

WILLIAM S. CURRIE

Curriculum Vitae

University of Michigan, School of Natural Resources and Environment
Dana Building, 440 Church St., Ann Arbor, MI 48109-1041

phone: (734) 647-2453
fax: (734) 615-1277

email: wcurrie@umich.edu
web: <http://www-personal.umich.edu/~wcurrie/>

Education

- Ph.D.* Natural Resources, University of New Hampshire Institute for the Study of Earth, Oceans and Space, 1995. Dissertation: *Forest Floor Leachate Biogeochemistry and Decomposition Dynamics*.
- M.S.* Environmental Sciences, University of Virginia, 1992. Thesis: *Modeling Base Cation Cycles Driven by Forest Dynamics in a Central Appalachian Watershed*.
- B.S.* Physics, Brown University, 1983.

Professional Experience

- 2006 - *Associate Professor* (Ecosystem Modeling), University of Michigan School of Natural Resources & Environment.
- 2003-06 *Assistant Professor* (Ecosystem Modeling), University of Michigan School of Natural Resources & Environment.
- 1997-2003 *Assistant Professor* (Forest Ecology & Biogeochemistry), University of Maryland Center for Environmental Science.
- 1995-97 *Visiting Postdoctoral Scholar*, The Ecosystems Center, Marine Biological Laboratory, Woods Hole, MA.
- 1991-95 *Project Research Assistant*, Complex Systems Research Center, University of New Hampshire.
- 1989-91 *Graduate Research Assistant* and *Graduate Teaching Assistant*, Department of Environmental Sciences, University of Virginia.
- 1984-86 *Senior Scientist II*, Booz, Allen & Hamilton, Applied Sciences Center, Bethesda, MD.
- 1983-84 *Systems Engineer*, Rockwell International, Space Shuttle Orbiter Div., Downey, CA.

Affiliations and Awards

Ecological Society of America
Stockholm Water Symposium Best Poster
Award, 2001 (3rd coauthor)

Sigma Xi Dissertation Research Award,
1995
NASA Training Grant Fellowship, 1991 –
1995

Grant Experience

Spatial Land-Use Change and Ecological Effects: Interactions of Exurban Land Management and Carbon Dynamics. NSF Coupled Natural-Human Systems Program. \$1,500,000. Co-Principal Investigator. 9/1/08 – 8/31/12.

Modeling linkages among forest ecology, management, and biogeochemistry in Great Lakes forests. U.S.D.A. McIntire-Stennis Program. \$60,000. 10/1/06 – 9/30/08. Principal Investigator.

Modeling the trajectories of forest carbon storage in the Great Lakes region based on interactions among global change, forest history, and management. U.S.D.A. McIntire-Stennis Program. \$59,928. 2004-2006. Principal Investigator.

Alcoa Foundation Conservation and Sustainability Fellowship Program: Enabling Technology for a Sustainable Energy Future Through Interdisciplinary Research and Training. Alcoa Foundation. \$844,000. 11/1/05-10/31/10. Co-Principal Investigator.

Collaborative Research: Effects of elevated CO₂ on forest N cycling: Assessment with large-scale ¹⁵N tracers and modeling. National Science Foundation, Ecosystems Program. \$790,000. 1/1/03-2/28/07. Co-Principal Investigator.

Effects of N deposition on forest C balance: long-term responses at stand and regional scales. National Science Foundation, Ecosystems Program. \$639,999. 1999-2003. Co-Principal Investigator.

Predicting the influence of N deposition on temperate forest carbon uptake and storage using ¹⁵N tracers and modeling (1). U.S.D.A. Forest Service NERC Program. \$71,818. 2001-2004. Principal Investigator.

Predicting the influence of N deposition on temperate forest carbon uptake and storage using ¹⁵N tracers and modeling (2). U.S.D.A. Forest Service NERC Program. \$33,200 subcontract from Marine Biological Laboratory. 2002-2004. Principal Investigator on subcontract.

The role of forest-floor nitrogen leaching in ecosystem N retention. U. S. Department of Agriculture, National Research Initiative Competitive Grants Program. \$80,000. 1995-1997. Principal Investigator.

Research Opportunities and Collaboration in the Appalachians. Andrew W. Mellon Foundation. \$414,000. 1999-2001. Senior Personnel (non-co-PI).

Research Opportunities and Collaboration in the Appalachians, Renewal. Andrew W. Mellon Foundation. \$431,751. 2001-2003. Senior Personnel (non-co-PI).

Assessment of forest disturbance in the Mid-Atlantic region: A multi-scale linkage between terrestrial and aquatic ecosystems. Environmental Protection Agency, NCERQA. \$697,834. 1998-1999. Senior Personnel (non-co-PI).

A general framework for debiting / crediting carbon sequestration in natural resource industries. Environmental Protection Agency. \$100,000. 1998-1999. Senior Personnel (non-co-PI).

