

## Walker Branch Watershed Publications

(Last updated December 2009)

- Adriano, D.C. and M. Havas, 1989, *Acidic precipitation*. Advances in environmental science. Vol. 1. New York: Springer-Verlag. 326.
- Amthor, J.S. and D.D. Baldocchi, 1998, *Terrestrial Higher-Plant Respiration and Net Primary Production*, In: *Terrestrial Global Productivity: Past, Present and Future*, J. Roy, B. Saugier, and H. Mooney, Editors, Academic Press: San Diego.
- Anderson, S.H. and H.H.J. Shugart, 1974, Avian community analysis of Walker Branch Watershed, ORNL/TM-4700, Oak Ridge National Laboratory, Oak Ridge, TN
- Anderson, D.E., S.B. Verma, R.E. Clement, D.D. Baldocchi, and D.R. Matt, 1986, *Turbulence spectra of CO<sub>2</sub>, water vapor, temperature and velocity over a deciduous forest*. Agricultural and Forest Meteorology, **38**: 81-99.
- Andren, A.W., S.E. Lindberg, and L.C. Bate, 1975, Atmospheric input and geochemical cycling of selected trace elements in Walker Branch Watershed, ORNL/NSF/EATC-13, Oak Ridge National Laboratory, Oak Ridge, TN
- Andren, A.W. and S.E. Lindberg, 1977, *Atmospheric input and origin of selected elements in Walker Branch Watershed, Oak Ridge, Tennessee*. Water Air and Soil Pollution, **8**(2): p. 199-215.
- Arnseth, R.W. and R.S. Turner, 1988, *Sequential extraction of Fe, Mn, Al, and Si in soils from two contrasting watersheds*. Soil Science Society of America Journal, **52**:1801-1807.
- Ausmus, B.S., N.T. Edwards, and M. Witkamp, 1976, *Microbial immobilization of carbon, nitrogen, phosphorus, and potassium: Implications of forest ecosystem processes*, in *The Role of terrestrial and aquatic organisms in decomposition processes : the 17th symposium of the British Ecological Society*, J.M. Anderson and A. McFadyen, Editors. Blackwell Scientific Press, Oxford: Oxford. p. 397-416.
- Baes, C.F., C.L. Begovich, W.M. Culkowski, K.R. Dixon, D.E. Fields, J.T. Holdeman, D.D. Huff, D.R. Jackson, N.M. Larson, R.J. Luxmoore, J.K. Munro, M.R. Patterson, R.J. Raridon, M. Reeves, O.C. Stein, J.L. Stolzy, T.C. Tucker, R.I. Van Hook, and W.D. Shults, 1975, The Unified Transport Model; Ecology and Analysis of Trace Contaminants Progress Report, October 1974-December 1975, ORNL/NSF/EATC-22, Oak Ridge National Laboratory, Oak Ridge, TN
- Baldocchi, D.D., B.A. Hutchison, D.R. Matt, and R.T. McMillen, 1984, *Seasonal variations in the radiation regime within an oak-hickory forest*. Agricultural and Forest Meteorology, **33**:177-191.
- Baldocchi, D.D., D.R. Matt, B.A. Hutchison, and R.T. McMillen, 1984, *Solar radiation in an oak-hickory forest : an evaluation of extinction coefficients for several radiation components during fully-leaved and leafless periods*. Agricultural and Forest Meteorology, **32**: 307-322.

- Baldocchi, D.D., B.A. Hutchison, D.R. Matt, and R.T. McMillen, 1985, *Canopy radiative transfer models for spherical and known leaf inclination angle distributions: a test in an oak-hickory forest* *Journal of Applied Ecology*, **22**: 539-555.
- Baldocchi, D.D., D.R. Matt, R.T. McMillen, and B.A. Hutchison, 1985, *Evapotranspiration from an oak-hickory forest*, in *Proceedings of the National Conference on Advances in Evapotranspiration, December 16-17, 1985, Chicago, Illinois*. American Society of Agricultural Engineers: St. Joseph, Michigan. p. 414-422.
- Baldocchi, D.D., S.B. Verma, D.E. Anderson, and D.R. Matt, 1986, *Eddy-correlation measurements of carbon-dioxide efflux from the floor of a deciduous forest*. *Journal of Applied Ecology*, **23**(3): p. 967-975.
- Baldocchi, D.D. and B.A. Hutchison, 1986, *Effects of clumped foliage on the estimation of canopy photosynthesis and stomatal conductance in a deciduous forest*. *Tree Physiology*, **2**: 155-168.
- Baldocchi, D.D. and B.A. Hutchison, 1986, *On estimating canopy photosynthesis and stomatal conductance in a deciduous forest with clumped foliage*. *Tree Physiology*, **2**: 155-168.
- Baldocchi, D.D., B.A. Hutchison, D.R. Matt, and R.T. McMillen, 1986, *Seasonal variations in the statistics of photosynthetically active radiation penetration in an oak hickory forest*. *Agricultural and Forest Meteorology*, **36**: 343-361.
- Baldocchi, D.D., B.B. Hicks, and P. Camara, 1987, *A canopy stomatal resistance model for gaseous deposition to vegetated surfaces*. *Atmospheric Environment*, **21**: 91-101.
- Baldocchi, D.D., B.B. Hicks, and T.P. Meyers, 1988, *Measuring biosphere-atmosphere exchanges of biologically related gases with micrometeorological methods*. *Ecology*, **69**(5): p. 1331-1340.
- Baldocchi, D.D. and T.P. Meyers, 1988, *A spectral and lag correlation analysis of turbulence in a deciduous forest canopy*. *Boundary Layer Meteorology*, **45**: 31-58.
- Baldocchi, D.D. and T.P. Meyers, 1988, *Turbulence structure in a deciduous forest*. *Boundary-Layer Meteorology*, **43**(4): p. 345-365.
- Baldocchi, D.D., 1989, *Turbulence transfer in a deciduous forest*. *Tree Physiology*, **5**: 357-377.
- Baldocchi, D.D. and T.P. Meyers, 1991, *Trace gas exchange at the floor of a deciduous forest : I Evaporation and CO<sub>2</sub> efflux*. *Journal Geophysical Research, Atmospheres*, **96**: 7271-7285.
- Baldocchi, D.D., 1993, *Scaling water and carbon exchange processes from leaves to a canopy: rules and tools*, in *Scaling Processes Between Leaf and Landscape Levels*, J. Ehleringer and C.B. Field, Editors, Academic Press: San Diego. p. 77-114.
- Baldocchi, D.D. and S. Collineau, 1994, *The Physical Nature of Light in Heterogeneous Canopies: Spatial and Temporal Attributes*, in *Exploitation of Environmental Heterogeneity by Plants: Ecophysiological Processes Above and Below Ground*, M.M. Caldwell and R.W. Pearcy, Editors, Academic Press: San Diego. p. 21-72.

- Baldocchi, D.D., A. Guenther, P.C. Harley, L. Klinger, P. Zimmerman, B. Lamb, and H. Westberg, 1995, *The fluxes and air chemistry of isoprene above a deciduous hardwood forest*. Proceedings of the Royal Society of London, A, **350**: 279-296.
- Baldocchi, D.D. and P.C. Harley, 1995, *Scaling carbon dioxide and water vapor exchange from leaf to canopy in a deciduous forest: model testing and application*. Plant, Cell and Environment, **18**: 1157-1173.
- Baldocchi, D.D. and C.A. Vogel, 1996, *Energy and Carbon Dioxide Flux Densities Above and Below a Temperate Broad-leaved Forest and a Boreal Pine Forest*. Tree Physiology, **16**: 5-16.
- Baldocchi, D.D., 1997, *Flux footprints within and over forest canopies*. Boundary-Layer Meteorology, **85**(2): p. 273.
- Baldocchi, D.D., 1997, *Measuring and modeling carbon dioxide and water vapor exchange over a temperate broad-leaved forest during the 1995 summer drought*. Plant, Cell and Environment, **20**: 1108-1122.
- Baldocchi, D.D. and J.S. Amthor, 1998, *Canopy Photosynthesis: History, measurements and models*, in *Terrestrial Global Productivity: Past, Present and Future*, J. Roy, B. Saugier, and H. Mooney, Editors, Academic Press: San Diego.
- Baldocchi, D.D. and T.P. Meyers, 1998, *On using eco-physiological, micrometeorological and biogeochemical theory to evaluate carbon dioxide, water vapor and gaseous deposition fluxes over vegetation*. Agricultural and Forest Meteorology, **90**: 1-26.
- Baldocchi, D.D. and K.B. Wilson, 2001, *Modeling CO<sub>2</sub> and water vapor exchange of a temperate broadleaved forest across hourly to decadal time scales*. Ecological Modelling, **142**(1-2): p. 155-184.
- Baldocchi, D.D., E. Falge, and K. Wilson, 2001, *A spectral analysis of biosphere-atmosphere trace gas flux densities and meteorological variables across hour to multi-year time scales*. Agricultural and Forest Meteorology, **107**(1): p. 1-27.
- Balick, L.K. and B.A. Hutchison, *Directional thermal infrared exitance distributions from a leafless deciduous forest*. 1986, Remote Sensing , 693-698.
- Barnett, M.O., P.M. Jardine, S.C. Brooks, and H.M. Selim, 2000, *Adsorption and transport of U(VI) in subsurface media*. Soil Science Society of America Journal, **64**: 908-917.
- Barnett, M.O., P.M. Jardine, and S.C. Brooks, 2002, *U(VI) adsorption to heterogeneous subsurface media: Application of a surface complexation model*. Environmental Science & Technology, **36**(5): p. 937-942.
- Baron, L.A., T.L. Ashwood, B.E. Sample, and C. Welsh, 1997, *Monitoring bioaccumulation of contaminants in the belted kingfisher (Ceryle alcyon)*. Environmental Monitoring and Assessment, **47**(2): p. 153-165.

- Barrie, L., S.E. Lindberg, W.H. Chan, H.B. Ross, R. Arimoto, and T.M. Church, 1987, *On the concentration of trace metals in precipitation*. Atmospheric Environment, **21**:1133-1135.
- Bate, L.C., S.E. Lindberg, and A.W. Andren, 1975, *Elemental analysis of water and air solids by neutron activation analysis*. IN: International nuclear and atomic activation analysis conference; Gatlinburg, Tennessee, CONF-751009--4,
- Beaulieu, J.J., Arango, C.P., Hamilton, S.K. and Tank, J.L., *The production and emission of nitrous oxide from headwater streams in the Midwestern United States*. Global Change Biology, **In press**
- Begovich, C.L. and D.R. Jackson, 1975, Documentation and application of SCEHM. A model for soil chemical exchange of heavy metals, ORNL/NSF/EATC-16, Oak Ridge National Laboratory, Oak Ridge, TN
- Begovich, C.L. and R.J. Luxmoore, 1976, Some sensitivity studies of chemical transport simulated in models of the soil-plant-litter system, ORNL/TM-6791, Oak Ridge National Laboratory, Oak Ridge, TN
- Bostick, B.C., M.O. Barnett, P.M. Jardine, S.C. Brooks, and S.E. Fendorf, 2002, *Uranyl surface species formed on subsurface media from DOE facilities*. Soil Science Society America Journal, **66**: 99-108.
- Bowling, D.R., A.A. Turnipseed, A.C. Delany, D.D. Baldocchi, J.P. Greenberg, and R.K. Monson, 1998, *The use of relaxed eddy accumulation to measure biosphere-atmosphere exchange of isoprene and other biological trace gases*. Oecologia, **116**(3): p. 306-315.
- Bowling, D.R., P.P. Tans, and R.K. Monson, *Partitioning net ecosystem carbon exchange with isotopic fluxes of CO<sub>2</sub>*. 2001, Global Change Biology, **7**(2): p. 127-145.
- Canadell, J., H. Mooney, D. Baldocchi, J. Berry, J. Ehleringer, C. Field, T. Gower, D. Hollinger, J. Hunt, R. Jackson, G. Shaver, S. Trumbore, R. Valentini, and B. Yoder, 1999, *Ecosystem metabolism and the global carbon cycle*. Bioscience, **14**(6): p. 249-249.
- Chambers, L.S. and P.J. Hanson, 1995, *Impact of changing precipitation patterns on CO<sub>2</sub> efflux rates from a forest floor - the 1995 updated profile*. Bulletin of the Ecological Society of America, **76**(2): p.
- Chang, F. and J.W. Delleur, 1992, *Systematic Parameter Estimation of Watershed Acidification Model*. Hydrological Processes, **6**(1): p. 29-44.
- Coe, J.M. and S.E. Lindberg, 1987, *The morphology and size distributions of atmospheric particles deposited on foliage and inert surfaces*. Journal of the Air Pollution Control Association, **37**: 237-243.
- Comiskey, C.E., G.S. Henderson, R.H. Gardner, and F.W. Woods, 1977, *Patterns of organic matter transport on Walker Branch Watershed*, in *Watershed Research in Eastern North America: A workshop to compare results*. Volume 1. Chesapeake Bay Center for Environmental Studies. p. 439-467.

