana Thomas, EEB pre-candidate
- Fall 2010, 1 credit. Susan Cheng, EEB pre-candidate
- Fall 2014, 1 credit. Jacqueline Popma, EEB pre-candidate
- Fall 2016, 1 credit. Nicholas Medina, 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
- Winter 2009, 1 credit. Dana Thomas, EEB pre-candidate
- Winter 2011, 1 credit. Susan Cheng, EEB pre-candidate
- Winter 2014, 2 credit. Buck Castillo, EEB MS candidate

EEB 790 *Masters Theses*

- Fall 2013, Winter 2014, Fall 2014. James Kupihea
- Winter 2015, Fall 2015, Winter 2016. Nicholas Medina

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

Buck Castillo, MS 2014. PhD 5th year. LSA, Dept. of Ecology and Evolutionary Biology (Co-advisor with Professor Timothy James)

Jacqueline Popma, PhD 4th year, LSA, Dept. of Ecology and Evolutionary Biology (Advisor)

Sarah Kiger, PhD candidate SNRE (cognate, committee member)

Degrees granted

Leslie Decker, PhD 2018, LSA, Department of Ecology and Evolutionary Biology (committee member)

Susan Cheng, PhD 2016, LSA, Department of Ecology and Evolutionary Biology (Co-advisor, with Prof. Allison Steiner, Dept. Climate and Space Sciences and Engineering)

Sae Yun Kwon, PhD 2015, LSA, Department of Earth & Environmental Science (committee member)

Daniel Katz, PhD 2015, SNRE (cognate, committee member)

Jasmine Crumsey, PhD May 2014, LSA, Department of Ecology and Evolutionary Biology (Advisor)

Leiling Tao, PhD 2013, LSA, Ecology & Evolutionary Biology (committee member),

Dana C. Thomas, MS 2011, LSA, Ecology & Evolutionary Biology, (Co-Advisor with Don Zak),

Emily Farrer, PhD 2009, LSA, Ecology & Evolutionary Biology, (committee member)

Kristine Crous, PhD 2008 School of Natural Resources & the Environment (committee member, cognate)

Leslie Sefcik, PhD 2007, School of Natural Resources & the Environment (committee member, cognate)

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

Nicholas Medina, MS 2017, LSA, Dept. of Ecology & Evolutionary Biology (advisor)

James Kupehia, MS 2015, LSA, Dept. of Ecology and Evolutionary Biology (Advisor)

Serge Farinas, MS 2012, LSA, Ecology & Evolutionary Biology, (Co-Advisor, with Deborah Goldberg)

John Berini, MS 2011, LSA, Ecology & Evolutionary Biology, (committee member)

Deborah Hudleston, MS 2006, LSA, Dept. of Ecology & Evolutionary Biology (co-advisor)

Yi Ciu, MS 2006, LSA, Dept. of Ecology & Evolutionary Biology (committee member)

Left program

John Hassett, PhD candidate, SNRE (cognate), left program 2010

Iryna Dronova, PhD candidate, SNRE (cognate), left program 2007

Other institutions-

Clifton Cottrel, PhD candidate, University of Maryland (committee member)

Fernanda Santos, PhD 2014, Queens College, City University of New York (committee member)

Marie Frost Arndal. PhD 2012, Danish Centre for Forest and Landscape, University of Copenhagen, Dissertation “Root Dynamics and Belowground Carbon Input in a Changing Climate” (member, Assessment Committee)

Wendy Marie Loya, PhD 2001, Division of Biology Kansas State University. Dissertation “Carbon Cycling and Storage in Arctic Tundra Soils” (committee member)

Jennifer Doles, MS 2000. University of Northern Colorado.

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” (committee member)

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

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.” (committee member)

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.” (committee member)

- 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).
- 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).
- Joseph Hendricks, Ph.D. 1994. University of New Hampshire. Dissertation: “The Effects of Nitrogen Availability on Fine Root Dynamics in Forest Ecosystems.” (committee member)
- 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.” (committee member)
- 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.” (committee member)
- Rose Crabtree, Ph.D. 1992. Dept. of Evolutionary and Organismal Biology, Harvard University, Cambridge, MA. Dissertation: “Birch Regeneration in a Changing Nitrogen Environment” (committee member)

Post-Doctoral Advisees:

University of Michigan

Pierre-Joseph Hatton. 2013 – 2016

Apolline AuClerc, 2012 – 2013. Present position: Maître de Conférences, Assistant Professor, Université de Lorraine / ENSAIA www.ensaia.inpl-nancy.fr

Lucas E. Nave, 2008 – 2012. Present position: *Associate Research Scientist*, University of Michigan Biological Station & UM Dept of Ecology & Evolutionary Biology

Marine Biological Laboratory (Woods Hole, MA)

William S. Currie. 1995 – 1997. Present position: *Professor*, School of Natural Resources & Environment, University of Michigan

Martin Sommerkorn. 1998 – 2003. Present position: *Head of Conservation*, World Wildlife Fund Global Arctic Programme, Oslo, Norway.

Leanne Jablonski. 1997 - 1998. Present position: *Director*, Marianist Environmental Education Center, University of Dayton, Dayton, OH

Service

University of Michigan

- LSA Natural History Museum, *People and the Planet* Exhibit Development Team Member, 2018-2019
- EEB Biological Sciences Building Committee, 2016-2019
- EEB Executive Committee, Fall 2004 – Summer 2006, Fall 2015
- EEB Promotions & Merit Committee, 2004-2005 and 2008-2009, 2011-2014
- UM Campus Sustainability Integrated Assessment Steering Committee, 2010 – 2012
- OVPR Directors Council in Energy and Sustainability, 2010 – 2011

- UM Internal Review Committee of the Graham Environmental Sustainability Institute, March 2009
- LSA Natural and Physical Sciences Divisional Evaluation Committee, Fall 2004-Spring 2007
- Provost's Advisory Committee on the School of Natural Resource & the Environment (SNRE), member 2004-2005

Other National

- Bowdoin College, Kent Island Field Station Site Review Team, May-June 2014
- University of Minnesota, Itasca Field Station Site Review Team, May 2016