Publications in Primary Literature

Currie, W. S., M. E. Harmon, I. C. Burke, S. C. Hart, W. J. Parton, and W. Silver. Cross-biome transplants of plant litter reveal both extension and limitation of the climate-litter quality paradigm to predict rates of decomposition. *Global Change Biology*, *In review*.

Harmon, Mark E., Whendee L. Silver, Becky Fasth, Hua Chen, Ingrid C. Burke, William J. Parton, Stephen C. Hart, William S. Currie, and LIDET. Long-term patterns of mass loss during

- the decomposition of leaf and fine root litter: An intersite comparison. *Global Change Biology, In review.*
- Shaked, Shanna and W. S. Currie. Temperature and evapotranspiration drive seasonal patterns of entropy production in a temperate forest ecosystem. *Ecological Complexity, In review.*
- Simmons, J. A., W. S. Currie, K. N. Eshleman, K. Kuers, S. Monteleone, T. L. Negley, B. R. Pohlad, and C. L. Thomas. 2008. Forest to reclaimed mine land use change leads to altered ecosystem structure and function. *Ecological Applications* 18:104-118.
- Parton, William, Whendee L. Silver, Ingrid Burke, Leo Grassens, Mark E. Harmon, William S. Currie, Jennifer King, E. Carol Adair, Leslie Brandt, Steve Hart, and Becky Fasth. 2007. Global-Scale Similarities In Nitrogen Release Patterns During Long-Term Decomposition. *Science* 315: 361-364.
- Seidl, R., W. Rammer, D. Jäger, W. S. Currie and M. J. Lexer. 2007. Assessing trade-offs between carbon sequestration and timber production within a framework of multi-purpose forestry in Austria. *Forest Ecology and Management* 248:64-69.
- Castro, Mark S., Keith N. Eshleman, Louis F. Pitelka, Geoff Frech, Molly Ramsey, William S. Currie, Karen Kuers, Jeffrey A. Simmons, Bob R. Pohlad, Carolyn L. Thomas, and David M. Johnson. 2007. Symptoms of nitrogen saturation in an aggrading forested watershed in western Maryland. *Biogeochemistry* 84:333-348.
- Chastain, Robert A. Jr., W. S. Currie, and P. A. Townsend. 2006. Carbon Sequestration and Nutrient Cycling Implications of the Evergreen Understory Layer in Appalachian Forests. *Forest Ecology and Management* 231: 63-77.
- Johnston, C. A., D. D. Breshears, Z. G. Cardon, W. S. Currie, W. R. Emanuel, J. B. Gaudinski, P. Groffman, R. B. Jackson, K. Lajtha, D. W. Nelson, W. M. Post, G. J. Retallack, R. Stallard, and L. Wielpolski. 2004. The frontier below: Carbon cycling in soil. *Frontiers in Ecology and the Environment* 10:522-528.
- Currie, W. S., K. J. Nadelhoffer, and J. D. Aber. 2004. Redistributions of ¹⁵N highlight turnover and replenishment of mineral soil organic N as a long-term control on forest C balance. *Forest Ecology and Management*, 196:109-127.
- Nadelhoffer, K. J., B. P. Colman, W. S. Currie, A. Magill, and J. D. Aber. 2004. Decadal-scale fates of ¹⁵N tracers added to oak and pine stands under ambient and elevated N inputs at the Harvard Forest (USA). *Forest Ecology and Management*, 196:89-107.
- Magill, A. H., J. D. Aber, W. S. Currie, K. J. Nadelhoffer, M. Martin, W. H. McDowell, J. M. Melillo, and P. Steudler. 2004. Ecosystem response to 15 years of chronic nitrogen additions at the Harvard Forest LTER, Massachusetts, USA. *Forest Ecology and Management* 196:7-28.
- Luo, Y., B. Su, W. S. Currie, J. S. Dukes, A. Finzi, U. Hartwig, B. Hungate, R. McMurtrie, R. Oren, W. J. Parton, D. Pataki, R. Shaw, D. R. Zak, and C. Field. 2004. Progressive nitrogen limitation of ecosystem responses to rising atmospheric carbon dioxide. *BioScience* 54:731-739.