- Cox, T.L., W.F. Harris, B.S. Ausmus, and N.T. Edwards, 1977, *The role of roots in biogeochemical cycles in eastern deciduous forests*, in *The Belowground Ecosystem: A Synthesis of Plant Associated Processes*, J.K. Marshall, Editor, Colorado State University: Fort Collins, Colorado. p. 321-326.
- Cox, T.L., W.F. Harris, B.S. Ausmus, and N.T. Edwards, 1978, *The role of roots in biogeochemical cycles in an eastern deciduous forest*. *Pedobiologia*, **18**: 264-271.
- Craft, C.B. and J.W. Webb, 1983, *Effects of acidic and neutral sulfate salt solutions on forest floor arthropods*. *Journal of Environmental Quality*, **13**(3): p. 436-440.
- Curlin, J.W. and D.J. Nelson, 1968, Walker Branch Watershed Project: objectives, facilities and ecological characteristics, ORNL/TM-2271,
- Cushman, R.M., 1975, *Production dynamics of Alloperia mediana Banks (Plecoptera: Chloroperlidae) and Diplectronea modesta Banks (Trichoptera: Hydropsychidae) in Walker Branch, Tennessee*, MS in *Ecology*. University of Tennessee: Knoxville.
- Cushman, R.M., J.W. Elwood, and S.G. Hildebrand, 1975, Production dynamics of *Alloperia mediana* Banks (Plecoptera: Chloroperlidae) and *Diplectronea modesta* Banks (Trichoptera: Hydropsychidae) in Walker Branch, Tennessee, ORNL-TM-4957, Oak Ridge National Laboratory, Oak Ridge, TN
- Cushman, R.M., J.W. Elwood, and S.G. Hildebrand, 1977, *Life history and production dynamics of Alloperia mediana and Diplectronea modesta in Walker Branch, Tennessee*. *American Midland Naturalist*, **98**(2): p. 354-364.
- Dale, V.H., L.K. Mann, R.J. Olson, D.W. Johnson, and K.C. Dearstone, 1990, *The long-term influence of past land use on the Walker Branch forest*. *Landscape Ecology*, **4**: 211-224.
- Dale, V.H., A.W. King, L.K. Mann, R.A. Washington-Allen, and R.A. McCord, 1998, *Assessing land-use impacts on natural resources*. *Environmental Management*, **22**(2): p. 203-211.
- DeAngelis, D. L., and P. J. Mulholland. 2004. *Dynamic consequences of allochthonous inutrient input to freshwater systems*, pp. 12-24. In: *Food Webs at the Landscape Level*, G. A. Polis, M. E. Power, and G. R. Huxel (eds.), The University of Chicago Press, Chicago, IL.
- Division, Environmental Sciences, 1972, Walker Branch Watershed: a study of terrestrial and aquatic system interaction. IN: Environmental Sciences Division annual progress report for period ending September 30, 1972, ORNL-4848, Oak Ridge National Laboratory, Oak Ridge, TN
- Dixon, K.R., R.J. Luxmoore, and C.L. Begovich, 1976, CERES - A model of forest stand biomass dynamics for predicting trace contaminant, nutrient, and water effects, ORNL/NSF/EATC-25, Oak Ridge National Laboratory, Oak Ridge, TN
- Dixon, K.R., R.J. Luxmoore, and C.L. Begovich, 1978, *CERES - A model of forest stand biomass dynamics for predicting trace contaminant, nutrient, and water effects. II. Model application*. *Ecological Modelling*, **5**: 93-114.

- Dixon, K.R., R.J. Luxmoore, and C.L. Begovich, 1978, *CERES - A model of forest stand biomass dynamics for predicting trace contaminant, nutrient, and water effects; I. Model description*. Ecological Modelling, **5**:17-38.
- Doll, W.E., R.D. Miller, and J.H. Xia, 1998, *A noninvasive shallow seismic source comparison on the Oak Ridge Reservation, Tennessee*. Geophysics, **63**(4): p. 1318-1331.
- Doyle, T.W., 1983, *Competition and growth relationships in a mixed-age, mixed-species forest community*. Thesis, University of Tennessee: Knoxville.
- Driese, S.G., L.D. McKay, and C.P. Penfield, 2001, *Lithologic and pedogenic influences on porosity distribution and groundwater flow in fractured sedimentary saprolite: A new application of environmental sedimentology*. Journal of Sedimentary Research, **71**(5): p. 843-857.
- Edwards, N.T. and G.J. Dodson, 1971, Litter input and decomposition in a Liriodendron forest, ORNL/IBP-71-64, Oak Ridge National Laboratory, Oak Ridge, TN
- Edwards, N.T., M.H. Shanks, and G.J. Dodson, 1971, A study of the water budget and mineral input by throughfall, wetfall, dryfall, and stemflow in a Liriodendron forest, ORNL/IBP-71-65, Oak Ridge National Laboratory, Oak Ridge, TN
- Edwards, N.T. and M.H. Shanks, 1972, Cycling of elements by Liriodendron: Inputs to the forest floor via wetfall, dryfall, canopy leaching and litterfall, ORNL/IBP-72-149, Oak Ridge National Laboratory, Oak Ridge, TN
- Edwards, N.T., 1972, Prediction of forest floor respiration rates from air and litter temperatures, ORNL/IBP-72-131, Oak Ridge National Laboratory, Oak Ridge, TN
- Edwards, N.T. and P. Sollins, 1973, *Continuous measurement of carbon dioxide evolution from partitioned forest floor components*. Ecology, **54**: 406-412.
- Edwards, N.T., 1974, *A moving chamber design for measuring soil respiration rates*. Oikos, **25**: 97-101.
- Edwards, N.T., 1975, *Effects of temperature and moisture on carbon dioxide evolution in a mixed deciduous forest floor*. Soil Science Society America Proceedings, **39**: 361-365.
- Edwards, N.T., W.F. Harris, and J. Shugart, H.H., 1977, *Carbon cycling in a deciduous forest*, in *The Belowground Ecosystem: A Synthesis of Plant Associated Processes*, J.K. Marshall, Editor, Colorado State University: Fort Collins, CO.
- Edwards, N.T. and W.F. Harris, 1977, *Carbon cycling in a mixed deciduous forest floor*. Ecology, **58**: 431-437.
- Edwards, N.T. and S.B. McLaughlin, 1978, *Temperature-independent diurnal variations of respiration rates in Quercus alba L. and Liriodendron tulipifera L.* Oikos, **31**: 200-206.

- Edwards, N.T. and B.M. Ross-Todd, 1979, *The effects of stem girdling on biogeochemical cycles within a mixed deciduous forest in eastern Tennessee. I. Soil solution chemistry, soil respiration, litterfall, and root mass.* *Oecologia*, **40**: 247-257.
- Edwards, N.T., J. Shugart, H.H., S.B. McLaughlin, W.F. Harris, and D.E. Reichle, 1980, *Carbon metabolism in terrestrial ecosystems*, in *Dynamic Properties of Forest Ecosystems*, D.E. Reichle, Editor, Cambridge University Press: London. p. 499-536.
- Edwards, N.T., 1982, *A time saving technique for measuring respiration rates in incubated soil samples.* *Soil Science Society of America Journal*, **46**: 1114-1116.
- Edwards, N.T., 1982, *The use of soda-lime for measuring respiration rates in terrestrial systems.* *Pedobiologia*, **23**: 321-330.
- Edwards, N.T., 1983, *Carbon dynamics in a mixed deciduous forest following clearcutting with and without residue removal.* *Soil Science Society of America Journal*, **47**: 1014-1021.
- Edwards, N.T., D.W. Johnson, S.B. McLaughlin, and W.F. Harris, 1989, *Carbon dynamics and productivity*, in *Analysis of Biogeochemical Cycling Processes in Walker Branch Watershed*, D.W. Johnson and R.I. Van Hook, Editors, Springer-Verlag: New York.
- Edwards, N.T. and P.J. Hanson, 1994, *Bole respiration in a closed-canopy upland oak forest before and after soil moisture manipulations.* *Bulletin of the Ecological Society of America*, **75**(2): p.
- Edwards, N.T. and P.J. Hanson, 1996, *Stem respiration in a closed-canopy upland oak forest.* *Tree Physiology*, **16**(4): p. 433-439.
- Eldridge, J.S., T.W. Oakes, and K.E. Shank, 1980, *Radionuclide Concentrations in White-Tailed Deer on the Department-of-Energy Oak-Ridge-Reservation.* *Health Physics*, **39**(6): p. 1059-1059.
- Elwood, J.W. and D.J. Nelson, 1972, *Periphyton production and grazing rates in a stream measured with a <sup>32</sup>P material balance method.* *Oikos*, **23**: 295-303.
- Elwood, J.W. and R.A. Goldstein, 1975, *Effects of temperature on food ingestion rate and absorption, retention, and equilibrium body burden of phosphorus in an aquatic snail, Goniobasis clavaeformis Lea.* *Freshwater Biology*, **5**: 397-406.
- Elwood, J.W. and G.S. Henderson, 1975, *Hydrologic and chemical budgets at Oak Ridge, Tennessee*, in *Coupling of Land and Water Systems*, A.D. Hasler, Editor, Springer-Verlag: New York. p. 31-51.
- Elwood, J.W. and R.M. Cushman, 1975, *The life history and ecology of Peltoperla maria (Plecoptera: Peltoperlidae) in a small spring-fed stream.* *Verhandlungen Internationale Vereinigung für Theoretische und Angewandte Limnologie*, **19**: 3050-3056.
- Elwood, J.W., J.D. Newbold, A.F. Trimble, and R.W. Stark, 1981, *The limiting role of phosphorus in a woodland stream ecosystem: effects of P enrichment on leaf decomposition and primary producers.* *Ecology*, **62**: 146-158.

- Elwood, J.W., J.D. Newbold, R.V. O'Neill, R.W. Stark, and P.T. Singley, 1981, *The role of microbes associated with organic and inorganic substrates in phosphorus spiralling in a woodland stream*. Verhandlungen Internationale Vereinigung für Theoretische und Angewandte Limnologie, **21**: 850-856.
- Elwood, J.W., J.D. Newbold, R.V. O'Neill, and W. Van Winkle, 1983, *Resource spiraling: an operational paradigm for analyzing lotic ecosystems*, in *Dynamics of Lotic Ecosystems*, I. Fontaine, T.D. and S.M. Bartell, Editors, Ann Arbor Science: Ann Arbor. p. 3-27.
- Elwood, J.W., 1989, Ecosystem research on Walker Branch watershed, ORNL/FTR-3455, Oak Ridge National Laboratory, Oak Ridge, TN
- Erisman, J.W., C. Beier, G. Draijers, and S. Lindberg, 1994, *Review of deposition monitoring*. Tellus, **46B**: 79-93.
- Fellows, C. S., H. M. Valett, C. N. Dahm, P. J. Mulholland, and S. A. Thomas. 2006. *Coupling nutrient uptake and energy flow in headwater streams*. Ecosystems **9**: 788-804.
- Fong, L. and H.R. Appelbaum, 1980, Macropore-mesopore model of water flow through aggregated porous media, ORNL/MIT-312, Oak Ridge National Laboratory, Oak Ridge, TN
- Fontaine, T.A. and J. Todd, D.E., *Measuring evaporation with ceramic Bellani plate atmometers*. 1993, Water Resources Bulletin, **29**: 785-795.
- Fröberg M., P. M. Jardine, P. J. Hanson, C. J. Swanston, D. E. Todd, J. R. Tarver, and C. T. Garten. 2007. *Low dissolved organic carbon input from fresh litter to deep mineral soils*. Soil Science Society of America Journal **71**: 347-354.
- Garrett, A.J., J.M. Irvine, A.D. King, T.K. Evers, D.A. Levine, C. Ford, and J.L. Smyre, 2000, *Application of multispectral imagery to assessment of a hydrodynamic simulation of an effluent stream entering the Clinch River*. Photogrammetric Engineering and Remote Sensing, **66**(3): p. 329-335.
- Garten, C.T., Jr., 1988, *Contribution of foliar leaching and dry deposition to sulfate in net throughfall below deciduous trees*. Atmospheric Environment, **22**: 1425-1432.
- Garten, C.T., Jr., 1988, *Fate and distribution of sulfur-35 in yellow poplar and red maple trees*. Oecologia, **76**: 43-50.
- Garten, C.T., Jr. and G.E. Taylor, 1992, *Foliar Delta C-13 within a Temperature Deciduous Forest - Spatial, Temporal, and Species Sources of Variation*. Oecologia, **90**(1): p. 1-7.
- Garten, C.T., Jr., 1992, *Natural Variation in N-15 N-14 Ratios and Site Nitrogen Status on Walker Branch Watershed*. Abstracts of Papers of the American Chemical Society, **203**: 76-GEOC.
- Garten, C.T., Jr., 1992, *Nitrogen isotope composition of ammonium and nitrate in bulk precipitation and forest throughfall*. International Journal of Environmental Analytical Chemistry, **47**: 33-45.