Regional

- Great Lakes Observing System (Great Lakes Commission), Steering Committee member, 2004-2005
- Roundtable on Scientific Integrity, sponsored by the Union of Concerned Scientists. Panel Moderator, University of Michigan, March 21, 2005
- Michigan Hydraulic Fracturing Integrated Assessment, Team Member and Technical Report Co-author (Environment/Ecology), 2011-2013

National

- NSF Committee of Visitors: EPSCOR 2015
- NSF Review Panels (since 2003) BIO/GEO RCN 2004, BIO-FSML 2008, BIO-FSML 2014
- NSF Ecosystem Studies Program
 - Program Director June 2002-May 2003
 - Panelist 1998-2001
- NSF Research Coordination Network Review Panelist, October 2004
- U.S. Carbon Cycle Science Synthesis Research Interagency Panel: NASA, USDA, DoE, NOAA. 2013
- U.S. Dept. of Energy Early Career Research Program for DOE Office of Biological and Environmental Research (BER), Review Panel Member, 2012
- National Climate Assessment: US Global Change Research Program
 - Member, Ecosystem Impacts Working Group, 2010 – 2012
- Environmental Law and Policy Center of the Midwest (www.elpc.org)
 - Science Advisory Committee, Founding Chair. 2007 – 2010
 - Science Advisory Committee, Member 2007 – present
 - Board Member 2010 – present
- MacArthur Agro-ecology Research Center, Lake Placid Florida

- Member, Scientific Advisory Committee, 2007 - 2012
- Smithsonian Institution
 - Member, Science Advisory Team National Museum of Natural History (Smithsonian) exhibit: “*SOILS: Worlds Underfoot*” (2008-2009)
- US Environmental Protection Agency
 - Reviewer of U.S. EPA. Integrated Science Assessment (ISA) for Oxides of Nitrogen and Sulfur – Ecological Criteria (Final Report). EPA/600/R-08/082F, 2008
- American Institute for Biological Sciences Public Policy Review Committee Member, 2006
- Association of Ecosystem Research Centers (AERC)-
 - Past President, Nov 2006-Nov 2008
 - President, Nov 2005 – Nov 2006
 - President Elect, Nov 2004-Nov 2005
 - Member at Large- 2003-2004
- Ecological Society of America, Rapid Response Team 2005 - 2008
- Ecosystems Interagency Working Group
 - Non-agency participant, June 2003 - 2006
 - NSF Representative, June 2002-June 2003
- 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).

International

- Intergovernmental Panel on Climate Change (IPCC)
 - 2020 – Expert Reviewer for the Second Order Draft, Working Group I (IPCC SOD, WGI) for the upcoming IPCC 6th Assessment Report (scheduled for release in 2021)
 - 2018-19 – Expert Reviewer for the First Order Draft of the IPCC Special Report on Climate Change and Land (SRCCL)
 - 2007 – Expert Reviewer for the Fourth Assessment Report (IPCC Climate Change 2007: Working Group II Report "Impacts, Adaptation and Vulnerability"
- Program Review of the Danish Center for Permafrost Dynamics in Greenland, for the Danish National Research Foundation, 2011
- Member, Oversight Board of the North American Nitrogen Center (NANC). The NANC is one of five globally distributed centers of the International Nitrogen Initiative 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) 2005-2010

- Site Review Panel, Plant Biology “Quality and Impact” Assessment, Swedish Agricultural University, Uppsala, Sweden. May 3-7, 2009
- 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.
- 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.

Reviewed Journal Articles (126 as of 2 November 2020):

Google Scholar Profile: Total: 32,226 citations, h-index=78; Since 2015: 9,775 citations. h-index=51

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. McClaugherty 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. R. 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 ^{15}N 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 ^{15}N 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 ^{15}N . *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. S. 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 CO_2 flux in wet sedge tundras: Responses to nutrients, temperature, and light. *Ecological Monographs* 68:75-97.
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124. Wieder, W.R., D. Pierson, S.R. Earl, K. Lajtha, S. Baer, F. Ballantyne, A.A. Berhe, S. Billings, L.M. Brigham, S.S. Chacon, J. Fraterrigo, S.D. Frey, K. Georgiou, M. de Graaff, A.S. Grandy, M.D. Hartman, S.E. Hobbie, C. Johnson, J. Kaye, E. Snowman, M.E. Litvak, M.C. Mack, A. Malhotra, J.A.M. Moore, **K. Nadelhoffer**, C. Rasmussen, W.L. Silver, B.N. Sulman, X. Walker, and S. Weintraub. 2020. SOils DATA Harmonization database (SoDaH): an open-source synthesis of soil data from research networks version 1.0. *Earth System Science Data Discussion* [doi:10.5194/essd-2020-195](https://doi.org/10.5194/essd-2020-195).
125. Billings, S.A., K. Lajtha, A. Malhotra, A.A. Berhe, M.-A. de Graaff, S. Earl, J. Fraterrigo, K. Georgiou, S. Grandy, S.E. Hobbie, J.A.M. Moore, **K. Nadelhoffer**, D. Pierson, C. Rasmussen, W.L. Silver, B.N. Sulman, S. Weintraub, W. Wieder. 2020. Soil organic carbon is not just for soil scientists: Measurement recommendations for diverse practitioners. *Ecological Applications*. Accepted, October 6, 2020.
126. Finzi, A. C., M.-A. Giasson, A. A. Barker Plotkin, J. D. Aber, E. R. Boose, E. A. Davidson, M. C. Dietze, A. M. Ellison, S.D. Frey, E. Goldman, T.F. Keenan, J.M. Melillo, J.W. Munger, **K.J. Nadelhoffer**, S.V. Ollinger, D.A. Orwig, N. Pederson, A.D. Richardson, K. Savage, J. Tang, J.R. Thompson, C.A. Williams, S.C. Wofsy, Z. Zhou, D.R. Foster. 2020. Carbon budget of the Harvard Forest Long-Term Ecological Research site: pattern, process, and response to global change. *Ecological Monographs* 90(4):e01423. [10.1002/ecm.1423](https://doi.org/10.1002/ecm.1423)