- Yanai, R. D., W. S. Currie, and C. L. Goodale. 2003. Soil carbon dynamics following forest harvest: an ecosystem paradigm reconsidered. *Ecosystems* 6:197-212.
- Currie, W. S. 2003. Relationships between carbon turnover and bioavailable energy fluxes in two temperate forest soils. *Global Change Biology* 9(6):919-930.
- Townsend, P.A., J. R. Foster, R. A. Chastain, Jr., and W. S. Currie. 2003. Application of imaging spectroscopy to mapping canopy nitrogen in forests of the Central Appalachian Mountains using Hyperion and AVIRIS. *IEEE Transactions on Geosciences and Remote Sensing* 41(6):1347-1354.
- Currie, W. S. and K. J. Nadelhoffer. 2002. The imprint of land use history: Patterns of carbon and nitrogen in downed woody debris at the Harvard Forest. *Ecosystems*, 5(5):446-460.
- Currie, W. S., K. J. Nadelhoffer and B. Colman. 2002. Long-term movement of ^{15}N tracers into fine woody debris under chronically elevated N inputs. *Plant and Soil* 238:313-323.
- Wullschlegel, S. D., R. B. Jackson, W. S. Currie, A. D. Friend, Y. Luo, F. Mouillot, Y. Pan, and G. Shao. 2001. Below-ground processes in gap models for simulating forest responses to global change. *Climatic Change* 51:449-473.
- Currie, W. S. and K. Nadelhoffer. 1999. Dynamic redistribution of isotopically labelled cohorts of nitrogen inputs in two temperate forests. *Ecosystems* 2:4-18.
- Currie, W. S. 1999. The responsive C and N biogeochemistry of the temperate forest floor. *Trends in Ecology and Evolution* 14:316-320.
- Currie, W. S., K. Nadelhoffer, and J. D. Aber. 1999. Soil detrital processes controlling the movement of ^{15}N tracers to forest vegetation. *Ecological Applications* 9:87-102.
- Currie, W. S., J. D. Aber, and C. T. Driscoll. 1999. Leaching of nutrient cations from the forest floor: Effects of nitrogen saturation in two long-term manipulations. *Canadian Journal of Forest Research* 29:609-620.
- Moorhead, D., W. S. Currie, E. Rastetter, W. Parton, and M. Harmon. 1999. Climate and litter quality controls on decomposition: An analysis of modeling approaches. *Global Biogeochemical Cycles* 13:575-589.
- 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.
- McDowell, W. H., W. S. Currie, J. D. Aber, and Y. Yano. 1998. Effects of chronic nitrogen amendment on production of dissolved organic carbon and nitrogen in forest soils. *Water, Air and Soil Pollution* 105:175-182.
- Currie, W. S. and J. D. Aber. 1997. Modeling leaching as a decomposition process in humid montane forests. *Ecology* 78:1844-1860.

- Currie, W. S., J. D. Aber, W. H. McDowell, R. D. Boone, and A. H. Magill. 1996. Vertical transport of dissolved organic C and N under long-term N amendments in pine and hardwood forests. *Biogeochemistry* 35:471-505.
- Currie, W. S., J. N. Galloway, and H. H. Shugart. 1996. Watershed base-cation cycle dynamics modeled over forest regrowth in a Central Appalachian ecosystem. *Water, Air and Soil Pollution* 89:1-22.
- Merriam, J., W. H. McDowell, and W. S. Currie. 1996. A high-temperature catalytic oxidation technique for determining total dissolved nitrogen. *Soil Science Society of America Journal* 60:1050-1055.
- Hadjimichael, E., W. S. Currie, and S. Fallieros. 1997. The Thomas-Reiche-Kuhn sum rule and the rigid rotator. *American Journal of Physics* 65:335-341.

Book Chapters and Other Publications

- W. S. Currie and K. Bergen. 2008. Ecosystems: Forest: Temperate. In S. Jorgensen (Ed.), *Encyclopedia of Ecology*. Elsevier.
- Currie, W. S. 2007. Modeling the dynamics of stable-isotope ratios for ecosystem biogeochemistry. Pp 450-479 In Lajtha, K. and Michener, R., Eds, Stable Isotope Ratios in Ecology and Environmental Science, 2nd Edition. Blackwell.
- 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. Carbon-Nitrogen Interactions in Forest Ecosystems – Final Report. Forest & Landscape Working Papers no. 17-2006, Danish Center for Forest, Landscape and Planning, Hørsholm, Denmark. 62 p.
- Simmons, J. A. and W. S. Currie. 2006. Alteration of soil phosphorus pools from coal mining and reclamation. *Annual Proceedings of the West Virginia Academy of Science*, 77(2):31-41 (2005).
- Currie, W. S., R. D. Yanai, K. B. Piatek, C. E. Prescott and C. L. Goodale. 2003. Processes affecting carbon storage in the forest floor and in downed woody debris. Chapter 9 In Kimble, J. M. et al., Eds., The Potential for U.S. Forest Soils to Sequester Carbon and Mitigate the Greenhouse Effect. Lewis Publishers, Boca Raton, FL.
- Aber, J. D., A. Magill, K. Nadelhoffer, J. Melillo, P. Steudler, P. Micks, J. Hendricks, R. Bowden, W. S. Currie, J. H. McDowell, and G. Berntson. 2004. Exploring the process of nitrogen saturation. Pages 259-279 in D. Foster and J. D. Aber, editors. Forests in Time: The Environmental Consequences of 1,000 Years of Change in New England. New Haven: Yale University Press, p. 259-279.
- Aber, J., W. Currie, M. Castro, M. Martin, and S. Ollinger. 2004. Synthesis and Extrapolation: Models, Remote Sensing and Regional Analysis. Chapter 17 In: Foster, D., and J. Aber

(eds.) Forests in Time: The Environmental Consequences of 1,000 Years of Change in New England. New Haven: Yale University Press, p. 338-362.