- Garten, C.T., Jr., 1993, *Variation in foliar <sup>15</sup>N-abundance and the availability of soil nitrogen on Walker Branch Watershed*. Ecology, **74**: 2098-2113.
- Garten, C.T., Jr., M.A. Huston, and C.A. Thoms, 1994, *Topographic variation of soil nitrogen dynamics at Walker Branch Watershed, Tennessee*. Forest Science, **40**(3): p. 497-512.
- Garten, C.T., Jr., 1996, *Stable nitrogen isotope ratios in wet and dry nitrate deposition collected with an artificial tree*. Tellus Series B-Chemical and Physical Meteorology, **48**(1): p. 60-64.
- Garten, C.T., Jr., A.B. Schwab, and T.L. Shirshac, 1998, *Foliar retention of <sup>15</sup>N tracers; implications for net canopy exchange in low- and high-elevation forest ecosystems*. Forest Ecology and Management, **103**: 211-216.
- Garten, C.T., Jr., W.M.I. Post, P.J. Hanson, and L.W. Cooper, 1999, *Forest soil carbon inventories and dynamics along an elevation gradient in the southern Appalachian Mountains*. Biogeochemistry, **45**: 115-145.
- Garten, C.T., Jr., L.W. Cooper, W.M.I. Post, and P.J. Hanson, 2000, *Climate controls on forest soil C isotope ratios in the southern Appalachian Mountains*. Ecology, **81**: p. 1108-1119.
- Garten, C.T., Jr., D.M. Hamby, and R.G. Schreckhise, 2000, *Radiocesium discharges and subsequent environmental transport at the major US weapons production facilities*. Science of the Total Environment, **255**(1-3): p. 55-73.
- Gaudinski J. B. and S. E. Trumbore. 2003. *Soil Carbon Turnover*, in *North American Temperate Deciduous Forest Responses to Changing Precipitation Regimes*, P.J. Hanson and S.D. Wullschleger, Editors, Springer-Verlag: New York. p. 190-209.
- Gebre, G.M., T.J. Tschaplinski, and T.L. Shirshac, 1998, *Water relations of several hardwood species in response to throughfall manipulation in an upland oak forest during a wet year*. Tree Physiology, **18**(5): p. 299-305.
- Gebre, G.M. and T.J. Tschaplinski, 2002, *Solute accumulation of chestnut oak and dogwood leaves in response to throughfall manipulation of an upland oak forest*. Tree Physiology, **22**(4): p. 251-260.
- Genereux, D.P. and H.F. Hemond, 1992, *Determination of Gas-Exchange Rate Constants for a Small Stream on Walker Branch Watershed, Tennessee*. Water Resources Research, **28**(9): p. 2365-2374.
- Genereux, D.P., H.F. Hemond, and P.J. Mulholland, 1993, *Field studies of streamflow generation using natural and injected tracers on Bickford and Walker Branch Watershed, ORNL/TM-12018, Oak Ridge National Laboratory, Oak Ridge, TN*
- Genereux, D.P., H.F. Hemond, and P.J. Mulholland, 1993, *Spatial and Temporal Variability in Streamflow Generation on the West Fork of Walker Branch Watershed*. Journal of Hydrology, **142**(1-4): p. 137-166.

- Genereux, D.P., H.F. Hemond, and P.J. Mulholland, 1993, *Use of Rn-222 and Calcium as Tracers in a 3-End-Member Mixing Model for Streamflow Generation on the West Fork of Walker Branch Watershed*. Journal of Hydrology, **142**(1-4): p. 167-211.
- Genereux, D.P. and H.F. Hemond, 1994, *Determination of Gas-Exchange Rate Constants for a Small Stream on Walker Branch Watershed, Tennessee - Reply*. Water Resources Research, **30**(5): p. 1633-1634.
- Goldstrand, P.M. and L.A. Shevenell, 1997, *Geologic controls on porosity development in the Maynardville limestone, Oak Ridge, Tennessee*. Environmental Geology, **31**(3-4): p. 248-258.
- Grant, R.F., Y. Zhang, F. Yuan, S. Wang, P. J. Hanson, D. Gaumont-Guay, J. Chen, T. A. Black, A. Barr, and D. D. Baldocchi, 2006. *Intercomparison of techniques to model water stress effects on CO<sub>2</sub> and energy exchange in temperate and boreal*. Ecological Modelling, **196**(3) : 289-312.
- Greco, S. and D.D. Baldocchi, 1996, *Seasonal variations of CO<sub>2</sub> and water vapour exchange rates over a temperate deciduous forest*. Global Change Biology, **2**(3): p. 183-197.
- Grigal, D.F. and R.A. Goldstein, 1971, *An integrated ordination-classification analysis of an intensively sampled oak-hickory forest*. Journal of Ecology, **59**: 481-492.
- Grigal, D.F. and T. Grizzard, 1975, *Analysis of Litterfall in a Deciduous Forest on Walker Branch Watershed, Tennessee - Data Stratification by 2 Alternative Methods*. American Midland Naturalist, **94**(2): p. 361-369.
- Grizzard, T., G.S. Henderson, E.E.C. Clebsch, and D.E. Reichle, 1976, *Seasonal nutrient dynamics of foliage and litterfall on Walker Branch Watershed, a deciduous forest ecosystem*, ORNL/TM-5254, Oak Ridge National Laboratory, Oak Ridge, TN
- Gu, L., P. J. Hanson, W. M. Post, D. P. Kaiser, B. Yang, R. Nemani, S. G. Pallardy, and T. Meyers, 2008, *The 2007 eastern U.S. spring freeze: increased cold damage in a warming world?* BioScience **58**(3): p.253-262.
- Gulliver, J.S., 1994, *Determination of Gas-Exchange Rate Constants for a Small Stream on Walker Branch Watershed, Tennessee - Comment*. Water Resources Research, **30**(5): p. 1631-1631.
- Gwo, J.P., P.M. Jardine, G.V. Wilson, and G.T. Yeh. 1994, *Modeling small-scale physical non-equilibrium and large-scale preferential fluid and solute transport in a structured soil*. in *X International Conference on Computation Methods in Water Resources*. Heidelberg, Germany.
- Gwo, J.P., P.M. Jardine, G.T. Yeh, and G.V. Wilson, 1994, *MURF user's guide: A finite element model of multiple-pore-region flow through variably saturated subsurface media*. Oak Ridge National Laboratory: Oak Ridge, TN.
- Gwo, J.P., P.M. Jardine, G.V. Wilson, and Y. G.T., 1995, *A multiple-pore-region concept for modeling mass transfer in subsurface media*. Journal of Hydrology, **164**: 217-237.

- Gwo, J.P., P.M. Jardine, G.T. Yeh, and G.V. Wilson, 1995, MURT user's guide: A finite element model of multiple-pore-region transport through variably saturated subsurface media, ORNL/GWPO-015, Oak Ridge National Laboratory, Oak Ridge, TN
- Gwo, J.P., P.M. Jardine, G.V. Wilson, and G.T. Yeh, 1996, *Using a multiregion model to study the effects of advective and diffusive mass transfer on local physical nonequilibrium and solute mobility in a structured soil*. Water Resources Research, **32**: 561-570.
- Gwo, J.P., R. O'Brien, and P.M. Jardine, 1998, *Mass transfer in structured porous media: embedding mesoscale structure and microscale hydrodynamics in a two-region model*. Journal of Hydrology, **208**: 204-222.
- Gwo, J.P., G.V. Wilson, P.M. Jardine, and E.F. D'Azevedo, 1997, Modeling subsurface contaminant reactions and transport at the watershed scale, ORNL/CP--95547,
- Gwo, J.P., E.F. D'Azevedo, H. Frenzel, M.A. Mayes, G.T. Yeh, P.M. Jardine, K.M. Salvage, and F.M. Hoffman, 2001, *HBGC123D: A high performance computer model of coupled hydrological and biogeochemical processes*. Computers and Geosciences, **27**: 1231-1242.
- Halbrook, R.S., L.A. Lewis, R.I. Aulerich, and S.J. Bursian, 1997, *Mercury accumulation in mink fed fish collected from streams on the Oak Ridge Reservation*. Archives of Environmental Contamination and Toxicology, **33**(3): p. 312-316.
- Halbrook, R.S., R.L. Brewer, and D.A. Buehler, 1999, *Ecological risk assessment in a large river-reservoir: 7. Environmental contaminant accumulation and effects in great blue heron*. Environmental Toxicology and Chemistry, **18**(4): p. 641-648.
- Han, F.X., Su, Y., Monts, D.L., Waggoner, C.A. and Plodinec, M.J., 2006. *Binding, distribution, and plant uptake of mercury in a soil from Oak Ridge, Tennessee, USA*. Science of the Total Environment, The, **368**(2): 753-768.
- Hanson, P.J. and C.T. Garten, Jr., 1992, *Deposition of H15NO3 vapour to white oak, red maple and loblolly pine foliage: experimental observations and a generalized model*. New Phytologist, **122**: 329-337.
- Hanson, P.J., S.D. Wullschleger, S.A. Bohlman, and D.E. Todd, 1993, *Seasonal and Topographic Patterns of Forest Floor Co2 Efflux from an Upland Oak Forest*. Tree Physiology, **13**(1): p. 1-15.
- Hanson, P.J. and W.A. Hoffman, 1994, *Emissions of Nonmethane Organic-Compounds and Carbon-Dioxide from Forest Floor Cores*. Soil Science Society of America Journal, **58**(2): p. 552-555.
- Hanson, P.J., D.E. Todd, N.T. Edwards, and M.A. Huston, 1994, Field performance of the Walker Branch throughfall displacement experiment, CONF-9410327--1, Oak Ridge National Laboratory, Oak Ridge, TN
- Hanson, P.J., D.E. Todd, and K.M. Harter, 1995, *The Walker Branch throughfall displacement experiment: An overview, field performance data, and initial growth responses*. Bulletin of the Ecological Society of America, **76**(2): p.

- Hanson, P.J., 1998, Description and field performance of the Walker Branch throughfall displacement experiment: 1993--1996, ORNL/TM--13586, Oak Ridge National Laboratory, Oak Ridge, TN
- Hanson, P.J., D.E. Todd, and J.S. Amthor, 2001, *A six-year study of sapling and large-tree growth and mortality responses to natural and induced variability in precipitation and throughfall*. *Tree Physiology*, **21**(6): p. 345-358.
- Hanson, P.J., 2001, Walker Branch Throughfall Displacement Experiment Data Report: Site Characterization, System Performance, Weather, Species Composition, and Growth, ORNL/CDIAC-134, Oak Ridge, National Laboratory, Oak Ridge, TN
- Hanson, P.J., M.A. Huston, and D.E. Todd, 2003, *Walker Branch throughfall displacement experiment*, in *North American Temperate Deciduous Forest Responses to Changing Precipitation Regimes*, P.J. Hanson and S.D. Wullschleger, Editors, Springer-Verlag: New York. p. 8-31.
- Hanson, P.J. and F.M. O'Hara, 2003, *Introduction*, in *North American Temperate Deciduous Forest Responses to Changing Precipitation Regimes*, P.J. Hanson and S.D. Wullschleger, Editors. Springer-Verlag: New York. p. 3-7.
- Hanson, P.J., E.G. O'Neill, M.L.S. Chambers, J.S. Riggs, J.D. Joslin, and M.H. Wolfe, 2003, *Soil respiration and litter decomposition*, in *North American Temperate Deciduous Forest Responses to Changing Precipitation Regimes*, P.J. Hanson and S.D. Wullschleger, Editors. Springer-Verlag: New York. p. 163-189.
- Hanson, P.J., D.E. Todd, D.W. Johnson, and J.D. Joslin, 2003, *Responses of Eastern Deciduous Forests to Precipitation Change*, in *Changing Precipitation Regimes and Terrestrial Ecosystems: A North American Perspective*, J.F. Weltzin and G.R. McPherson, Editors. University of Arizona Press. p. 164-179.
- Hanson, P.J., D.E. Todd, and J.D. Joslin, 2003, *Canopy production*, in *North American Temperate Deciduous Forest Responses to Changing Precipitation Regimes*, P.J. Hanson and S.D. Wullschleger, Editors. Springer-Verlag: New York. p. 303-315.
- Hanson, P.J., D.E. Todd, D.C. West, N.T. Edwards, M.L. Tharp, and W.A. Simpson, 2003, *Tree and sapling growth and mortality*, in *North American Temperate Deciduous Forest Responses to Changing Precipitation Regimes*, P.J. Hanson and S.D. Wullschleger, Editors. Springer-Verlag: New York. p. 255-273.
- Hanson, P.J. and S.D. Wullschleger (editors), 2003, *North American Temperate Deciduous Forest Responses to Changing Precipitation Regimes*. Ecological Studies. Vol. 166, New York: Springer-Verlag. 472 p.
- Hanson P.J., J.S. Amthor, S.D. Wullschleger, K.B. Wilson, R.F. Grant, A. Hartley, D. Hui, E.R. Hunt, Jr., D.W. Johnson, J.S. Kimball, A.W. King, Y. Luo, S.G. McNulty, G. Sun, P.E. Thornton, S.S. Wang, M. Williams, and R.M. Cushman. 2004. *Oak forest carbon and water simulations: Model intercomparisons and evaluations against independent data*. *Ecological Monographs* **74**:443-489.