NOTE: Underlined Italics = PhD Advisee; Underlined = postdoctoral advisee;
Italics = served as PhD committee member, * = undergraduate author/co-author

Manuscripts Submitted, in Review, or in Revision:

Published Data Sets:

1. Wieder, W.R., D. Pierson, S.R. Earl, K. Lajtha, S. Baer, F. Ballantyne, A.A. Berhe, S. Billings, L.M. Brigham, S.S. Chacon, J. Fraterrigo, S.D. Frey, K. Georgiou, M. de Graaff, A.S. Grandy, M.D. Hartman, S.E. Hobbie, C. Johnson, J. Kaye, E. Snowman, M.E. Litvak, M.C. Mack, A. Malhotra, J.A.M. Moore, **K. Nadelhoffer**, C. Rasmussen, W.L. Silver, B.N. Sulman, X. Walker, and S. Weintraub. 2020. SOils DAta Harmonization database (SoDaH): an open-source synthesis of soil data from research networks ver 1. Environmental Data Initiative.
<https://doi.org/10.6073/pasta/9733f6b6d2ffd12bf126dc36a763e0b4> (Accessed 2020-07-16).

Published Books and 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. Morriveau, 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.** 2007. 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.
23. **Nadelhoffer, K. J.** 2008. The impacts of nitrogen deposition on forest ecosystems. Chapter 14 *in*: R. F. Follett and J. L. Hatfield (eds.), *Nitrogen in the Environment: Sources, Problems, and Management*. Elsevier Science, Amsterdam.
24. **Nadelhoffer, K.J.** 2009. The future and the Biological Station. Chapter 21 *in*: K.J. Nadelhoffer et al. (eds.), *The Changing Environment of Northern Michigan: A Century of Science and Nature at the University of Michigan Biological Station*. University of Michigan Press. 224 pages.
25. Pardo, L.H, and **K.J. Nadelhoffer**. 2010. Using nitrogen isotope ratios to assess terrestrial ecosystems at regional and global scales. Chapter 11 *in*: J.B. West et al. (eds.), *Isoscapes: Understanding movement, pattern, and process on Earth through isotope mapping*, Springer pp. 221-249. https://doi.org/10.1007/978-90-481-3354-3_11
26. Shaver, G.R. J.A. Laundre, M.S. Bret-Harte, F.S. Chapin, III, A.E. Giblin, L. Gough, S.E. Hobbie, G.W. Kling, M.C. Mack, J.C. Moore, **K.J. Nadelhoffer**, E.B. Rastetter, J.P. Schimel. 2014. Terrestrial Ecosystems at Toolik Lake, Alaska. Chapter 5 *in*: J.E. Hobbie and G.W. Kling (editors). *Alaska's Changing Arctic: Ecological Consequences for Tundra, Streams, and Lakes*. Oxford University Press.
27. Pardo, L. H., M. J. Robin-Abbott, M. E. Fenn, C. L. Goodale, L. H. Geiser, C. T. Driscoll, E. B. Allen, J. S. Baron, R. Bobbink, W. D. Bowman, C. M. Clark, W. D. Bowman, B. Emmett, F. S. Gilliam, T. L. Greaver, S. J. Hall, E. A. Lilleskov, L. L. Liu, J. A. Lynch, **K. J. Nadelhoffer**, S. J. Perakis, J. L. Stoddard, K. C. Weathers, and R. L. Dennis. 2015. Effects and Empirical Critical Loads of Nitrogen for Ecoregions of the United States. Chapter 5 *in*: W. DeVries, J.P. Hettelingh, and M. Posch (editors). *Critical Loads and Dynamic Risk Assessments: Nitrogen, Acidity and Metals in Terrestrial and Aquatic Ecosystems*. Springer, Dordrecht https://doi.org/10.1007/978-94-017-9508-1_5

Books and Edited Volumes:

1. **Nadelhoffer, K.J.**, A.J. Hogg, and B. Hazlett (*editors*). 2010. *The Changing Environment of Northern Michigan: A Century of Science and Nature at the University of Michigan Biological Station*. University of Michigan Press. 224 pages.

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 and Governing the 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-authors: **K.J. Nadelhoffer**, one of 20 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, **Knut Nadelhoffer**, Donald Wuebbles. Plus 21 contributing authors.
7. *Impacts of Climate Change on Biodiversity, Ecosystems, and Ecosystem Services | Technical Input to the 2013 National Climate Assessment: Chapter 3. Impacts of Climate Change on Ecosystem Structure and Functioning*. 2013. Convening Lead Authors: Nancy B. Grimm, F. Stuart Chapin III. Lead Authors: Britta Bierwagen, Patrick Gonzalez, Peter M. Groffman, Yiqi Luo, Forrest Melton, **Knut Nadelhoffer**, Amber Pairis, Peter Raymond, Josh Schimel, Craig E. Williamson.
8. Burton, G.A., **K.J. Nadelhoffer**, and K. Presley. 2013. Hydraulic fracturing in the state of Michigan: Environment/ecology technical report. Volume II, Report 4, University of Michigan. Online at <http://graham.umich.edu/media/les/HF-04-Environment-Ecology.pdf>.
9. Handler, S. M. Duveneck, L. Iverson, E. Peters, Emily R. Scheller, K. Wythers, L. Brandt, P. Butler, M. Janowiak, C. Swanston, A.C. Eagle, J. Cohen, R. Corner, P. Reich, T. Baker, S. Chhin, E. Clark, D. Fehring, J. Fosgitt, J. Gries, K. Hall, C. Hall, R. Heyd, C. Hoving, I. Ibanez, D. Kuhr, S. Matthews, J. Muladore, **K. Nadelhoffer**, D. Neumann, M. Peters, A. Prasad, M. Sands, R. Swaty, L. Wonch, J. Daley, M. Davenport, M. Emery, G. Johnson, L. Johnson, D. Neitzel, A. Rissman, C. Rittenhouse, R. Ziel. 2014. Michigan forest ecosystem vulnerability assessment and synthesis: a report from the Northwoods Climate Change Response Framework. Gen. Tech. Rep. NRS-XX. Newtown Square, PA; U.S. Department of Agriculture, Forest Service, Northern Research Station.