Ramsey, M., W. S. Currie, and M. V. Kulkarni. 2001. Contrasting pattern and process in natural and rehabilitated ecosystems: The role of microtopography. Recent Research Developments in Ecology 1:129-144. Trivandrum, India: Transworld Research Network.

Providoli, I., H. Bugmann, W. S. Currie and P. Schleppi. 2005. A model-based evaluation of nitrogen cycling in a Norway spruce mountain forest. Chapter 5, p. 83-106 in Providoli, I., Pathways of atmospherically deposited nitrogen in two ecosystems in central Switzerland: An experimental and model-based study using the ¹⁵N isotope. Unpublished PhD Dissertation ETH No. 15887, Swiss Federal Institute of Technology Zurich.

McDowell, W. H., W. S. Currie, J. D. Aber, and Y. Yano. 1998. Effects of chronic nitrogen amendment on production of dissolved organic carbon and nitrogen in forest soils. In Wieder, R. K., M. Novak, and J. Cerny (eds.) Biogeochemical Investigations at the Watershed, Landscape, and Regional Scales. (Reprinted from *Water, Air and Soil Pollution* 105.)

Currie, W. S. 1996. Book review of *Fundamentals of Soil Ecology*, by D. C. Coleman and D. A. Crossley. *Trends in Ecology and Evolution* 11(9):390-391

Synergistic Research Activities

NCEAS (National Center for Ecological Analysis and Synthesis) working group on meta-analyses and modeling for cross-site comparison of large-scale ¹⁵N studies in forest ecosystems, 2005 - 2006.

LIDET project (LTER Intersite Decomposition Experiment Team); NCEAS working group to analyze 10-year dataset, 2004. Team member and workshop participant 1993, 1996, 2002, 2004 (Publications, Moorhead et al. 1999, Parton et al. 2007).

Scientific Review Panel to assess LUSTRA Program (Land Use Strategies to Reduce Greenhouse Gas Emissions) for MISTRA (Foundation for Strategic Environmental Research), Stockholm, Sweden, 2002.

Organizer or Co-organizer of two international workshops on synthesis and modeling of forest carbon-nitrogen interactions under elevated N deposition: Workshop at the University of Michigan Biological Station, 2003 (Organizer), and in Woods Hole MA, 2002 (Co-organizer).

Alcoa Foundation Conservation and Sustainability Fellowship Program. Member of Sustainability Cabinet. 2005 – present.

NCEAS (National Center for Ecological Analysis and Synthesis) working group on progressive N limitation under elevated CO₂, 2001 – 2002. (Publication, Luo et al. 2004.)

CNTER (Carbon and Nitrogen Interactions; a US – European collaborative project sponsored by the European Union); member of scientific team and modeler of C, N, and ¹⁵N across US and European forest sites, 2001 – 2005.

Panelist, NSF workshop on Belowground Carbon Cycling and Biogeochemistry, 2003.
Production of an NSF white paper titled "Frontiers in belowground carbon cycling research," Johnston et al. 2003.

GCTE (Global Change and Terrestrial Ecosystems) Focus 1 / Focus 2 workshop, "An assessment of the use of gap models in global change, and how much physiology is needed in them," Pingree Park, CO, 1999. (Publication, Wullschlegel et al. 2001.)

ROCA (Research Opportunities for Collaboration in the Appalachians), project co-organizer, collaborator, and workshop co-organizer, "Watershed Research Workshop," Appalachian Laboratory, June 1999, 2000, 2001, 2002, 2003.

Workshop participant, "A cross-site synthesis of Biotic and Abiotic Agents of Decomposition and SOM dynamics in LTER sites" at the Institute of Ecology, University of Georgia, Athens, GA, 2000.

Creator of TRACE simulation model (Tracer Redistributions Among Compartments in Ecosystems), 1999 – 2006.

Workshop participant, Climate System Modeling Workshop "The Role of Ecological Models in Earth System Modeling," Estes Park, CO, 1992.

Service to Institution: University of Michigan

Field of Study Coordinator, Environmental Informatics, School of Natural Resources & Environment (SNRE), 2005 – present.

Field of Study Coordinator (acting), Terrestrial Ecosystems, SNRE, 2008 – present.

UM Senate Assembly, elected representative from SNRE, 2006 – present.

Faculty Associate, Program in The Environment, University of Michigan 2003 - present.

Faculty Associate, Applied Physics Program, University of Michigan 2005 – present.

PhD Committee, SNRE, 2004 - 2006.