- Hanson, P.J., S.D. Wullschlegel, R.J. Norby, T.J. Tschaplinski, and C.A. Gunderson. 2005. *Importance of changing CO<sub>2</sub>, temperature, precipitation and ozone on carbon and water cycles of an upland oak forest: Incorporating experimental results into model simulations*. *Global Change Biology* **11**: 1402-1423.
- Harley, P.C. and D.D. Baldocchi, 1995, *Scaling carbon dioxide and water vapor exchange from leaf to canopy in a deciduous forest: leaf level parameterization*. *Plant, Cell and Environment*, **18**: 1146-1156.
- Harley, P., A. Guenther, and P. Zimmerman, 1997, *Environmental controls over isoprene emission in deciduous oak canopies*. *Tree Physiology*, **17**(11): p. 705.
- Harris, W.F., R.A. Goldstein, and G.S. Henderson. 1973, *Analysis of forest biomass pools, annual primary production and turnover of biomass for a mixed deciduous forest watershed*. in *IUFRO Symposium Working Party on Forest Biomass*. University of Maine Press.
- Harris, W.F., P. Sollins, N.T. Edwards, B.E. Dinger, and H.H. Shugart, 1975, *Analysis of carbon flow and productivity in a temperate deciduous forest ecosystem*, in *Productivity of World Ecosystems*, D.E. Reichle, J.F. Franklin, and D.W. Goodall, Editors, National Academy of Sciences: Washington, DC. p. 116-122.
- Harris, W.F., J. Kinerson, R.S., and N.T. Edwards, 1977, *Comparison of belowground biomass of natural deciduous forest and loblolly pine plantations*. *Pedobiologia*, **17**: 369-381.
- Harris, W.F., J. Kinerson, R.S., and N.T. Edwards, 1977, *Comparison of belowground biomass of natural deciduous forests and loblolly pine plantations*, in *The Belowground Ecosystem: A Synthesis of Plant-Associated Processes*, J.K. Marshall, Editor, Colorado State University: Ft. Collins, CO. p. 29-36.
- Harris, W.F. 1977, *Walker Branch Watershed: Site description and research scope*. in *Watershed Research in Eastern North America. A Workshop to Compare Results*. Edgewater, Maryland: Chesapeake Bay Center for Environmental Studies, Smithsonian Institution.
- Harrison, R.B. and D.W. Johnson. 1986, *Atmospheric deposition and cation leaching*. in *Proceedings of Mid-South Symposium on Acid Deposition*. Monticello, AR: University of Arkansas.
- Harrison, R.B. and D.W. Johnson, 1986, Factors affecting sulfate adsorption in several forest soils, TVA/ONRED AWR-87/15,
- Harrison, R.B., D.W. Johnson, and D.E. Todd, 1989, *Forest soil sulfur pools and sulfate adsorption and desorption capacity following elevated inputs of sulfate*, in *Effects of Air Pollution on Western Forests*, R.K. Olson and A.S. Lefohn, Editors, Air and Waste Management Association: Pittsburg.
- Harrison, R.B., D.W. Johnson, and D.E. Todd, 1989, *Sulfate adsorption and desorption reversibility in a wide variety of forest soils*. *Journal of Environmental Quality*, **18**: 419-426.

- Harrison, R.B. and D.W. Johnson. 1989, *Sulfur pools, Soil properties, and sulfate adsorption in a variety of forest soils*. in *Proceedings of the Western Phosphate/Sulfur Conference*. Puyallup, WA.: Washington State University, Puyallup Research and Extension Center.
- Hart, D.R., P.J. Mulholland, E.R. Marzolf, D.L. DeAngelis, and S.P. Hendricks, 1999, *Relationships between hydraulic parameters in a small stream under varying flow and seasonal conditions*. *Hydrologic Processes*, **13**: 1497-1510.
- Henderson, G.S., 1972, Litter biomass and nutrient contents in four forest stands on Walker Branch Watershed, EDFB-IBP Memo Report No. 71-91, Oak Ridge National Laboratory, Oak Ridge, Tennessee
- Henderson, G.S., R.M. Anderson, and S.H. Anderson, 1974, Walker Branch Watershed: a study of terrestrial and aquatic system interaction. IN: Environmental Sciences Division annual progress report for period ending September 30, 1973, ORNL--4935, Oak Ridge National Laboratory, Oak Ridge, TN
- Henderson, G.S. and W.F. Harris, 1975, *An ecosystem approach to characterization of the nitrogen cycle in a deciduous forest watershed*, in *Forest Soils and Land Management*, B. Bernier and C.H. Winget, Editors, Les Presses de l'Universite Laval: Quebec. p. 179-193.
- Henderson, G.S., D.D. Huff, and T. Grizzard. 1977, *Hydrologic characteristics of Walker Branch Watershed*. in *Watershed Research in Eastern North America. A Workshop to Compare Results*. Edgewater, Maryland: Chesapeake Bay Center for Environmental Studies, Smithsonian Institution.
- Henderson, G.S., A. Hunley, and W. Selvidge. 1977, *Nutrient discharge from Walker Branch Watershed*. in *Watershed Research in Eastern North America: A workshop to compare results; Chesapeake Bay Center for Environmental Studies*. Edgewater, Maryland: Smithsonian Institution.
- Henderson, G.S., W.F. Harris, D.E. Todd, Jr., and T. Grizzard, 1977, *Quantity and chemistry of throughfall as influenced by forest type and season*. *Journal of Ecology*, **65**: 364-374.
- Henderson, G.S., W.T. Swank, J.B. Waide, and C.C. Grier, 1978, *Nutrient budgets of Appalachian and Cascade region watersheds: a comparison*. *Forest Science*, **24**: 385-397.
- Hicks, B.B., D.R. Matt, R.T. McMillen, J.D. Womack, and R.E. Shetter. 1983, *Eddy fluxes of nitrogen oxides to a deciduous forest in complex terrain, "Meteorology of Acid Deposition"*. in *Meteorology of Acid Deposition*. Hartford, Connecticut: Air Pollution Control Association.
- Hicks, B.B., M.L. Wesley, S.E. Lindberg, and B. S.M. 1986, *Proceedings of the Dry Deposition Workshop of the National Acid Precipitation Assessment Program*. in *Dry Deposition Workshop of the National Acid Precipitation Assessment Program*. March 25-27, 1986. Oak Ridge, TN: NOAA/ATDD.

- Hicks, B.B., D.R. Matt, R.T. McMillen, J.D. Womack, M.L. Wesely, R.L. Hart, D.R. Cook, S.E. Lindberg, R.G. de Pena, and D.W. Thomson, 1989, *A field investigation of sulfate fluxes to a deciduous forest*. Journal of Geophysical Research, **94**: 13003-13011.
- Hill, W.R., P.J. Mulholland, and E.R. Marzolf, 2001, *Stream ecosystem responses to forest leaf emergence in spring*. Ecology, **82**(8): p. 2306-2319.
- Hoffman, W.A., Jr., S.E. Lindberg, and R.R. Turner, 1980, *Precipitation acidity: the role of the forest canopy in acid exchange*. Journal of Environmental Quality, **9**(1): p. 95-100.
- Hoffman, W.A., S.E. Lindberg, and R.R. Turner, 1980, *Some observations of organic constituents in rain above and below a forest canopy*. Environmental Science and Technology, **14**: 999-1002.
- Holmgren, M., M.A. Huston, J. Quiles, and S. Warner, 1994, *Spatial distribution of understory plants along gradients of water and light availability*. Bulletin of the Ecological Society of America, **75**(2): p.
- Hosker, R.P. and S.E. Lindberg, 1982, *Review: atmospheric deposition and plant assimilation of particles and gases*. Atmospheric Environment, **16**: 889-910.
- Huff, D.D. and C.L. Begovich, 1976, An evaluation of two hydrograph separation methods of potential use in regional water quality assessment, ORNL/TM-5258, Oak Ridge National Laboratory, Oak Ridge, TN
- Huff, D.D., G.S. Henderson, C.L. Begovich, R.J. Luxmoore, and J.R. Jones. 1977, *Application of analytic and mechanistic hydrologic models to the study of Walker Branch Watershed*. in *Lake Jackson watershed study: description of sites, methodology and scope of research*; Edgewater, MD.
- Huff, D.D. 1977, *The application of analytical and mechanistic hydrologic models to the study of Walker Branch Watershed*. in *Watershed Research in Eastern North America. A Workshop to Compare Results*. Edgewater, Maryland: Chesapeake Bay Center for Environmental Studies, Smithsonian Institution.
- Huff, D.D., R.J. Luxmoore, and C. Begovich, 1977, TEHM: A terrestrial ecosystem hydrology model, ORNL/NSL/EATC-27, Oak Ridge National Laboratory, Oak Ridge, TN
- Huston, M.A. and T.A. Fontaine, 1994, *Predicting Temporal and Spatial Flood Dynamics Using a Precalibrated Model*. Water Resources Bulletin, **30**(4): p. 651-661.
- Huston, M.A., 2001, Final Report: Use of Multi-Scale Biophysical Models for Ecological Assessments: Applications in the Southeastern United States, University of Tennessee, Knoxville, TN
- Huston, M.A. 2003. *Understanding the effects of fire and other mortality-causing disturbances on species diversity*. Pages 51-84 in *Fire in South-Western Australian Forests: Impacts and Management*, N.C. Burrows and I. Abbott, eds. Backhuys Publishers, Leiden, The Netherlands.

- Huston, M.A., D.E. Todd, and D.G. Barlar, 2003, *Long-term forest dynamics and tree growth at the TDE site on Walker Branch Watershed*, in *North American Temperate Deciduous Forest Responses to Changing Precipitation Regimes*, P.J. Hanson and S.D. Wullschleger, Editors. Springer-Verlag: New York. p. 417-432.
- Huston, M.A., M. Holmgren, and M. Kreh. 2003. *Responses of understory tree seedling populations to spatiotemporal variation in soil moisture*. Pages 417-432 in *Responses of Eastern Deciduous Forest to Drought*, P.J. Hansen, and S. Wullschleger, eds., Oxford University Press.
- Huston, M.A. 2005. *The three phases of land use change: implications for biodiversity*. *Ecological Applications* **15**: 1864-1878.
- Hutchison, B.A., D.R. Matt, R.T. McMillen, L.J. Gross, S.J. Tajchman, and J.M. Norman, 1986, *The architecture of a deciduous forest canopy in eastern Tennessee*. *Journal of Ecology*, **74**: 635-676.
- Hutchison, B.A. and D.R. Matt, 1977, *The distribution of solar radiation within a deciduous forest*. *Ecological Monographs*, **47**: 185-207.
- Hutchison, B.A., D.R. Matt, and R.T. McMillen, 1980, *Effects of sky brightness distribution upon penetration of diffuse radiation through canopy gaps in a deciduous forest*. *Agricultural Meteorology*, **22**: 137-147.
- Hylander, L.D. and Plath, D., 2006. *Microscopy and certification as tools for environmentally benign, mercury-free small-scale gold mining*. *Science of the Total Environment*, **368(1)** : 371-383.
- Jardine, P.M., G.V. Wilson, and R.J. Luxmoore, 1988, *Modeling the transport of inorganic ions through undisturbed soil columns from two contrasting watersheds*. *Soil Science Society of America Journal*, **52**:1252-1259.
- Jardine, P.M., N.L. Weber, and J.F. McCarthy, 1989, *Mechanisms of dissolved organic carbon adsorption on soil*. *Soil Science Society America Journal*, **53**: 1378-1385.
- Jardine, P.M., G.V. Wilson, R.J. Luxmoore, and J.F. McCarthy, 1989, *Transport of inorganic and natural organic tracers through an isolated pedon in a forest watershed*. *Soil Science Society of America Journal*, **53**: 317-323.
- Jardine, P.M., G.V. Wilson, J.F. McCarthy, R.J. Luxmoore, and D.L. Taylor, 1990, *Hydrogeochemical processes controlling the transport of dissolved organic carbon through a forested hillslope*. *Journal of Contaminant Hydrology*, **6**: 3-19.
- Jardine, P.M., G.V. Wilson, and R.J. Luxmoore, 1990, *Unsaturated solute transport through a forest soil during rain events*. *Geoderma*, **46**: 103-118.
- Jardine, P.M., 1991, *Modeling nonequilibrium reactions of inorganic solutes in soil columns*, in *Rates of Soil Chemical Processes*, D.L. Sparks and D.L. Suarez, Editors, Soil Sci. Soc. Am: Madison, WI. p. 255-279.