Outreach and Public Media:

- October 17, 2003. WUOM (Michigan Public Radio)- Interviewed on “Stateside” (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.
- Fall 2003. **Nadelhoffer, Knute J.**, 2003. “*Biological Station is a hotspot for global change research*”, University of Michigan LSA Magazine, Fall 2003, pp 7-10.
- Fall 2005 Hogg, Alan, Robert Vande Kopple, and **Knut Nadelhoffer**. 2005. *Focus on Field Stations: The University of Michigan Biological Station*. Bulletin of the Ecological Society of America, 86:49-56.
- Apr 6, 2008 “*Climate Change in the Great Lakes Region*”, Climate Change Panel (UM Development Event, with Andy Hoffman and Joyce Penner), Steelcase Headquarters, Grand Rapids, MI

- June 2, 2008 “U-M’s campus in the north woods celebrates centennial session” UM News Service; Article at <http://www.ns.umich.edu/htdocs/releases/story.php?id=6591>
Video at <http://www.ns.umich.edu/podcast/video.php?id=346>
- Jan-Dec 2008 Initiated and commissioned an oral history entitled "*The University of Michigan Biological Station: One Hundred Years of Discovery & Community*", a 6-hour, 4 disc DVD (Major contributions and editing by Joan Hawxhurst, Lisa Pappas, Karie Slavik)
- Apr. 9, 2008 Science Café presentation (with Guy Meadows) “*People and the Poles*”, at Connor O’Neill’s Traditional Irish Pub, Ann Arbor, MI
- May 16, 2008 “*Climate Changes at the Poles and at Home: Choices for Alternative Futures*” North Central Michigan College, invited presentation, Petoskey, MI
- Oct 15-16, 2009 Filming for Big Ten Network “Out of the Blue” Episode #201. Aired on BTN Fall 2009 – Winter 2010. On line at <http://www.ootb.tv/episode.php?episode=201&part=1&video=BioStation>
- Feb 22, 2010 “*Climate Change and Great Lakes Forests*” Invited Presentation at the Midwest Climate Change Workshop/US Global Climate Change Research Program. Chicago.
- March 31, 2011 ESA Podcast “*Ecologist Goes to Washington*” <http://www.esa.org/egwash/?p=197>
- Sept 9, 2013 Webinar discussion co-leader (with Sara Gossman, U-M Law School and Brian Ellis, U-M Dept. of Civil & Environmental Engineering). Graham Sustainability Institute Integrated Assessment Technical Reports “Hydraulic Fracturing in Michigan” http://www.youtube.com/watch?feature=player_embedded&v=qabJf3p4qjI
- Nov 15, 2013 "*Climate Change and Impacts: Evidence-based Decision Making in a Belief-based World*", Keynote address at Loyola University (Chicago) Conference- U.S. ENERGY AND CLIMATE CHANGE: SCIENCE, ETHICS, & PUBLIC POLICIES. See <http://www.luc.edu/theology/intellectuallife/usenergyandclimatechange/>
video at: <https://webapps.luc.edu/ignation/video-detail.cfm?id=1472094516>
- Nov 20, 2013 Science Café: *The Future of Fracking in Michigan*. Connor O’Neill’s Traditional Irish Pub, Ann Arbor Michigan. One of three panelists. My role was to summarize information about risks to freshwater and terrestrial ecosystems as posed by increased fracking activity in Michigan
- Feb 5, 2014 Webinar discussion co-leader (with Dr. Brenda Ekwurzel, UCS Climate Scientist and Aaron Huertas, UCS Press Secretary) “*Communicating with Confidence: Dealing with Uncertainty*” hosted by the [Union of Concerned Scientists](http://www.unionofconcernedscientists.org). Webinar at <https://www.youtube.com/watch?v=HKBsQ-jfjQc&feature=youtu.be>
- Mar 26-27, 2014 Co-Organizer (with Professor Don Waller, U-Wisconsin Madison and Howard Learner, Director and CEO of the Environmental Law and Policy Center), *Science-Policy Confluence Conference: Great Lakes Water Levels*, Ann Arbor, MI
- Sept 4, 2014 Invited Presentation, “Straits of Mackinac Contaminant Release Scenarios”, Mackinac Island Town Hall Meeting on Enbridge Pipeline #5.
- Mar 27, 2015 Co-Organizer with Professors Don Waller (U-Wisconsin Madison and Donald Scavia (University of Michigan) and Howard Learner (Director and CEO, Environmental Law and Policy Center), *Science-Policy Confluence Conference: Great Lakes Nutrient Management and Water Quality*
- Mar 28, 2015 Invited Speaker and panelist, UM Climate Teach-In +50. Talk entitled, “Planning for Climate Change: Evidence-based Decision Making in a Belief-based World”