Graduate Student Instructor Selection Committee, Program in the Environment, University of Michigan 2006.

Faculty Advisory Board, Program in The Environment, University of Michigan 2004 - 2005.

Faculty Search Committee, UM Department of Ecology & Evolutionary Biology: Ecologist, 2004 - 2005.

Steering Committee, SNRE Interdisciplinary Seminar and Workshop Series, 2005.

Doris Duke Fellowship Selection Committee, SNRE, 2004.

Service to Institution: Previous Institutions

Faculty Senator, University of Maryland, 2000 - 2003.

Co-chair, Ecology Area of Specialization in the MEES graduate program (Marine, Estuarine, and Environmental Sciences), University of Maryland, 2000 - 2003.

Graduate Council, University of Maryland Center for Environmental Science (UMCES), 2001 – 2003.

Chair, Graduate Education Committee, UMCES Appalachian Laboratory, 2001 – 2003.

Chair, Ad-hoc Committee to develop criteria for a permanent research station in Maryland, UMCES, 2001.

Faculty Search Committees, UMCES: Environmental Educator, 2000; Landscape Ecologist, 1998.

Other committee membership at UMCES, 1997-2003: Computer Committee, Library Committee, Colloquium Committee, Faculty Forum Committee, Faculty Convocation Committee, Space Allocation Committee.

Organizer of Science Safari, bringing local teachers to the Ecosystems Center at the Marine Biological Laboratory, 1997.

Organizer of the Ecosystems Center Seminar Series, Marine Biological Laboratory, 1996.

President, Graduate Student Organization, University of New Hampshire, 1994-1995.

Graduate Council, graduate student representative, University of New Hampshire, 1994-1995.

University President's Cabinet, graduate student representative, University of New Hampshire, 1994-1995.

Journals and Grants Programs

Associate Editor, Biogeochemistry, 2002 – 2006.

Panelist, National Science Foundation Ecosystem Studies Program, 2004, 2006, 2007.

Panelist, EPA STAR Grants Program, 2000, 2006.

Preproposal reviewer, US Forest Service NERC Program, 2006

Ad hoc reviewer for: Applied Geochemistry, Biotropica, Ecology, Ecological Applications, Ecosystems, Journal of Ecology, Journal of Tropical Forest Science, Oecologia, Soil Biology and Biochemistry, Soil Science Society of America Journal, Tree Physiology, Urban Ecology, NASA Earth Systems Science Fellowship Program, National Institute for Global Environmental Change (NIGEC), National Science Foundation (NSF) Division of Environmental Biology, NSF Integrative Research Challenges, NSF CRUI (Cross-disciplinary research at undergraduate institutions), NSF Atmospheric Chemistry, USDA National Research Initiative Competitive Grants Program.

Outreach and Other Service Activities

Co-organizer and moderator of symposium, "Advances in Modeling Coupled Human-Natural Systems for Sustainability," at the 2007 AAAS (American Association for the Advancement of Science) Annual Meeting, 15-19 February 2007, San Francisco, CA.

Instructor for Michigan Math and Science Scholars, a summer program exposing advanced high school students to college-level math and science at the University of Michigan, 2006 - 2008.

Session Presider, "Forest Ecology III, historical and environmental changes", at the 91st Annual Meeting of the Ecological Society of America, Memphis TN, August 2006.

SEEDS program (Strategies for Ecology Education, Development and Sustainability, a collaborative effort between the Ecological Society of America and the United Negro College Fund). Participant in a Field Trip to the UM Biological Station, 2005; Mentor at the Annual Meeting of the Ecological Society of America, 2002.

Finance and Investment Committee, Ecological Society of America, 2001 – 2005.

Session Chair, "Ecosystem Ecology," 87th Ann. Meeting of the Ecological Society of America, 2002.

Session leader, "Facilitating the input of data into models and model-data comparisons," Cary Conference IX, "The Use of Models in Ecosystem Science," Institute for Ecosystem Studies, Millbrook, NY, 2001.

Symposium organizer and Chair, "Modeling soil N turnover and the availability of inorganic and organic N to forest trees", for combined annual meeting of the International Society for Ecological Modeling and the Ecological Society of America, August 1999.

Debate organizer and moderator, "Is it the responsibility of scientists to communicate results to the public?" University of Maryland Center for Environmental Science, Annual Colloquium, 1999.

Session Chair, "Nitrogen cycling," 83rd Ann. Meeting of the Ecological Society of America, 1998.

Session Chair, "Biogeochemistry of the Forest Floor," 81st Ann. Meeting of the Ecological Society of America, 1996.

Courses taught

"Modeling Coupled Human-Natural Systems" (Environ 401), 3-credit lecture & laboratory course, Program in the Environment, University of Michigan, fall 2007, 2008.

"Ecosystem Modeling and Synthesis" (NRE 501), 3 or 4-credit graduate lecture & laboratory course, School of Natural Resources & Environment (SNRE), University of Michigan, fall 2004, 2005, winter 2008.