- Jardine, P.M., G.K. Jacobs, and J.D. O'Dell, 1993, *Unsaturated transport processes in undisturbed heterogeneous porous media I Inorganic contaminants*. Soil Science Society of America Journal, **57**: 945-953.
- Jardine, P.M., G.K. Jacobs, and G.V. Wilson, 1993, *Unsaturated transport processes in undisturbed heterogeneous porous media: II Co-contaminants*. Soil Science Society of America Journal, **57**: 954-962.
- Jardine, P.M. and D.L. Taylor, 1994, *Fate and Transport of Ethylenediaminetetraacetate Chelated Contaminants in Subsurface Environments*, in *Soil Environmental Chemistry*, D.L. Sparks, Editor, Elsevier Science Publishers: The Netherlands.
- Jardine, P.M., R. O'Brien, G.V. Wilson, and J.P. Gwo, 1998, *Experimental techniques for confirming and quantifying physical nonequilibrium processes in soils*, in *Physical Nonequilibrium in Soils: Modeling and Application*, H.M. Selim and L. Ma, Editors, Ann Arbor Press, Inc: Chelsea, Michigan.
- Jardine, P.M., S.E. Fendorf, M.A. Mayes, I.L. Larsen, S.C. Brooks, and W.B. Bailey, 1999, *Fate and transport of hexavalent chromium in undisturbed heterogeneous soil*. Environmental Science & Technology, **33**: 2939-2944.
- Jardine, P.M., W.E. Sanford, J.P. Gwo, O.C. Reedy, D.S. Hicks, R.J. Riggs, and W.B. Bailey, 1999, *Quantifying diffusive mass transfer in fractured shale bedrock*. Water Resources Research, **35**: 2015-2030.
- Jardine, P.M., S.C. Brooks, G.V. Wilson, and W.E. Sanford, 2000, *Basic research strategies for resolving remediation needs in contaminated fractured media*, in *Dynamics of Fluids in Fractured Rocks*, B. Faybishenko, Editor, American Geophysical Union. p. 389-400.
- Jardine, P.M., R.J. Luxmoore, J.P. Gwo, and G.V. Wilson, 2000, *Characterization and monitoring of unsaturated flow and transport processes in structured soils*, in *Vadose Zone: Science and Technological Solutions*, B.B. Looney and R.W. Falta, Editors. Battelle Press: Columbus, OH. p. 475-492.
- Jardine, P.M., G.V. Wilson, R.J. Luxmoore, and J.P. Gwo, 2001, *Conceptual Model of Vadose-Zone Transport in Fractured Weathered Shales*, in *Conceptual Models of Flow and Transport in the Fractured Vadose Zone*. National Research Council. National Academy Press: Washington D.C. p. 87-114.
- Jardine, P.M., T.L. Mehlhorn, I.L. Larsen, W.B. Bailey, S.C. Brooks, Y. Roh, and J.P. Gwo, 2002, *Influence of hydrological and geochemical processes on the transport of chelated-metals and chromate in fractured shale bedrock*. Journal of Contaminant Hydrology, **55**: 137-159.
- Jardine, P. M., M. A. Mayes, P. J. Mulholland, P. J. Hanson, J. R. Tarver, R. J. Luxmoore, J. F. McCarthy, and G. V. Wilson. 2006. *Vadose zone flow and transport of dissolved organic carbon at multiple scales in humid regimes*. Vadose Zone Journal **5**:140-152.

- Johnson, W.F. and W.R. Miller, 1970, Walker Branch Watershed Project proportional water sampler design report and operating manual, ORNL/TM-2839, Oak Ridge National Laboratory, Oak Ridge, TN
- Johnson, P.L. and W.T. Swank, 1973, *Studies of cation budgets in the Southern Appalachians on four experimental watersheds with contrasting vegetation*. Ecology, **54**: 70-80.
- Johnson, D.W. and N.T. Edwards, 1979, *The effects of stem girdling on biogeochemical cycles within a mixed deciduous forest in eastern Tennessee. II. Soil nitrogen mineralization and nitrification rates*. Oecologia, **40**: 259-272.
- Johnson, D.W. and G.S. Henderson, 1979, *Sulfate adsorption and sulfur fractions in a highly weathered soil under a mixed deciduous forest*. Soil Science, **128**: 34-40.
- Johnson, D.W., N.T. Edwards, and D.E. Todd, 1980, *Nitrogen mineralization, immobilization, and nitrification following urea fertilization on a forest soil under field and laboratory conditions*. Soil Science Society of America Journal, **44**: 610-616.
- Johnson, D.W., D.W. Cole, F.W. Horng, H. Van Miegroet, and D.E. Todd, 1981, Chemical characteristics of two forested ultisols and two forested inceptisols relevant to anion production and mobility, ORNL/TM-7646, Oak Ridge National Laboratory, Oak Ridge, Tennessee
- Johnson, D.W., G.S. Henderson, and D.E. Todd, 1981, *Evidence of modern accumulation of sulfate in an east Tennessee forested ultisol*. Soil Science, **132**: 422-426.
- Johnson, D.W., G.S. Henderson, D.D. Huff, S.E. Lindberg, D.D. Richter, D.S. Shriner, D.E. Todd, and J. Turner, 1982, *Cycling of organic and inorganic sulfur in a chestnut oak forest*. Oecologia, **54**: 141-148.
- Johnson, D.W., D.C. West, D.E. Todd, and L.K. Mann, 1982, *Effects of sawlog vs whole-tree harvesting on the nitrogen, phosphorus, potassium, and calcium budgets of an upland mixed oak forest*. Soil Science Society America Journal, **46**: 1304-1309.
- Johnson, D.W. and D.E. Todd, 1983, *Relationships among iron, aluminum, carbon, and sulfate in a variety of forest soils*. Soil Science Society America Journal, **47**: 792-800.
- Johnson, D.W. and D.E. Todd, 1984, *Effects of acid irrigation CO<sub>2</sub> evolution, extractable nitrogen, phosphorus and aluminum in a deciduous forest soil*. Soil Science Society of America Journal, **48**: 664-666.
- Johnson, D.W., H. Van Miegroet, D.W. Cole, and D.D. Richter. 1984, *The effects of acid precipitation and natural processes on cation leaching from four diverse forest soils*. in *Forest Soils and Treatment Impacts, the Sixth North American Forest Soils Conference*. Knoxville, Tennessee: University of Tennessee.
- Johnson, D.W., 1984, *Sulfur Cycling in forests*. Biogeochemistry, **1**: 29-44.

- Johnson, D.W., D.D. Richter, G.M. Lovett, and S.E. Lindberg, 1985, *The effects of atmospheric deposition on potassium, calcium and magnesium cycling in two deciduous forests*. Canadian Journal of Forest Research, **15**(5): p. 773-782.
- Johnson, D.W., D.W. Cole, F.W. Horng, and H. Van Miegroet, 1986, *Factors affecting anion movement and retention in four forest soils*. Soil Science Society of America Journal, **50**: 776-783.
- Johnson, D.W., H. Van Miegroet, J.M. Kelly, and D.D. Richter, 1986, *Sulfur cycling in five forest ecosystems*. Water, Air, and Soil Pollution, **30**: 965-979.
- Johnson, D.W., G.S. Henderson, and W.F. Harris. 1987, *Changes in aboveground biomass and nutrient content on Walker Branch Watershed from 1967 to 1983*. in *Sixth Central Hardwood Forest Conference*. Knoxville, Tennessee: University of Tennessee.
- Johnson, D.W. and D.E. Todd, 1987, *Nutrient export by leaching and whole-tree harvesting in a loblolly pine and mixed oak forest*. Plant and Soil, **109**: 99-109.
- Johnson, D.W., G.S. Henderson, and D.E. Todd, 1988, *Changes in nutrient distribution in forests and soils of Walker Branch Watershed, Tennessee, over an eleven-year period*. Biogeochemistry, **5**: 275-293.
- Johnson, D.W., J.M. Kelly, W.T. Swank, D.W. Cole, H. Van Miegroet, J.W. Hornbeck, R.S. Pierce, and D. Van Lear, 1988, *The effects of leaching and whole-tree harvesting on cation budgets of several forests*. Journal of Environmental Quality, **17**: 418-424.
- Johnson, D.W., R.J. Olson, L.K. Mann, and D.E. Todd. 1989, *Twenty-year changes in biomass and nutrient distribution in forests of Walker Branch Watershed, Tennessee*. in *Seventh North American forest soils conference; 25 Jul 1988*. Vancouver, Canada.
- Johnson, D.W. and S.E. Lindberg, 1989, *Acidic deposition on Walker Branch Watershed*, in *Acid Precipitation*, D.C. Adriano and S.E. Lindberg, Editors, Springer-Verlag: New York.
- Johnson, D.W., R.I. Van Hook, and A.L. Ragan, 1989, *Analysis of Biogeochemical cycling in Walker Branch Watershed Processes*. D.C. Adriano and S.E. Lindberg, Editors, Springer-Verlag: New York.
- Johnson, D.W., R.J. Olson, L.K. Mann, and D.E. Todd. 1989, *Changes in forest biomass and nutrient distribution in Walker Branch Watershed from 1967 to 1987*. in *Seventh North American Forest Soils Conference, 25 Jul 1988*, Vancouver, B.C.: University of British Columbia.
- Johnson, D.W. and G.S. Henderson, 1989, *Terrestrial nutrient cycling*, in *Analysis of Biogeochemical Cycling Processes in Walker Branch Watershed*, D.W. Johnson and R.I. Van Hook, Editors, Springer-Verlag: New York. p. 233-300.
- Johnson, D.W. and D.E. Todd, 1990, *Nutrient Cycling in Forests of Walker Branch Watershed, Tennessee - Roles of Uptake and Leaching in Causing Soil Changes*. Journal of Environmental Quality, **19**(1): p. 97-104.

- Johnson, D.W. and S.E. Lindberg, eds., 1991, *Atmospheric Deposition and Forest Nutrient Cycling: A Synthesis of the Integrated Forest Study*. Ecological Series. Vol. 91, Springer-Verlag: New York. 707pp.
- Johnson, D.W., W.T. Swank, and J.M. Vose, 1993, *Simulated effects of atmospheric sulfur deposition on nutrient cycling in a mixed deciduous forest*. Biogeochemistry, **23**: 169-196.
- Johnson, D.W. and S.E. Lindberg, 1995, *Sources, sinks and cycling of Hg in forested ecosystems*. Water Air and Soil Pollution, **80**: 1069-1077.
- Johnson, D.W., P.J. Hanson, D.E. Todd, R.B. Susfalk, and C.F. Trettin, 1998, *Precipitation change and soil leaching: Field results and simulations from Walker Branch Watershed, Tennessee*. Water Air and Soil Pollution, **105**(1-2): p. 251-262.
- Johnson, D.W., 1999, *Simulated nitrogen cycling response to elevated CO<sub>2</sub> in Pinus taeda and mixed deciduous forests*. Tree Physiology, **19**(4-5): p. 321-327.
- Johnson, D.W., R.B. Susfalk, H.L. Gholz, and P.J. Hanson, 2000, *Simulated effects of temperature and precipitation change in several forest ecosystems*. Journal of Hydrology, **235**(3-4): p. 183-204.
- Johnson, D.W., P.J. Hanson, and D.E. Todd, 2002, *The effects of throughfall manipulation on soil leaching in a deciduous forest*. Journal of Environmental Quality, **31**(1): p. 204-216.
- Johnson, D.W., P.J. Hanson, and D. Todd, E., 2003, *Nutrient availability and cycling*, in *North American Temperate Deciduous Forest Responses to Changing Precipitation Regimes*, P.J. Hanson and S.D. Wullschleger, Editors, Springer-Verlag: New York. p. 396-414.
- Johnson, D. W., D. E. Todd, Jr., C. F. Trettin, and J. S. Sedinger. 2007. *Soil carbon and nitrogen changes in forests of Walker Branch Watershed, 1972-2004*. Soil Science Society of America Journal 71:1639-1646 (doi:10.2136/sssaj2006.0365).
- Johnson, D. W., D. E. Todd, Jr., C. F. Trettin, and P. J. Mulholland. 2008. *Decadal changes in potassium, calcium, and magnesium in a deciduous forest soil*. Soil Science Society of America Journal 72: 1795-1805.
- Jones, J.R., R.J. Luxmoore, P.M. Jardine, and G.V. Wilson, 1990, *Hydrology of a Forested Hillslope During Storm Events*. Geoderma, **46**(1-3): p. 119-138.
- Jones, J.B. and P.J. Mulholland, 1998, *Carbon dioxide variation in a hardwood forest stream: An integrative measure of whole catchment soil respiration*. Ecosystems, **1**(2): p. 183-196.
- Jones, J.B., Jr. and P.J. Mulholland, 1998, *Influence of drainage basin topography and elevation on carbon dioxide and methane supersaturation of stream water*. Biogeochemistry, **40**: 57-72.
- Jones, J.B. and P.J. Mulholland, 1998, *Methane input and evasion in a hardwood forest stream: Effects of subsurface flow from shallow and deep pathways*. Limnology and Oceanography, **43**(6): p. 1243-1250.

- Jones, D.S., 2000, *Radiological benchmarks for effects on aquatic biota at the Oak Ridge reservation*. Human and Ecological Risk Assessment, **6**(5): p. 789-807.
- Joslin, J.D., M.H. Wolfe, and P.J. Hanson, 2001, *Factors controlling the timing of root elongation intensity in a mature upland oak stand*. Plant and Soil, **228**(2): p. 201-212.
- Joslin, J.D. and M.H. Wolfe, 2003, *Fine-root growth response*, in *North American Temperate Deciduous Forest Responses to Changing Precipitation Regimes*, P.J. Hanson and S.D. Wullschlegel, Editors, Springer-Verlag: New York. p. 274-302.
- Joslin, J.D., Gaudinski, J.B., Torn, M.S., Riley, W.J. and Hanson, P.J., 2006. *Fine-root turnover patterns and their relationship to root diameter and soil depth in a super(14)C-labeled hardwood forest*. New Phytologist, **172**(3) : 523-535.
- Kardol, P., D. E. Todd, P. J. Hanson, and P. J. Mulholland. *Long-term successional forest dynamics: species and community responses to climatic variability*. Vegetation Science (in press).
- Kelly, J.M., 1984, *Litterfall sulfur and nitrogen inputs as influenced by power plant proximity*. Water, Air, and Soil Pollution, **22**: 143-152.
- Kelly, J.M. and J.F. Meagher, 1986, *Nitrogen input/output relationships for three forested watersheds in eastern Tennessee*, in *Watershed Research Perspectives*, D.L. Correll, Editor, Smithsonian Press: Washington, DC. p. 360-391.
- Kelly, J.M. and J.F. Meagher, 1986, Nitrogen input/output relationships for three sites in eastern Tennessee, RP-1727, Electric Power Research Institute, Palo Alto, CA.
- Kim, K.-H. and S.E. Lindberg, 1994, *High-precision measurements of mercury vapor in air: Design of a six-port-manifold mass flow controller system and evaluation of mass flow errors at atmospheric pressure*. Journal Geophysical Research, Atmospheres, **99**: 5379-5384.
- Kim, K.H. and S.E. Lindberg, 1995, *Design and initial tests of a dynamic enclosure chamber for measurements of vapor-phase mercury fluxes over soils*. Water Air and Soil Pollution, **80**: 1059-1068.
- Kim, K.H., S.E. Lindberg, and T.P. Meyers, 1995, *Micrometeorological measurements of mercury fluxes over background forest soils in eastern Tennessee*. Atmospheric Environment, **27**: 267-282.
- Kooner, Z.S., P.M. Jardine, and S. Feldman, 1995, *Competitive surface complexation reactions of  $SO_4^{2-}$  and natural organic carbon on soil*. Journal of Environmental Quality, **24**(4): p. 656-662.
- Laboratory, A.T.D., 1972, *Daily, monthly, and annual climatological data for Oak Ridge, Tennessee, townsite and area stations. January 1951 through 1971*. ATDL Report 61. Oak Ridge, Tennessee: Atmospheric Turbulence and Diffusion Laboratory.
- Lafon, C.W., M.A. Huston, and S.P. Horn, 2000, *Effects of agricultural soil loss on forest succession rates and tree diversity in east Tennessee*. Oikos, **90**(3): p. 431-441.