- July 8, 2015 PBS News Hour segment: “Are Michigan’s pristine lakes at risk from aging pipelines?” Video link- <https://youtu.be/KvknnIn23GU>
- Sept 23, 2015 “On climate change, listen to Pope Francis”, Detroit Free Press, Guest Editorial co-authored with Father Charles Morris (Madonna University, Livonia, Michigan) <http://www.freep.com/story/opinion/contributors/2015/09/23/climate-change-listen-pope-francis/72661722/>
- April 8, 2016 Web video on Michigan climate change with Professors Phil Myers and Don Scavia at <http://naturechange.org/2016/04/08/climate-change-bringing-weather-on-steroids/>
- May 11-12, 2016 Co-Organizer with Professor Nancy Tuchman (Loyola University) and Howard Learner (Director and CEO, Environmental Law and Policy Center), *Science-Policy Confluence Conference- Preventing and Mitigating Great Lakes Invasive Species: the role of Nutrient Loadings*, Chicago, Illinois.
- July 2017 Invited journal editorial: Nadelhoffer, K. J. (2017). [What’s to do?](https://doi.org/10.1007/s10533-017-0335-8) *Biogeochemistry*. <https://doi.org/10.1007/s10533-017-0335-8> (>1.3K downloads as of Sept 7, 2019)
- Feb 7, 2018 Moderator- “[A Carbon Price is Right: Harnessing the Market to Drive Down Carbon Emissions](#)” Panel Discussion, sponsored by the Citizens’ Climate Lobby, Ann Arbor Public Library, and the Michigan League of Women Voters. Video [here](#).
- May 1-2, 2018 Co-Organizer with Professor Bradley Cardinale (University of Michigan) and Howard Learner (Director and CEO, Environmental Law and Policy Center) *Science-Policy Confluence Conference Great Lakes Harmful Algal Blooms: Science-based Policy Solutions*, Michigan League, Ann Arbor, Michigan
- June 24, 2018 Radio/Podcast interview with Michael Thomas, host of WVON radio (Chicago) “Greenpreneur Show”. Interactive discussion of climate change in the Great Lakes region and the roles of biological field stations in climate change research. Links at [Sound Cloud Greenpreneur Interview](#) or [Facebook Greenpreneur Interview](#)
- Sept. 6, 2018 Public Presentation, hosted by Citizens’ Climate Lobby- “Our Unfolding Climate Crisis: Causes, Evidence, and Solutions”, North Central Michigan College, Petoskey, Michigan
- Mar 28-29, 2019 Co-Organizer with ELPC staff and introductory speaker, *Science-Policy Confluence Conference: Understanding and Addressing Climate Change Impacts on the Great Lakes*, Northwestern Institute for Sustainability & Energy, Northwestern University, Chicago, Illinois
- June 6, 2019 Public Presentation, “Confronting our Emerging Global Climate Crisis in Northern Michigan”, University of Michigan Biological Station, Pellston, Michigan. Available at [Confronting Our Climate Crisis 2019](#) and <https://youtu.be/cq51VPJo1rk>
- June 26, 2019 Keynote Speaker, presentation entitled “Climate Breakdown in Michigan” and panelist at *Answering the Call: An Interfaith Response for Climate Action*, sponsored by the Michigan chapter of [Interfaith Power and Light](#), Bay View, Michigan

Government Relations & Testimonies:

- Apr 22, 2009 Biological-Ecological Science Consortium, Congressional Visits Day Representative. Met with Rep Bart Stupak (D MI 1st) and Senator Richard Durbin (D-IL) and staffers of Rep. John Dingell (D-MI 15th) and Senator Debbie Stabenow (D-MI)

- Nov 3, 2009 Union of Concerned Scientists. Senate Climate Change Visit. Met with staff members from Senators Stabenow (D-MI) and Levin (D-MI) regarding science behind pending climate change legislation in the US Senate
- Apr 22, 2010 Biological-Ecological Science Consortium, Congressional Visits Day Representative. Met with staffers from offices of Reps Bart Stupak (D MI 1st), John Dingell (D-MI 15th) and Senator Debbie Stabenow (D-MI), and staffers from Ohio Rep and Senate offices.
- Apr 31, 2011 Biological-Ecological Science Consortium, Congressional Visits Day Representative. Met with staffers from offices of Reps Dan Benishek (R MI 1st), John Dingell (D-MI 15th) and Senator Debbie Stabenow (D-MI)
- March 8, 2011 US House of Representatives Testimony: House Energy and Commerce Committee hearing on Climate Science and EPA's Greenhouse Gas Regulations. Written and oral testimony at <http://energycommerce.house.gov/hearings/hearingdetail.aspx?NewsID=8304>
- Feb 27, 2012 Invited participant, Union of Concerned Scientists Workshop: "In the Arena-Communicating Science in the Public and Policy Sphere", Washington DC\
- Feb 28, 2012 Congressional Visits to offices of Senators Debbie Stabenow (Matt Van Kuiken) and Carl Levin (Tia Sutton) to discuss EPA's regulatory authority to regulate greenhouse gas and mercury emissions.
- Feb 29, 2012 Invited attendee, "White House Community Leaders Briefing on the Great Lakes Region", Washington, DC
- Feb 9-10, 2016 Ecological Society of America delegate, Congressional Climate Science Day, Washington DC. Visited offices of Senators Debbie Stabenow (D-MI), Gary Peters (D-MI), Joe Donnelly (D-IN), Dan Coates (R-IN), and Congressman Benishek (R-MI 1st) and Larry Bucshon (R-IN 8th).
- Oct 23-24, 2017 Association of Ecosystem Research Centers/AIBS Congressional Briefing, "The Role of Ecosystem Research in Combating Emerging Infectious Diseases", attendee. Plus visits with Senator Gary Peters (D-MI) and Representative Jack Bergman (R- MI 1st District), and staff members of Senator Debbie Stabenow (D-MI) and Representative John Moolenaar (R-MI 4th District) to discuss Great Lakes Protection and climate change actions.

Reviewer for:

Arctic, Antarctic and Alpine Research
 Austrian Science Fund
 Biogeochemistry
 Canadian Journal of Forest Research
 Ecology
 Ecological Applications
 Ecological Monographs
 Écoscience
 Ecosystems
 Environmental Science and Technology
 Forest Science
 Forest Ecology and Management

Global Biogeochemical Cycles
 Global Change Biology
 Journal of Environmental Biology
 Journal of Environmental Quality
 Oecologia (Editorial Board 1995 - 2001)
 Nature
 Plant and Soil
 Plant Ecology & Diversity
 PLOS One
 Science
 Soil Biology and Biochemistry
 Soil Science Society of America Journal

Tree Physiology	USDA Forest/Rangeland/Crop Ecosystem
NSF Ecology Program	Program
NSF Ecosystems Studies Program	USDA Soils and Soil Biology Program
NSF Field Stations and Marine Labs Program	NASA/DOE/NOAA/USDA Carbon Cycle
NSF Physiological Ecology Program	Science Program
NSF Research Coordination Network	NASA Earth Observing System
NSF Conservation and Restoration Biology	NASA BOREAS Program
USDA Competitive Grants in Forest Biology	

Program Reviews:

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

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

Program Reviewer for the German DFG Research Unit "Competitive Mechanisms of Partitioning of Water and Nitrogen in Beech-Dominated Deciduous Forests", Freiburg, Germany (March 9-10, 2006)

Expert Reviewer, Intergovernmental Panel on Climate Change, Fourth Assessment Report (IPCC, AR4), Working Group 2 Report, "Impacts, Adaptation and Vulnerability", 2007