"Resilience Thinking: Reading case studies of sustainability analysis in human-natural systems" (NRE 639), a 1-credit graduate seminar course, SNRE, University of Michigan, winter 2008.

"Introduction to Environmental Analysis" (Environ / NRE 239), 4-credit undergraduate lecture & laboratory course, Program in the Environment, University of Michigan, winter 2004, 2005, 2006.

"Forest history, disturbance, and management in the Great Lakes region," graduate seminar course, SNRE, University of Michigan, winter 2006.

"Ecosystem Models as Tools for Research and Decision Making", graduate seminar course, SNRE, University of Michigan, fall 2003.

"Advanced Ecosystem Modeling", a 1-credit graduate computer laboratory course, SNRE, University of Michigan, 2005.

"Land Margin Interactions", 4-credit graduate course, University of Maryland Center for Environmental Science (UMCES), 2001, 2002. (Team-taught with Walt Boynton and Tom Fisher.)

"Graduate thesis and proposal writing", a 1-credit graduate seminar course, UMCES, 2001.

"Energetics," a 3-credit graduate course, UMCES, 1999.

"Biogeochemical and Hydrogeochemical Recovery of Disturbed Watersheds," a 1-credit graduate seminar course, UMCES, 1999. (Team taught with M. Castro and K. Eshleman.)

"Nutrient Dynamics at Landscape Scales," a 1-credit graduate seminar course, UMCES, 1998. (Team-taught with R. Gardner, K. Eshleman, S. Seagle, and M. Castro.)

Students advised

Postdoctoral scholar advised:

Willem W. Wessel

University of Michigan

Graduate students advised:

Kristine Crous	University of Michigan (PhD)
Nicolas Enstice	University of Michigan (MS)
Cynthia Giffen	University of Maryland (MS, co-advised)
Sharon Gourджи	University of Michigan (MS)
Meghan Hutchins	University of Michigan (MS)
Ari Kahan	University of Michigan (MS)
Madhura Kulkarni	University of Maryland (MS)
Alicia Lindauer-Thompson	University of Michigan (MS)
Katie Pethan	University of Michigan (MS)
Molly McFarland Ramsey	University of Maryland (MS)
William Walters	University of Michigan (MS, co-advised)

Graduate student committee membership:

Nathan Bosch	University of Michigan (PhD)
Haejin Han	University of Michigan (PhD)
John Hassett	University of Michigan (PhD)
Justin Heslinga	University of Michigan (MS)
Deborah Hudleston	University of Michigan (PhD)
Sarah Hypio	University of Maryland (MS)
Mark Kamakea	University of New Hampshire (PhD)
Yuka Makino	University of Michigan (PhD)
Timothy Negley	University of Maryland (MS)
Amy Powers	University of Michigan (PhD)
Derek Robinson	University of Michigan (PhD)
Dan Rucinski	University of Michigan (PhD)
Jeremiah Sawma	University of Maryland (MS)
Jason Taylor	University of Michigan (PhD)
Chris Welcker	University of Maryland (PhD)

Internships supervised:

Undergraduate internships for course credit, Program in The Environment, University of Michigan, 2004-2008 (7 total): Daniel Weckstein, Tom Green, Peter Haynes, Chris Dekraker, Amanda Cross, Derrick Golla, Amrita Patil.

Troy Cline, undergraduate student, National Science Foundation Research Experience for Undergraduates (REU) Program, University of Maryland, 2001

James Feeser, K-12 teacher, Johns Hopkins University Internships in Earth / Space Science, University of Maryland, 2002

Samuel Lucas, K-12 teacher, UMCES-Maryland Sea Grant Chesapeake Bay Education Initiative Research Fellows Program, University of Maryland, 2002

Kathleen Mulligan and Judith Vojik, undergraduate internship students (co-supervised), Andrew W. Mellon Foundation, Research Opportunities for Collaborations in the Appalachians, University of Maryland, 2002

Prakash Vempati (undergraduate student at Johns Hopkins University), research internship at SNRE, University of Michigan, 2004

Undergraduate research assistants, USDA Forest Service McIntire-Stennis Program, 2006 (6 total): Claire Otwell, Elizabeth Haber, Michaela Bosshard, Anthony Bratten, Emma Gilchrist, Adam Schubel.