- Lee, R.R., R.H. Ketelle, J.M. Bownds, and T.A. Rizk, 1992, *Aquifer Analysis and Modeling in a Fractured, Heterogeneous Medium*. Ground Water, **30**(4): p. 589-597.
- Lietzke, D.A., 1994, Soils of Walker Branch Watershed., 1994, ORNL/TM-11606, Oak Ridge National Laboratory, Oak Ridge, TN
- Lindberg, S.E., A.W. Andren, R.J. Raridon, and W. Fulkerson, 1975, *Mass balance of trace elements in Walker Branch Watershed: relation to coal-fired steam plants*. Environmental Health Perspectives, **12**: 9-18.
- Lindberg, S.E., R.R. Turner, N.M. Ferguson, and D. Matt, 1977, *Walker Branch Watershed element cycling studies: Collection and analysis of wetfall for trace elements and sulfate*. in *Watershed Research in Eastern North America. A Workshop to Compare Results*, Edgewater, Maryland: Chesapeake Bay Center for Environmental Studies, Smithsonian Institution.
- Lindberg, S.E., R.C. Harriss, R.R. Turner, D.S. Shriner, and D.D. Huff, 1979, Mechanisms and rates of atmospheric deposition of trace elements and sulfate to a deciduous forest watershed, ORNL/TM-6674, Oak Ridge National Laboratory, Oak Ridge, TN
- Lindberg, S.E. and R.C. Harriss, 1980, *Trace metal solubility in aerosols produced by coal combustion*, In: *Environmental and Climatic Impact of Coal Utilization*, J. Singh and A. Deepak, Editors, Academic Press: New York. p. 589-608.
- Lindberg, S.E., R.R. Turner, D.S. Shriner, and D.D. Huff. 1981, *Atmospheric deposition of heavy metals and their interaction with acid precipitation in a North American deciduous forest*. In: *Third International Conference on Heavy Metals in the Environment*. CEP Publishers.
- Lindberg, S.E., 1981, *The relationship between manganese and sulfate ions in rain*. Atmospheric Environment, **15**: 1749-1753.
- Lindberg, S.E. and R.C. Harriss, 1981, *The role of atmospheric deposition in an eastern-united-states deciduous forest*. Water Air and Soil Pollution, **16**(1): p. 13-31.
- Lindberg, S.E. and G.M. Lovett, 1982, *Application of surrogate surfaces and leaf extraction methods to estimation of dry deposition to plant canopies*, In: *Precipitation Scavenging, Dry Deposition and Resuspension*, H.R. Pruppacher, R.G. Semonin, and W.G.N. Slinn, Editors, Elsevier Science Publishers: New York. p. 837-848.
- Lindberg, S.E., R.C. Harriss, and R.R. Turner, 1982, *Atmospheric deposition of metals to a forest canopy*. science, **215**: 1609-1611.
- Lindberg, S.E., 1982, *Factors influencing trace metal, sulfate, and hydrogen ion concentrations in rain*. Atmospheric Environment, **16**: 1701-1709.
- Lindberg, S.E., D.S. Shriner, and W.A. Hoffman, Jr., 1982, *The interaction of wet and dry deposition with the forest canopy*, in *Acid Precipitation: Effects on Ecological Systems*, Ann Arbor Science Publishers: Ann Arbor. p. 385-409.

- Lindberg, S.E., R.R. Turner, and G.M. Lovett. 1982, *Processes of atmospheric deposition of metals and acids to forests*. In: *Air Pollution Control Association Annual Meeting*., New Orleans: Air Pollution Control Association.
- Lindberg, S.E., R.R. Turner, and G.M. Lovett, 1983, *Mechanisms of the flux of acidic compounds and heavy metals onto receptors in the environment*, In: *Acid Precipitation: Origin and Effects*, J. Lobel and W.R. Thiel, Editors, Verlag des Vereins Deutscher Ingenieure: Dusseldorf. p. 165-172.
- Lindberg, S.E. and R.C. Harriss, 1983, *Water and acid soluble metals in atmospheric particles*. Journal of Geophysical Research, **88**: 5091-5100.
- Lindberg, S.E., J.M. Coe, and W.A. Hoffman, 1984, *Dissociation of weak acids during Gran plot free acidity titrations*. Tellus, **36B**:186-191.
- Lindberg, S.E., G.M. Lovett, E.A. Bondietti, and D. C.I. 1984, *Recent field studies of dry deposition to surfaces in plant canopies*. in *Air Pollution Control Association Meeting Proceedings*. Air Pollution Control Association.
- Lindberg, S.E. and G.M. Lovett, 1985, *Field measurements of particle dry deposition rates to foliage and inert surfaces in a forest canopy*. Environmental Science and Technology, **19**(3): p. 238-244.
- Lindberg, S.E., G.M. Lovett, D.D. Richter, and D.W. Johnson, 1986, *Atmospheric deposition and canopy interactions of major ions in a forest*. Science, **231**: 141-145.
- Lindberg, S.E., 1986, *Atmospheric deposition and element cycling research at Walker Branch Watershed, Tennessee*, in *Waldschaden Forest Decline--German and U.S. American Research into Causes*. Kernforschungsanlage (KFA): Julich. p. 112-114.
- Lindberg, S.E. and S.B. McLaughlin, 1986, *Current problems and future research needs in the acquisition, interpretation, and application of data in terrestrial vegetation -air pollutant interaction studies*, In: *Air Pollutants and Their Effects on the Terrestrial Ecosystem*, A. Legge and S.V. Krupa, Editors, John Wiley and Sons: New York. p. 449-504.
- Lindberg, S.E. and J. Meiwis, 1987, *Deposition and canopy interactions of airborne nitrate*, In: *Proceedings Advanced NATO Workshop on Effects of Acidic Deposition on Ecosystems*, T.C. Hutchinson and K. Meema, Editors, Springer-Verlag: New York.
- Lindberg, S.E. and T.C. Hutchinson, eds. 1987, *Proceedings of the Sixth International Conference on Heavy Metals in the Environment, New Orleans, LA, September 15-18, 1987*. CEP Limited Publishers: Edinburgh.
- Lindberg, S.E. and R.R. Turner. 1987, *Trace metals in rain at forested sites in the eastern United States*. In: *Fourth International Conference on Heavy Metals in the Environment*. CEP Consultants Ltd. Publishers.
- Lindberg, S.E., G.M. Lovett, D.A. Schaefer, and M. Bredemeier, 1988, *Coarse aerosol deposition velocities and surface-to-canopy scaling factors from forest canopy throughfall*. Journal of Aerosol Science, **19**: 1187-1190.

- Lindberg, S.E. and R.R. Turner, 1988, *Factors influencing atmospheric deposition, stream export, and landscape accumulation of trace metals in four forested watersheds*. Water, Air, and Soil Pollution, **39**: 123-156.
- Lindberg, S.E. and C.T. Garten, Jr., 1988, *Sources of sulfur in forest canopy throughfall*. Nature, **336**: 148-151.
- Lindberg, S.E., 1989, *Application of surface analysis methods to studies of atmospheric deposition in forests*, In: *International Congress on Forest Decline Research: State of Knowledge and Perspectives*, B. Ulrich, Editor, Kernforschungszentrums Karlsruhe GmbH: Karlsruhe. p. 269-283.
- Lindberg, S.E., R.C. Harriss, W.A. Hoffman, G.M. Lovett, and R.R. Turner, 1989, *Atmospheric chemistry, deposition, and canopy interactions*, In: *Analysis of Biogeochemical Cycling Processes in Walker Branch Watershed*, D.W. Johnson and R.I. Van Hook, Editors, Springer Verlag: Berlin. p. 96-163.
- Lindberg, S.E., 1989, *Behavior of Cd, Mn, and Pb in forest canopy throughfall*, in *Control and Fate of Atmospheric Trace Metals*, J. Pacyna and B. Ottar, Editors, Kluwer Academic Publishers: Dordrecht, Holland. p. 233-258.
- Lindberg, S.E., M. Bredemeier, D.A. Schaefer, and L. Qi, 1990, *Atmospheric concentrations and deposition of nitrogen compounds and major ions during the growing season in conifer forests in the United States and West Germany*. Atmospheric Environment, **24A**: 2207-2220.
- Lindberg, S.E., A.L. Page, and S. Norton, eds., 1990, *Sources, Deposition, and Canopy Interactions*. Advances in Environmental Sciences. Vol. 3: Acidic Precipitation. Springer Verlag: New York. 332.
- Lindberg, S.E., R.R. Turner, T.P. Meyers, G.E. Taylor, and W.H. Schroeder, 1991, *Atmospheric Concentrations and Deposition of Hg to a Deciduous Forest at Walker Branch Watershed, Tennessee, USA*. Water Air and Soil Pollution, **56**: 577-594.
- Lindberg, S.E., T.P. Meyers, G.E. Taylor, R.R. Turner, and W.H. Schroeder, 1992, *Atmosphere-Surface Exchange of Mercury in a Forest - Results of Modeling and Gradient Approaches*. Journal of Geophysical Research-Atmospheres, **97**(D2): p. 2519-2528.
- Lindberg, S.E., C.T. Garten, Jr., J.N. Cape, and W. Ivens, 1992, *Can sulfate fluxes in forest canopy throughfall be used to estimate atmospheric sulfur deposition? - A summary of recent results*, in *Applications and Appraisals*, W.G.N. Slinn, Editor, Hemisphere Publishers: Washington, D. C. p. 1379-1390.
- Lindberg, S.E. and G.M. Lovett, 1992, *Deposition and forest canopy interactions of airborne sulfur - results from the integrated forest study*. Atmospheric Environment Part A-General Topics, **26**(8): p. 1477.

- Lindberg, S.E., R.R. Turner, T.P. Meyers, G.E. Taylor, and W.H. Schroeder, 1993, *Atmospheric concentrations and deposition of airborne hg to walker branch watershed (This article is an addition or correction to the article found in vol 56, pg 577, 1991)*. Water Air and Soil Pollution, **66**(1-2): p. 204.
- Lindberg, S.E., P.J. Hanson, K. Kim, and T.P. Meyers. 1994, *Air/surface exchange of mercury vapor in forests: Recent results of micrometeorological and chamber studies at Walker Branch watershed*. In: *Fifteenth annual meeting of the Society of Environmental Toxicology and Chemistry (SETAC)*. Denver, CO: Society of Environmental Toxicology and Chemistry.
- Lindberg, S.E., J.G. Owens, and W. Stratton, 1994, *Application of throughfall methods to estimate dry deposition of mercury*, In: *Mercury Pollution; Integration and Synthesis, Papers Presented at the International Conference on Mercury as a Global Pollutant, held June, 1992, in Monterey, CA*", J. Huckabee and C. Watras, Editors, Lewis Publishers: Boca Raton. p. 261-272.
- Lindberg, S.E., K.H. Kim, and J. Munthe, 1995, *The Precise Measurement of Concentration Gradients of Mercury in Air over Soils - a Review of Past and Recent Measurements*. Water Air and Soil Pollution, **80**(1-4): p. 383-392.
- Lindberg, S.E., P.J. Hanson, T.P. Meyers, and K.H. Kim, 1998, *Air/surface exchange of mercury vapor over forests - The need for a reassessment of continental biogenic emissions*. Atmospheric Environment, **32**(5): p. 895-908.
- Lovett, G.M. and S.E. Lindberg, 1984, *Dry deposition and canopy exchange in a mixed oak forest determined from analysis of throughfall*. Journal of Applied Ecology, **21**: 1013-1028.
- Lovett, G.M., S.E. Lindberg, D.D. Richter, and D.W. Johnson, 1985, *The effects of acidic deposition on cation leaching from 3 deciduous forest canopies*. Canadian Journal of Forest Research, **15**(6): p. 1055-1060.
- Lovett, G.M. and S.E. Lindberg, 1986, *Dry deposition of nitrate to a deciduous forest*. Biogeochemistry, **2**: 137-148.
- Lovett, G.M. and S.E. Lindberg, 1992, *Concentration and deposition of particles and vapors in a vertical profile through a forest canopy*. Atmospheric Environment, **26A**: 1469-1476.
- Lovett, G.M. and S.E. Lindberg, 1993, *Atmospheric deposition and canopy interactions of nitrogen in forests*. Canadian Journal of Forest Research, **23**: 1603-1616.
- Luxmoore, R.J., C.L. Begovich, and K.R. Dixon, 1976, DRYADS and DIFMAS: FORTRAN models for investigating solute uptake and incorporation into vegetation and litter, ORNL/NSF/EATC-26, Oak Ridge National Laboratory, Oak Ridge, TN
- Luxmoore, R.J., C.L. Begovich, and K.R. Dixon, 1978, *Modelling solute uptake and incorporation into vegetation and litter*. Ecological Modelling, **5**: 137-171.
- Luxmoore, R.J., D.D. Huff, R.K. McConathy, 1978, *Some measured and simulated plant water relations of yellow-poplar*. Forest Science, **24**: 327-341.