Expert Reviewer, U.S. EPA. Integrated Science Assessment (ISA) for Oxides of Nitrogen and Sulfur – Ecological Criteria (Final Report). EPA/600/R-08/082F, 2008. Review workshop, Research Triangle Park, NC (17-19 July 2007)

External Reviewer, EPA-ORD, Pollutant Specific Studies: Nitrogen Regulation Services Implementation Plan, (April 2009)

Program Reviewer, Plant Biology Program, Swedish Agricultural University, Uppsala, Sweden, (May 5-8, 2009)

Expert Reviewer, Intergovernmental Panel on Climate Change (IPCC), First Order Draft of the IPCC Special Report on Climate Change and Land (SRCCL), 2018

Expert Reviewer, Intergovernmental Panel on Climate Change (IPCC), Second Order Draft of the IPCC Special Report on Climate Change and Land (SRCCL), 2019

Expert Reviewer, Intergovernmental Panel on Climate Change (IPCC), Second Order Draft of the IPCC Working Group I contribution to the Sixth Assessment Report (AR6), 2020

Review Panels:

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).

NSF Ecosystem Studies Review Panel (1998 - 2002)

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

Panel Reviewer for NSF Field Station and Marine Laboratory Facilities Program (June 18-20, 2008)

Site Reviewer for the Taylor Ranch Wilderness Field Station, University of Idaho (Oct 6-9, 2008)

Panel Reviewer for U.S. Dept. of Energy. Early Career Research Program for DOE Office of Biological and Environmental Research (BER), 2012

Panel Reviewer for NASA/DoE/NOAA/USDA Carbon Cycle Science Program, 2013

Panel Review for NSF Field Station and Marine Lab Facilities Program, 2014

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 ¹⁵N-tracer experiments in forest ecosystems" given at Universität Bayreuth, Germany (January 24, 1991)

Invited seminar: "The use of ¹⁵N 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)
- Invited seminar, “Carbon Capture by Forests” Department of Environmental Science, Allegheny College Meadville, PA. Sept. 8, 2008
- Invited presentation, “Long-term movements of ¹⁵N-labelled ammonium and nitrate additions to oak and pine forest plots constrain estimates of C sequestration resulting from atmospheric N deposition” BioGeomon International Conference. Helsinki, Finland. June 30, 2009.
- Invited presentation, “DIRT: An international collaboration to characterize controls on forest soil organic matter balances” Debrecen University, Dept. of Ecology. Debrecen, Hungary. July 6, 2009
- Invited presentation “Decadal-scale ¹⁵N Tracer Recoveries Constrain N Deposition as a Driver of Forest C Sinks” Distinguished Ecologist Lecture, Michigan Technological University. Houghton, MI. October 12, 2009
- Invited presentation “Climate Change and Great Lakes Forests” Midwest Climate Change Workshop/US Global Climate Change Research Program. Chicago Feb 22-24, 2010
- Invited presentation “Fate of ¹⁵N tracers added to hardwood and pine stands at the Chronic Nitrogen Amendment Experiment” Harvard Forest LTER Annual Meeting. Petersham, MA. March 16, 2010.
- Invited panelist, Biogeochemical Cycling of Carbon and Other Greenhouse Gases Session, at the EPA Workshop on “Interacting Effects of Climate and Nitrogen on Ecosystems and their Services” Oct. 12-13, 2010, Potomac Yards Conference Center, Arlington, VA
- Invited seminar, “Disturbance, decoupling and resilience of carbon and nitrogen cycles in aggrading forest ecosystems” University of South Florida, Tampa FL. March 11, 2011
- ESA Symposium “Disturbance and decoupling of belowground carbon and nitrogen cycles in a northern temperate forest” Ecological Society of America, Annual Meeting, Austin, Texas, August 10, 2012
- Invited Presentation “Decoupling of Forest Carbon and Nitrogen Cycles in a Succession Manipulation Experiment” Systems Ecology Symposium, University of Copenhagen, May 2, 2012.
- Keynote Address, “Engaging Decision Makers to Support Protection and Restoration of Ecosystems in the Great Lakes Basin”, Symposium title, *The Ecology-Policy Interface: Perspectives On Student Engagement*. Ecological Society of America Annual Conference, Minneapolis, MN. Aug. 5, 2013.
- Invited keynote, "Climate Change and Impacts: Evidence-based Decision Making in a Belief-based World", Conference- *U.S. Energy And Climate Change: Science, Ethics, & Public Policies*. Loyola University (Chicago). November 15, 2013.
Conference: <http://www.luc.edu/theology/intellectuallife/usenergyandclimatechange/>
Presentation at: <https://webapps.luc.edu/ignation/video-detail.cfm?id=1472094516>
- Invited Talk, “Detritus Inputs & Forest Soil Organic Matter Formation: Is There a Linear Relationship Between Detrital Input Rates and Soil Carbon Accumulation?” *The Evolution of Forest Soil Science: Perspectives and Prospects*, Soil Science Society of America Annual Meeting, Long Beach, CA. November 13, 2014
- Invited keynote, “Planning for Climate Change: Evidence-based Decision Making in a Belief-based World”, *Teach-In +50: End the War Against the Planet*. University of Michigan, March 27, 2015

Presentation at: http://sites.lsa.umich.edu/teach-in-50/wp-content/uploads/sites/228/2015/04/UM-Teach-In_20150327-Nadelhoffer.pdf

Invited keynote, “*Looking Back to Move Ahead: Retrieving, resurrecting & disseminating historical data to inform / What’s to do? long-term research*”. NSF Long-term Ecological Research Program, All Scientists Meeting (LTER-ASM), September 1, 2015, Estes Park, CO

Invited Talk, “Using ¹⁵N Tracers to Assess Impacts of Atmospheric Nitrogen Deposition on the Global Carbon Cycle”, University of Copenhagen, Denmark. May 8, 2017

University of Michigan Presentations:

Invited panelist, “Putting a Face on the NSF Review Process” UM LSA CAREER Workshop for Assistant Professors, March 19, 2010