Invited Presentations (selected, from 30 total)

- Currie, W. S. Controls on Land-Atmosphere Carbon Balances in Changing Landscapes. Natural Sciences Colloquium, University of Michigan Dearborn Campus, November 2007.
- Currie, W. S. Environmental Modeling and Geographic Information Science. SEEDS workshop at the University of Michigan Biological Station, June 2005.
- Currie, W. S. Combined field and modeling studies using isotopic tracers to investigate nutrient cycling in forest ecosystems. Seminar, Applied Physics Program, University of Michigan, October 2005.
- Currie, W. S. Dynamics in the ratios of nitrogen isotopes in ecosystem experiments: Modeling for numbers, and modeling for understanding. Given at the University of Colorado at Boulder in the Ecology & Evolutionary Biology Colloquium Series, 2004.
- Currie, W. S. Legitimate purposes for ecosystem models. Given as part of the Biogeochemistry and Environmental Biocomplexity Seminar Series, Cornell University, 2004.
- Currie, W. S. Model-data comparisons of large-scale ^{15}N tracer redistributions to study C / N interactions in temperate forests. Given at the Chesapeake Biological Laboratory, Solomons, MD, 2002.
- Currie, W. S. Nitrogen mineralization and nitrification. Appalachian College Association workshop at West Virginia Wesleyan College, 2002.
- Currie, W. S. Carbon-Nitrogen interactions in forests: C balance, N retention, and using models to synthesize and communicate the science. Plenary presentation given at the Gordon Research Conference on Hydrogeochemistry of Forested Watersheds, NH, 2001.
- Currie, W. S. Interpreting the redistributions of ^{15}N tracers in forests using a biogeochemical process model. Given at the Danish Center for Forest, Landscape, and Planning, Copenhagen, Denmark, 2001.
- Currie, W. S. Development of an ecosystem science for sustainability: The three most important aspects. Given at the Yale School of Forestry & Environmental Studies, 2001.
- Currie, W. S. Coupling and decoupling of carbon and nitrogen cycles in temperate forests. Keynote address given at the "Workshop on nitrogen deposition to and cycling in forest ecosystems and linkages to carbon sequestration," held at Indiana University, 1999.
- Currie, W. S. Studying the functional biogeochemistry of terrestrial ecosystems: Challenges and approaches. Given at the University of Minnesota Department of Ecology, Evolution, and Behavior, St. Paul, MN, 1997.
- Currie, W. S. Dissolved organic nitrogen in forest soils: its production and role in the N cycle across a heterogeneous landscape. Given at the Norwegian Institute for Water Research, Oslo, Norway, 1996.

Currie, W. S. Modeling the combined processes of litter decomposition and movement of dissolved organics in the forest floor. Given at the Institute of Ecosystem Studies, Millbrook, NY, 1996.

Currie, W. S. Cycles of base cations driven by forest dynamics during forest regrowth in an Appalachian watershed. Given at The Ecosystems Center, Marine Biological Laboratory, Woods Hole, MA, 1992.

Published Abstracts (selected, from 46 total)

Lindauer-Thompson, A., and W. S. Currie. The potential use of models as decision support tools in Michigan state forest management: assessing the interplay of carbon storage with other management goals. Oral presentation given at the annual meeting of the American Association of Geographers, Boston, MA, April 2008.

Currie, W. S., K. S. Hofmockel, R. B. Jackson, A. S. Gallet-Budynek, and A. C. Finzi. More rapid acquisition of N in forest trees growing under elevated CO₂. II. Modeling increased plant N demand and sources for N uptake at the Duke FACE site. Oral presentation given at the 91st meeting of the Ecological Society of America, Memphis, TN, August 2006.

Gallet-Budynek, A. S., K. S. Hofmockel, W. S. Currie, R. B. Jackson, and A. C. Finzi. More rapid acquisition of N in forest trees growing under elevated CO₂. I. Results of a large-scale ¹⁵N tracer study. Oral presentation given at the 91st meeting of the Ecological Society of America, Memphis, TN, August 2006.

Robinson, D.T., Brown D.G., and W.S. Currie. Linking Ecosystem and Land-Use Process Models: A Way Forward. Presented at the annual meeting of the American Association of Geographers, Chicago, IL, March 7-11, 2006.

Wessel, W. W. and W. S. Currie. Application of the model TRACE to a loblolly pine forest at ambient and elevated levels of CO₂ and prediction of the ¹⁵N dynamics. Oral presentation given at the 90th Annual Meeting of the Ecological Society of America, Montreal, Canada, 2005.

Gundersen, P. B. Berg, W. S. Currie et al. (15 co-authors). Carbon - Nitrogen interactions in forest ecosystems: constraints on soil C-sequestration and N-retention. Poster given at N2004, the 3rd International Nitrogen Conference, Nanjing, China, October 2004.

Currie W. S. and K. J. Nadelhoffer. Response times, residence time, and stoichiometric feedbacks: Integrating woody debris in ecosystem C & N cycling. Invited oral presentation (Organized Oral Session) at the 89th Annual Meeting of the Ecological Society of America, Portland, OR, August 2004.

Kulkarni M.V., Currie W.S. Multifactor controls on denitrification in a natural and reclaimed mine wetland. Poster presented at the Ecological Society of America 88th Annual Meeting, Savannah, GA, August 2003.