- Luxmoore, R.J., T. Grizzard, and M.R. Patterson, 1981, *Hydraulic properties of Fullerton cherty silt loam*. Soil Science Society of America Journal, **45**: 692-698.
- Luxmoore, R.J., T. Grizzard, and R.H. Strand, 1981, *Nutrient translocation in the outer canopy and understory of an eastern deciduous forest*. Forest Science, **27**: 505-518.
- Luxmoore, R.J., 1983, *Water budget of an eastern deciduous forest stand*. Soil Science Society of America Journal, **47**: 785-791.
- Luxmoore, R.J. and C.H. Abner, 1987, Field facilities for subsurface transport research, DOE/ER-0329, Oak Ridge National Laboratory, Oak Ridge, TN
- Luxmoore, R.J., P.M. Jardine, G.V. Wilson, J.R. Jones, and L.W. Zelazny, 1990, *Physical and chemical controls of preferred path flow through a forested hillslope*. Geoderma, **46**: 139-154.
- Luxmoore, R.J., G.V. Wilson, P.M. Jardine, and R.H. Gardner. 1990, *Use of percolation theory and Latin hypercube sampling in field-scale solute transport investigations*. in *First International Symposium on Forest Soils*. Harbin, CHINA: Northeast Forestry University.
- Luxmoore, R.J., M. Cunningham, L.K. Mann, and M.G. Tjoelker, 1993, *Urea Fertilization Effects on Nutrient-Uptake and Growth of Platanus-Occidentalis During Plantation Establishment*. Trees-Structure and Function, **7**(4): p. 250-257.
- Malhi, Y., D.D. Baldocchi, and P.G. Jarvis, 1999, *The carbon balance of tropical, temperate and boreal forests*. Plant, Cell and Environment, **22**(6): p. 715.
- Mankin, J.B. and P.G. Risser, 1983, Appalachian oak model for simulating primary production, 1983, ORNL/CSD/TM-206, Oak Ridge National Laboratory, Oak Ridge, TN
- Mann, L.K., P.D. Parr, L.R. Pounds, and R.L. Graham, 1996, *Protection of biota on nonpark public lands: Examples from the US Department of Energy Oak Ridge Reservation*. Environmental Management, **20**(2): p. 207-218.
- Mann, L.K., A.W. King, V.H. Dale, W.W. Hargrove, R. Washington-Allen, L.R. Pounds, and T.L. Ashwood, 1999, *The role of soil classification in geographic information system modeling of habitat pattern: Threatened calcareous ecosystems*. Ecosystems, **2**(6): p. 524-538.
- Mao, J., B. Wang, Y. Dai, F. I. Woodward, P. J. Hanson, and M. R. Lomas, 2007, *Improvements of a dynamic global vegetation model and simulations of carbon and water at an upland-oak forest*. Advances in Atmospheric Sciences, **24**(2): 311-322.
- Marchettini, N., M. Panzieri, and E.B.P. Tiezzi, 2001, *Effects of bioaccumulation of PCBs on biodiversity and distribution of fish in two creeks in east Tennessee (USA)*. Annali Di Chimica, **91**(7-8): p. 435-443.

- Martin, L.A., P.J. Mulholland, J.R. Webster, and H.M. Valett, 2001, *Denitrification potential in sediments of headwater streams in the southern Appalachian Mountains, USA*. Journal of the North American Benthological Society, **20**(4): p. 505-519.
- Marzolf, E.R., P.J. Mulholland, and A.D. Steinman, 1994, *Improvements to the diurnal upstream-downstream dissolved oxygen change technique for determining whole-stream metabolism in small streams*. Canadian Journal of Fisheries and Aquatic Sciences, **51**: 1591-1599.
- Matt, D.R., R.T. McMillen, J.D. Womack, and B.B. Hicks, 1987, *A comparison of estimated and measured SO<sub>2</sub> deposition velocities*. Water, Air, and Soil Pollution, **36**: 331-347.
- Mayer, R. and S.E. Lindberg. 1985, *Deposition on heavy metals to forest ecosystems -- their distribution and possible contribution to forest decline*. in *Fifth International Conference on Heavy Metals in the Environment*. CEP Consultants Ltd. Publishers.
- Mayes, M.A., P.M. Jardine, I.L. Larsen, S.C. Brooks, and S.E. Fendorf, 2000, *Multispecies contaminant transport in undisturbed columns of weathered, fractured saprolite*. Journal of Contaminant Hydrology, **45**: 243-265.
- McLaughlin, S.B., N.T. Edwards, and J.J. Beauchamp, 1977, *Spatial and temporal patterns in transport and respiratory allocation of [14C] sucrose by white oak (Quercus alba) roots*. Canadian Journal of Botany, **55**: 2971-2980.
- McLaughlin, S.B., R.K. McConathy, and B. Beste, 1979, *Seasonal changes in within-canopy allocation of 14C-photosynthate by white oak (Quercus alba L.)*. Forest Science, **25**: 361-370.
- McLaughlin, S.B. and R.K. McConathy, 1979, *Temporal and spatial patterns of carbon allocation by white oak canopies*. Canadian Journal of Botany, **57**: 1407-1413.
- McLaughlin, S.B., R.K. McConathy, R.L. Barnes, and N.T. Edwards, 1980, *Seasonal changes in energy allocation by white oak (Quercus alba L.)*. Canadian Journal of Forest Research, **10**: 379-388.
- McLaughlin, S.S.B., Nosal, M.M., Wullschleger, S.S.D. and Sun, G.G., 2007. *Interactive effects of ozone and climate on tree growth and water use in a southern Appalachian forest in the USA*. The New phytologist, **174**(1): 109-24.
- McMaster, W.M., 1967, Hydrologic data for the Oak Ridge area, Tennessee, U. S. Geological Survey Water Supply Paper 1839-N, U. S. Government Printing Office, Washington, D. C.
- Miller, G.R., Baldocchi, D.D., Law, B.D. and Meyers, T.P., 2007. *An analysis of soil moisture dynamics using multi-year data from a network of micrometeorological observation sites*. Advances in water resources, **30**(5): 1065-1081.
- Moore, M.D. and J.R. Nuckols, 1984, *Relationship Between Atmospheric Nitrogen Deposition and the Stream Nitrogen Profile*. Journal of Hydrology, **74**(1-2): p. 81-103.
- Moore, G.K., 1997, *Quantification of ground-water flow in fractured rock, Oak Ridge, Tennessee*. Ground Water, **35**(3): p. 478-482.

- Mulholland, P.J., J.W. Elwood, J.D. Newbold, L.A. Ferren, and J.R. Webster, 1985, *Phosphorus spiralling in a woodland stream: seasonal variations*. Ecology, **66**: 1012-1023.
- Mulholland, P.J., R.A. Minear, and J.W. Elwood, 1988, *Production of soluble, high molecular weight phosphorus and its subsequent uptake by stream detritus*. Verhandlungen Internationale Vereinigung für Theoretische und Angewandte Limnologie, **23**: 1190-1197.
- Mulholland, P.J., G.V. Wilson, and P.M. Jardine, 1990, *Hydrogeochemical response of a forested watershed to storms: Effects of preferential flow along shallow and deep pathways*. Water Resources Research, **26**: 3021-3036.
- Mulholland, P.J., A.D. Steinman, and J.W. Elwood, 1990, *Measurement of phosphorus uptake length in streams: comparison of radiotracer and stable PO<sub>4</sub> releases*. Canadian Journal of Fisheries and Aquatic Sciences, **47**: 2351-2357.
- Mulholland, P.J., 1991, Effects of flowpath variation on the hydrogeochemical response of Walker Branch Watershed to storms. IN: Fourth Tennessee water resources symposium; 24-26 Sep 1991; Knoxville, TN, CONF-9109234-1, Oak Ridge National Laboratory, Oak Ridge, TN.
- Mulholland, P. J. 1992. *Regulation of nutrient concentrations in a temperate forest stream: roles of upland, riparian, and instream processes*. Limnology and Oceanography **37**:1512-1526.
- Mulholland, P.J. and A.D. Rosemond, 1992, *Periphyton Response to Longitudinal Nutrient Depletion in a Woodland Stream - Evidence of Upstream Downstream Linkage*. Journal of the North American Benthological Society, **11**(4): p. 405-419.
- Mulholland, P.J., 1993, *Hydrometric and stream chemistry evidence of three storm flowpaths in Walker Branch Watershed*. Journal of Hydrology, **151**: p. 291-316.
- Mulholland, P.J., E.R. Marzolf, J.R. Webster, D.R. Hart, and S.P. Hendricks, 1997, *Evidence that hyporheic zones increase heterotrophic metabolism and phosphorus uptake in forest streams*. Limnology and Oceanography, **42**(3): p. 443-451.
- Mulholland, P.J., 1997, *Organic matter dynamics in the West Fork of Walker Branch, Tennessee, USA*. Journal of the North American Benthological Society, **16**(1): p. 61-67.
- Mulholland, P.J. and W.R. Hill, 1997, *Seasonal patterns in streamwater nutrient and dissolved organic carbon concentrations: Separating catchment flow path and in-stream effects*. Water Resources Research, **33**(6): p. 1297-1306.
- Mulholland, P.J., J.L. Tank, D.M. Sanzone, W.M. Wollheim, B.J. Peterson, J.R. Webster, and J.L. Meyer, 2000, *Food resources of stream macroinvertebrates determined by natural-abundance stable C and N isotopes and a N-15 tracer addition*. Journal of the North American Benthological Society, **19**(1): p. 145-157.
- Mulholland, P.J., J.L. Tank, D.M. Sanzone, W.M. Wollheim, B.J. Peterson, J.R. Webster, and J.L. Meyer, 2000, *Nitrogen cycling in a forest stream determined by a N-15 tracer addition*. Ecological Monographs, **70**(3): p. 471-493.

- Mulholland, P.J., C. S. Fellows, J.L. Tank, N. B. Grimm, J. R. Webster, S. K. Hamilton, E. Marti, L. Ashkenas, W. B. Bowden, W. K. Dodds, W. H. McDowell, M. J. Paul, and B.J. Peterson, 2001, *Inter-biome comparison of factors controlling stream metabolism*. *Freshwater Biology*, **46**: p. 1503-1517.
- Mulholland, P.J., J.L. Tank, J. R. Webster, W. B. Bowden, W. K. Dodds, S. V. Gregory, N. B. Grimm, S. K. Hamilton, S. L. Johnson, E. Marti, W. H. McDowell, J. L. Merriam, J. L. Meyer, B.J. Peterson, H. M. Valett, and W. M. Wollheim. 2002, *Can uptake length be determined by nutrient addition experiments? Results from an interbiome comparison study*. *Journal of the North American Benthological Society*, **46**(4): p. 544-560.
- Mulholland, P. J., H. M. Valett, J. R. Webster, S. A. Thomas, L. N. Cooper, S. K. Hamilton, and B. J. Peterson. 2004. *Stream denitrification and total nitrate uptake rates measured using a field <sup>15</sup>N isotope tracer approach*. *Limnology and Oceanography* **49**(3): 809-820.
- Mulholland, P. J. 2004. *The importance of in-stream uptake for regulating stream concentrations and outputs of N and P from a forested watershed: evidence from long-term chemistry records for Walker Branch Watershed*. *Biogeochemistry* **70**: 403-426.
- Mulholland, P. J., S. A. Thomas, H. M. Valett, J. R. Webster, and J. Beaulieu. 2006. *Effects of light on nitrate uptake in small forested streams: diurnal and day-to-day variations*. *Journal of the North American Benthological Society* **25**: 583-595.
- Mulholland, P. J., B. J. Roberts, W. R. Hill, and J. G. Smith. 2009. *Stream ecosystem responses to the 2007 spring freeze: unexpected effects of climate change*. *Global Change Biology* **15**:1767-1776.
- Nativ, R., 1996, *The brine underlying the Oak Ridge Reservation, Tennessee, USA: Characterization, genesis, and environmental implications*. *Geochimica Et Cosmochimica Acta*, **60**(5): p. 787-801.
- Nativ, R., A. Halleran, and A. Hunley, 1997, *Evidence for ground-water circulation in the brine-filled aquitard, Oak Ridge, Tennessee*. *Ground Water*, **35**(4): p. 647-659.
- Newbold, J.D., J.W. Elwood, R.V. O'Neill, and W. Van Winkle, 1981, *Measuring nutrient spiralling in streams*. *Canadian Journal of Fisheries and Aquatic Sciences*, **38**: 860-863.
- Newbold, J.D., R.V. O'Neill, J.W. Elwood, and W. Van Winkle, 1982, *Nutrient spiralling in streams: implications for nutrient limitation and invertebrate activity*. *American Naturalist*, **120**: 628-652.
- Newbold, J.D., J.W. Elwood, M.S. Schulze, R.W. Stark, and J.C. Barmeier, 1983, *Continuous ammonium enrichment of a woodland stream: uptake kinetics, leaf decomposition, and nitrification*. *Freshwater Biology*, **13**: 193-204.
- Newbold, J.D., J.W. Elwood, R.V. O'Neill, and A.L. Shelton, 1983, *Phosphorus dynamics in a woodland stream ecosystem: a study of nutrient spiralling*. *Ecology*, **64**: 1249-1265.
- Nuckols, J.R. and I. Moore, 1982, *The Influence of Atmospheric Nitrogen Influx upon the Stream Nitrogen Profile of a Relatively Undisturbed Forested Watershed*. *Journal of Hydrology*, **57**(1-2): p. 113-135.