Invited Presentation “Assessing Ecosystem Functioning in a Rapidly Changing World: The Great Lakes Basin as Living Laboratory for Integrated Sustainability Studies” University of Michigan, OVPR Directors Council on Energy & Sustainability, April 14, 2011

Invited speaker, “Climate Change – Science and Impacts” Energy Law and Climate Change Policy Seminar. University of Michigan Law School. One lecture-discussion in fall terms of 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018

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 ¹⁴C 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)

Invited symposium America Symposium entitled, “*Evolution of Forest Soil Science: Perspectives and Prospects-1*” Presentation title: “Detritus Inputs and Forest Soil Organic Matter Formation: Is There a Linear Relationship Between Detrital Input Rates and Soil Carbon Accumulation?” Soil Science Society of November 3, 2014, Long Beach, CA

Invited workshop participant: “*Advancing Soil Organic Matter Research: Synthesizing Multi-scale Observations, Manipulations and Models*”, National Center for Ecological Analysis and Synthesis, March 6-9, 2018, Santa Barbara, CA.

Recent Presentations (Since 2012)

Bohrer G, Gough CM, Ivanov VI, Maurer KD, Frasson R, Matheny AM, He L, Hardiman BS, **Nadelhoffer KJ**, Vogel CS, Nave LE, Curtis PS. Forecasting carbon stocks in Eastern forests: joining experimental and tree-level modeling approaches to understand structure-function dynamics with ecological succession and disturbance. Poster. 2/2013. 4th NACP All-Investigator Meeting, Albuquerque, NM.

- Curtis PS, Gough CM, Hardiman BS, Nave LE, Bohrer G, Mauer KD, Vogel CS, **Nadelhoffer K.**
Resilience of Great Lakes forest carbon stocks to disturbance and succession. Poster. 2/2013. 4th
NACP All-Investigator Meeting, Albuquerque, NM.
- Gough CM, Hardiman BS, Nave LE, Bohrer G, Maurer KD, Vogel CS, **Nadelhoffer KJ**, Curtis PS.
Defying the decline: Carbon storage resistance to moderate disturbance in a temperate forest.
Poster, 12/2012. American Geophysical Union Meeting 2012. San Francisco, CA.
- Curtis PS, Gough CM, Hardiman BS, Bohrer G, **Nadelhoffer KJ**. Managing Great Lakes forests for
climate change mitigation. Oral presentation, 7/2012. BIOGEOMON 2012: The 7th International
Symposium on Ecosystem Behavior, Northport, ME.
- Nave L.E., Sparks J.P., Le Moine J., Hardiman B.S., **Nadelhoffer K.J.**, Strahm B.D., Curtis P.S.. Soil
inorganic nitrogen cycling during successional change in a northern temperate forest. American
Geophysical Union 2012 Fall Meeting, 5 December 2012.
- Nave L.E., Le Moine J., **Nadelhoffer K.J.**, van Diepen L.T.A., Cooch J.K., Van Dyke N.J. Recent
changes in belowground processes in the Forest Accelerated Succession Experiment (FASET).
University of Michigan Biological Station Winter Research Meeting. 22 February 2013.
- Nave L.E., Swanston C.W., Mishra U., **Nadelhoffer K.J.** Afforestation effects on soil carbon storage in
the United States: meta-analysis, stable isotopes, and a geospatial soil carbon database. ASA-
CSSA-SSSA International Annual Meeting, Cincinnati, 22-24 October 2012.
- Nave L.E., **Nadelhoffer K.J.**, Le Moine J., Hardiman B.S., Sparks J.P., Strahm B.D., Muñoz A.B.†,
Gough C.M., Vogel C.S., Curtis P.S. Disturbance and decoupling of belowground carbon and
nitrogen cycles in a northern temperate forest. American Geophysical Union Fall Meeting, San
Francisco. 7 December 2011
- Nave L.E., Mishra U., **Nadelhoffer K.J.**, Swanston C.W. Afforestation effects on soil carbon storage: An
assessment for the United States based on meta-analysis, stable isotopes, and a geospatial soil
carbon database. BIOGEOMON 2012: 7th International Symposium on Ecosystem Behaviour,
Northport, ME. 15-20 July 2012.
- Nadelhoffer, K.J.**, K. Lajtha, R.D. Bowden, S. Crow. "Detritus Inputs and Forest Soil Organic Matter
Formation: Is There a Linear Relationship Between Detrital Input Rates and Soil Carbon
Accumulation?" Invited talk at Soil Science Society of America Symposium entitled, "Evolution of
Forest Soil Science: Perspectives and Prospects-1", November 3, 2014, Long Beach, CA

Current Awards:

NSF-DEB-1856319	<i>LTREB Renewal: Drivers of temperate forest carbon storage from canopy closure through successional time</i> May 1, 2019 – April, 2024	\$594,691
Dept. of Energy Carbon Cycle Research Program (subcontract from Ohio State U.)	<i>"UM Biological Station AmeriFlux Core Site Project"</i> UM PI: K. Nadelhoffer October 1, 2016 to September 30, 2020 (renewable thereafter)	\$565,902
Internal UM (Provost & LSA)	<i>"Field-based Student Engagement and the Academy: A UM Main Campus-UM Biological Station Initiative"</i> PI: K. Nadelhoffer January 2016 – December 2020	\$1,977,700

Internal UM (President's Biosciences Initiative)	<i>"Institute for Global Change Biology: A Nexus for Interdisciplinary Global Change Research"</i> PI: A. Burton Co-PIs: I. Ibáñez, K. Nadelhoffer, A. Steiner January 2016 – December 2020	\$1,124,000 (Yr 1 of a multi-year award)
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Past Awards:

NSF-DEB-1353908	LTREB: Drivers of temperate forest carbon storage from canopy closure through successional time Feb 1, 2014 – March 31, 2019	\$448,585
NSF-DEB-1127250	"Collaborative Research: Linking the chemical structure of black carbon to its biological degradation and transport dynamics in a northern temperate forest soil" October 1, 2011– September 30, 2017	\$583,230
Dept. of Energy Carbon Cycle Res. Prog. (subcontract from Ohio State U.)	<i>"UM Biological Station AmeriFlux Core Site Project"</i> UM PI: K. Nadelhoffer April 18, 2014 to September 30, 2016 (renewable thereafter)	\$334,523
University of Michigan OVPR	"Mercury Biogeochemistry in Michigan Lakes" M-Cubed Award with J.D. Blum (Earth & Environmental Sciences) and J. Dvonch (UM School of Public Health). 2013 – 2014	
DOE Terrestrial Carbon Cycle Research Prog. (subcontract from The Ohio State Univ.)	"Forecasting Carbon Storage as Eastern Forests Age: Joining Experimental and Modeling Approaches at the UMBS AmeriFlux Site" Aug 15, 2011– Aug 14, 2014	\$419,601
NSF-DIG-1110494	"Earthworm invasions as drivers of soil carbon sequestration in north temperate forests" NSF Dissertation Improvement Award. June 1, 2011 – May 31, 2013	\$15,000
NSF-DEB-0947329 (Educational Supplement)	Supplement: Combined Use of ¹⁵ N Natural Abundances and Tracers to Elucidate Above- and Belowground C and N Cycle Linkages July 8, 2010 – August 31, 2013	\$11,320
NSF-DEB-0947329	"Combined Use of ¹⁵ N Natural Abundances and Tracers to Elucidate Above- and Belowground C and N Cycle Linkages" September 1, 2009 – Aug 2013	\$311,271
NSF-1122354	"Workshop: Freshwater Advanced Aquatic Sensor Workshop: Sensors, Platforms and Data Management" May 1, 2011 – April 30, 2012	\$44,021
DOE-#Battelle Subc 4000067426	"Enhanced Background Isotope Study (EBIS)" February 28, 2008 – December 31, 2012	\$40,000

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 – May 31, 2012	\$1,198,140
USDA-Forest Service F025916	“Literature synthesis and meta-analysis of soil carbon changes with afforestation” August 25, 2010 – December 2011	\$20,395
NSF- DEB-0821083	“GROUP TRAVEL: Support for US MAB Reserve Representation at the 3rd World Congress of Biosphere Reserves, Madrid Spain, 2008.” February 1, 2007 – January 31, 2010	\$39,000
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
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-OPP-9911681	“Developing Process-Level Understanding of Controls on Belowground Carbon and Nutrient Dynamics in Tundra Ecosystems.” PI: K. Nadelhoffer (2000 – 2002), G. Kling (2003 – 2007, after Nadelhoffer became NSF program officer). Nadelhoffer was Co-PI from 2003 – 2007	\$2,074,085
U of Michigan OVPR	“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 Templer, Michelle Mack, Knute Nadelhoffer August 2004 – June 2006	\$69,000
U of Michigan OVPR	“A Proposal to Plan a Great Lakes Regional Ecological Observatory” PI- K. Nadelhoffer. 2004-2006	\$40,000

NSF-DEB-0089585	<p>“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)</p>	\$1,088,392
USDA-01-CA-11242343-051	<p>“Predicting the Influence of N Deposition on Temperate Forest Carbon Uptake and Storage Using ¹⁵N Tracers and Modeling” September 1, 2001 – August 31, 2004 PI: Nadelhoffer (until June 2002, C. Neill at MBL after Nadelhoffer was NSF Program Officer)</p>	\$73,182
NSF-DEB 9815990	<p>“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)</p>	\$744,506
NSF-DEB 9411975	<p>“Harvard Forest Long-Term Ecological Research Program, Forest Ecosystem Dynamics in central New England.” PIs: J. Melillo, K. Nadelhoffer, P. Steudler 1995 - 2001 (1 month/yr)</p>	\$746,130
Harvard/DOE USDA DE-FC03-90ER61010	<p>“Human Influences on Forest Nitrogen Budgets and their Implications for Forest Carbon Storage.” PIs: J. Melillo, K. Nadelhoffer, P. Steudler. 1998 –2001 (1 month/yr)</p>	\$489,500
NSF/NASA/EPA-OPP-9904392	<p>GCTE Conference: “How Nutrient Cycles Constrain Carbon Balances in Boreal Forests and Arctic Tundra” PI: K. Nadelhoffer. 1999 –28, 2000 (0.5 months/yr)</p>	\$25,090
NSF-OPP 9904392 (symposium proposal)	<p>“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)</p>	\$25,000
NSF-OPP 9615563	<p>“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 1997- 2000 (2.5 months/yr)</p>	\$742,776
NSF-OPP 9619942	<p>“Belowground C Sources and Sinks in Arctic Tundra Ecosystems” PIs: K. Nadelhoffer, L. Johnson (Kansas State), G. Kling (U. Mich.), W. Reeburgh (UC-Irvine) 1997- 1999 (3 months/yr)</p>	\$478,000
USDA 95-37101-1879	<p>“Influences of above-and belowground litter on forest soil organic matter dynamics” PI: K. Nadelhoffer 1995 - 1999 (2.5 months/yr)</p>	\$316,000
NSF-DEB-9408794	<p>“Predicting forest N dynamics using ecosystem-scale ¹⁵N tracers” PI: K. Nadelhoffer 1994 - 1999 (3 months/yr)</p>	\$410,000

US DOE	"Atmosphere-biosphere feedback mechanisms in a forest setting" (continuation). PIs: J. Melillo, K. Nadelhoffer, P. Steudler. 1995 – 1998(1 month/yr)	\$155,700
NSF-OPP 9024188	"The Arctic LTER Project: Terrestrial and freshwater research of ecological controls" PI: J. Hobbie, Co-PIs B. Fry, A. Giblin, K. Nadelhoffer, B. Peterson, E. Rastetter, G. Shaver September 1992 - August 1998	\$3,907,500
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. 1991 - 1996	\$1,246,358
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	\$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. 1990 - 1995	\$1,321,845
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, P. Steudler October 1988 - September 1994 (1 month/yr),	\$496,583

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
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
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

Wales, S. B., M. R. Kreider, J. Atkins, C. M. Hulshof, R. T. Fahey, L. E. Nave, K. J. Nadelhoffer, and C. M. Gough. 2020. Stand age, disturbance history and the temporal stability of forest production. *Forest Ecology and Management* **460**:117865.