Currie, W. S., K. J. Nadelhoffer, and P. Gundersen. The weighted C/N stoichiometries of ecosystem pools that retain elevated N deposition in temperate forests. Given at the 87th annual meeting of the Ecological Society of America, Tucson, NM, August 2002.

- Kulkarni M. V. and W. S. Currie. Comparing denitrification potential and limits on denitrification in a wetland at a reclaimed mine site and a natural wetland: Preliminary Results. Given at the Chesapeake Bay Watershed Restoration Conference, Baltimore, MD, 2002.
- Wessel, W. W., W. S. Currie, and A. Tietema. A comparison of two models to simulate ^{15}N tracer experiments in a forest under low and high N deposition in the Netherlands. Given at the Biogeomon conference, Reading, UK, 2002.
- Currie, W. S., and K. J. Nadelhoffer. Decadal-scale C/N interactions in temperate forests assessed with ^{15}N tracer redistributions. Given at N2001, the 2nd International Nitrogen Conference, Potomac, MD, 2001.
- Yanai, R. D., W. S. Currie, C. L. Goodale, and W. W. Covington. Soil carbon dynamics following forest harvest: an ecosystem paradigm reviewed. Given at the 86th annual meeting of the Ecological Society of America, 2001.
- Eshleman, K. N., T. L. Negley, W. S. Currie, M. S. Castro, M. Ramsey, C. J. Giffen. Comparative analysis of hydrological responses of surface-mined and forested watersheds in western Maryland, U.S.A. Given at the 11th Stockholm Water Symposium, Stockholm, Sweden, 2001.
- Kulkarni M.V., Currie WS. A pilot study of surface coalmine distribution and land use in George's Creek watershed: Implications for reclamation as wetlands and effects on stream health. Poster presented at the Seventh Symposium on Wetland Biogeochemistry, Duke University, Durham, NC, 2001.
- Currie, W. S., K. J. Nadelhoffer, and B. Colman. Woody detritus, land use history, and long-term C and N interactions. Given at the 12th annual Harvard Forest Ecology Symposium, 2001.
- Currie, W. S. Fluxes of bioavailable energy released during decomposition in the temperate forest floor. Given at the 85th Annual Meeting of the Ecological Society of America, 2000.
- Lajtha, K., B. Caldwell, R. Bowden, D. Coleman, W. Currie, S. Hobbie, W. McDowell, J. Moore, K. Nadelhoffer, J. Toth. DIRT: A cross-continental, experimental study of forest SOM and N dynamics. Poster presentation given at the LTER All Scientists Meeting, 2000.
- Ramsey, M. and W. S. Currie. Spatial pattern of nutrient availability at a reclaimed mine ecosystem: the role of microtopography, soil moisture, and vegetation. Given at the annual meeting of the Society of Wetland Scientists, Quebec City, Canada, 2000.
- Eshleman, K. N., R. H. Gardner, L. F. Pitelka, S. W. Seagle, P. A. Townsend, W. S. Currie, J. N. Galloway, J. R. Webb, and A. T. Herlihy. Assessment of forest disturbance in the Mid-Atlantic region: a multiscale linkage between terrestrial and aquatic ecosystems. Given at the USEPA Regional Scale Analysis and Assessment Program Review Meeting, 2000.
- Currie, W. S. The problem of coupling C and N cycles to model soil N turnover in temperate forest soils. Given at the annual meeting of the International Society of Ecological Modeling, 1999.

- Magill, A., J. Aber, R. Minocha, W. McDowell and W. S. Currie. Above- and below-ground indicators of nitrogen saturation in two N fertilized forest stands. Given at the 84th Annual Meeting of the Ecological Society of America, Spokane, WA, 1999.
- Currie, W. S. Modeling plant community N cycling as a nonlinear interaction between species-specific feedbacks. Given at the 83rd Annual Meeting of the Ecological Society of America, 1998.
- Currie, W. S. and K. J. Nadelhoffer. The promise of modeling ¹⁵N tracer movements in forest ecosystems. Given at the 82nd Ann. Meeting of the Ecological Society of America, 1997.
- McDowell, W. H., W. S. Currie, J. D. Aber, and Y. Yano. Effects of chronic nitrogen amendment on DOC and DON production in forest soils. Given at the Biogeomon conference, Villanova, PA, 1997.
- Currie, W. S., K. J. Nadelhoffer, and J. D. Aber. TRACE: a process model of ¹⁵N redistribution in forest ecosystems. Given at the Chapman Conference on Nitrogen Cycling in Forested Watersheds, 1996.
- Currie, W. S., J. D. Aber and C. Driscoll. Cation and anion leaching from the forest floor under chronic N additions. Harvard Forest Research Symposium, 1996.
- Currie, W. S. and J. D. Aber. Modeling litter decomposition and nitrogen dynamics as part of an intercomparison study across the LTER (Long-Term Ecological Research) network. Given at the Harvard Forest Ecology Symposium, April 1994.