- Nyquist, J.E. and M.S. Blair, 1991, *A Geophysical Tracking and Data Logging System - Description and Case-History*. Geophysics, **56**(7): p. 1114-1121.
- O'Neill, R.V., B.S. Ausmus, D.R. Jackson, R.I. Van Hook, P. Van Voris, C. Washburne, and A.P. Watson, 1977, *Monitoring terrestrial ecosystems by analysis of nutrient export*. Water, Air, and Soil Pollution, **8**: 271-277.
- O'Neill, E.G., D.W. Johnson, J. Ledford, and D.E. Todd, 2003, *Acute seasonal drought does not permanently alter mass loss and nitrogen dynamics during decomposition of red maple (*Acer rubrum* L.) litter*. Glob. Change Biol., **9**(1): p. 117-123.
- Parker, G., S.E. Lindberg, and J.M. Kelly, 1980, *Atmosphere canopy interactions in southeastern U.S. forested watersheds*, In: *Atmospheric Sulfur Deposition*, D.S. Shriner, C.R. Richmond, and S.E. Lindberg, Editors, Ann Arbor Science Publishers: Ann Arbor. p. 477-493.
- Peters, L.N., D.F. Grigal, J.W. Curlin, and W.J. Selvidge, 1970, Walker Branch Watershed Project: Chemical, physical, and morphological properties of the soils of Walker Branch Watershed, ORNL/TM-2968, Oak Ridge National Laboratory, Oak Ridge, TN
- Phillips, D.H., J.T. Ammons, S.Y. Lee, and D.A. Lietzke, 1998, *Deep weathering of calcareous sedimentary rock and the redistribution of iron and manganese in soil and saprolite*. Soil Science, **163**(1): p. 71-81.
- Raridon, R.J., D.E. Fields, and G.S. Henderson, 1976, Hydrologic and chemical budgets on Walker Branch Watershed: observations and modeling applications, ORNL/NSF/EATC-24, Oak Ridge National Laboratory, Oak Ridge, TN
- Raupach, M.R., D.D. Baldocchi, H. Bolle, L. Dumenil, W. Eugster, F. Meixner, J. Olejnik, R. Pielke, J. Tenhunen, and R. Valentini, 1998, *How is the atmospheric coupling of land surfaces affected by topography, complexity in landscape patterning and the vegetation mosaic?*, In: *Integrating Hydrology, Ecosystem Dynamics and Biogeochemistry in Complex Landscapes*. Dahlem Konferenzen.
- Reedy, O.C., P.M. Jardine, G.V. Wilson, and H.M. Selim, 1996, *Quantifying the diffusive mass transfer of nonreactive solutes in columns of fractured saprolite using flow interruption*. Soil Science Society of America Journal, **60**(5): p. 1376-1384.
- Reichle, D.E. and N.T. Edwards, 1973, *IBP-Eastern Deciduous Forest Biome - Oak Ridge Site*, In: *Modeling Forest Ecosystems. EDFB/IBP-73-7*, J.S. Olson, L.H. Kern, R.V. O'Neill, and D.E. Reichle, Editors, Oak Ridge National Laboratory: Oak Ridge, TN. p. 151-201.
- Richter, D.D., D.W. Johnson, and D.E. Todd, 1988, *Atmospheric sulfur deposition, neutralization, and ion leaching in two deciduous forest ecosystems*. Journal of Environmental Quality, **17**: 263-270.
- Richter, D.D. and S.E. Lindberg, 1988, *Wet deposition estimates from long-term bulk and event wet-only samples of incident precipitation and throughfall*. Journal of Environmental Quality, **17**: 619-622.

- Roberts, B.J., Mulholland, P.J. and Hill, W.R., 2007. *Multiple Scales of Temporal Variability in Ecosystem Metabolism Rates: Results from 2 Years of Continuous Monitoring in a Forested Headwater Stream*. *Ecosystems*, **10(4)**: 588-606.
- Roberts, B.J. and Mulholland, P.J., 2007. *In-stream biotic control on nutrient biogeochemistry in a forested stream, West Fork of Walker Branch*. *Journal of Geophysical Research*, **112**: G04002 , doi: 10.1029/2007JG000422.
- Roh, Y., N.T. Edwards, S.Y. Lee, C.A. Stiles, S. Armes, and J.E. Foss, 2000, *Thermal-treated soil for mercury removal: Soil and phytotoxicity tests*. *Journal of Environmental Quality*, **29(2)**: p. 415-424.
- Rosemond, A.D., 1993, *Interactions among irradiance, nutrients, and herbivores constrain a stream algal community*. *Oecologia*, **94**: 585-594.
- Rosemond, A.D., P.J. Mulholland, and J.W. Elwood, 1993, *Top-Down and Bottom-up Control of Stream Periphyton - Effects of Nutrients and Herbivores*. *Ecology*, **74(4)**: p. 1264-1280.
- Rosemond, A.D., 1994, *Multiple Factors Limit Seasonal-Variation in Periphyton in a Forest Stream*. *Journal of the North American Benthological Society*, **13(3)**: p. 333-344.
- Rosemond, A.D. and S.H. Brawley, 1996, *Species-specific characteristics explain the persistence of Stigeoclonium tenue (Chlorophyta) in a woodland stream*. *Journal of Phycology*, **32(1)**: p. 54-63.
- Rosemond, A.D., P.J. Mulholland, and S.H. Brawley, 2000, *Seasonally shifting limitation of stream periphyton: response of algal populations and assemblage biomass and productivity to variation in light, nutrients, and herbivores*. *Canadian Journal of Fisheries and Aquatic Sciences*, **57(1)**: p. 66-75.
- Ross, H. and S.E. Lindberg, 1994, *Atmospheric chemical input to small catchments*, In: *Biogeochemistry of Small Catchments: A Tool for Environmental Research*, B. Moldan and J. Cerny, Editors, John Wiley and Sons. p. 55-84.
- Sanzone, D.M., J.L. Tank, J.L. Meyer, P.J. Mulholland, and S.E.G. Findlay, 2001, *Microbial incorporation of nitrogen in stream detritus*. *Hydrobiologia*, **464(1-3)**: p. 27-35.
- Schaefer, D.A., S.E. Lindberg, and H. W.A., 1989, *Fluxes of undissociated acids to terrestrial ecosystems by atmospheric deposition*. *Tellus*, **41B**: 207-218.
- Schreiber, M.E., G.R. Moline, and J.M. Bahr, 1999, *Using hydrochemical facies to delineate ground water flowpaths in fractured shale*. *Ground Water Monitoring and Remediation*, **19(1)**: p. 95-109.
- Seagers, J.E., R.A. Minear, J. Elwood, and P.J. Mulholland, 1986, *Chemical characterization of soluble phosphorus forms along a hydrologic flowpath of a forested stream ecosystem*, ORNL/TM-9737, Oak Ridge National Laboratory, Oak Ridge, TN

- Sharma, M.L., R.J. Luxmoore, R. DeAngelis, R.C. Ward, and G.T. Yeh, 1987, *Subsurface waterflow simulated for hillslopes with spatially dependent soil hydraulic characteristics*. Water Resources Research, **23**: 1523-1530.
- Sheppard, J.D., G.S. Henderson, T. Grizzard, and M.T. Heath, 1973, Hydrology of a forested catchment: 1. Water balance from 1969 to 1972 on Walker Branch Watershed, EDFB Memo Report 73-55, Oak Ridge National Laboratory, Oak Ridge, TN
- Shriner, D.S., C.R. Richmond, and S.E. Lindberg, eds. 1980, *Atmospheric Sulfur Deposition*. Ann Arbor Science Publishers: Ann Arbor. 568.
- Shugart, H.H., D.E. Reichle, N.T. Edwards, and J.R. Kercher, 1976, *A model of calcium cycling in an east Tennessee Liriodendron forest: Model structure, parameters and frequency response analysis*. Ecology, **57**: 99-109.
- Shugart, H.H., W.F. Harris, N.T. Edwards, and B.S. Ausmus, 1977, *Modeling of belowground processes associated with roots in deciduous forest ecosystems*. Pedobiologia, **17**: 382-388.
- Shugart, H.H., D.E. Reichle, N.T. Edwards, and J.R. Kercher, 1979, *A model of calcium-cycling in an east Tennessee Liriodendron forest: Model structure, parameters and frequency response analysis*, In: *Systems Ecology*, H.H. Shugart and R.V. O'Neill, Editors, Dowden, Hutchinson and Ross, Inc.: Strömberg, PA. p. 125-135.
- Shure, D.J., P.D. Mooreside, and S.M. Ogle, 1998, *Rainfall effects on plant-herbivore processes in an upland oak forest*. Ecology, **79**(2): p. 604-617.
- Skov, H., S. B. Brooks, M. E. Goodsite, S. E. Lindberg, T. P. Meyers, M. S. Landis, M. R. B. Larsen, B. Jensen, G. McConville, and J. Christensen, 2006, *Fluxes of reactive gaseous mercury measured with a newly developed method using relaxed eddy accumulation*. Atmospheric Environment, **40**(28): 5452-5463.
- Smith, T.M. 1984, *Habitat-simulation models: Integrating habitat-classification and forest-simulation models*. In: *Wildlife 2000: Modeling Habitat Relationships of Terrestrial Vertebrates*. Stanford Sierra Camp, Fallen Leaf Lake, CA.
- Snyder, W.M. and J.W. Curlin, 1969, Walker Branch Watershed project: Hydrologic analysis and data processing, ORNL-4392, Oak Ridge National Laboratory, Oak Ridge, TN
- Sollins, P., W.F. Harris, and N.T. Edwards, 1976, *Simulating the physiology of a temperate deciduous forest*, In: *Systems Analysis and Simulation in Ecology*, B.C. Patten, Editor, Academic Press: New York. p. 173-218.
- Southworth, G.R., K.W. Watson, and J.L. Keller, 1987, *Comparison of models for describing the transport of organic compounds in macroporous soil*. Environmental Toxicology and Chemistry, **6**: 251-257.
- Southworth, G.R., 1987, *Movement of radiotracer metal cations through a forest soil column*. Environment International, **13**: 197-201.

- Stafford, P., L. Toran, and L. McKay, 1998, *Influence of fracture truncation on dispersion: A dual permeability model*. Journal of Contaminant Hydrology, **30**(1-2): p. 79-100.
- Steinman, A.D., 1992, *Does an increase in irradiance influence periphyton in a heavily-grazed woodland stream?* Oecologia, **91**: 163-170.
- Steinman, A.D., P.J. Mulholland, and W.R. Hill, 1992, *Functional responses associated with growth form in stream algae*. Journal of the North American Benthological Society, **11**: 229-243.
- Steinman, A.D. and H.L. Boston, 1993, *The Ecological Role of Aquatic Bryophytes in a Woodland Stream*. Journal of the North American Benthological Society, **12**(1): p. 17-26.
- Steinman, A.D., 1994, *The influence of phosphorus enrichment on lotic bryophytes*. Freshwater Biology, **31**: 53-63.
- Stevens, R.T., T.L. Ashwood, and J.M. Sleeman, 1997, *Mercury in hair of muskrats (Ondatra zibethicus) and mink (Mustela vison) from the US Department of Energy Oak Ridge Reservation*. Bulletin of Environmental Contamination and Toxicology, **58**(5): p. 720-725.
- Stewart, A.J., 2001, *A simple stream monitoring technique based on measurements of semiconservative properties of water*. Environmental Management, **27**(1): p. 37-46.
- Stratton, W.J. and S.E. Lindberg, 1995, *Use of a refluxing mist chamber for measurement of gas-phase water-soluble mercury (II) species in the atmosphere*. Water, Air, and Soil Pollution, **80**: 1269-1278.
- Suberkropp, K., 1997, *Annual production of leaf decaying fungi in a woodland stream*. Freshwater Biology, **38**(1): p. 169-178.
- Swank, W.T. and G.S. Henderson, 1976, *Atmospheric input of cations and anions to forest ecosystems in North Carolina and Tennessee*. Water Resources Research, **12**: 541-546.
- Swanston C.W., M. S. Torn, P. J. Hanson, J. R. Southon, C. T. Garten, E. M. Hanlon, and L. Ganio. 2005. *Initial characterization of processes of soil carbon stabilization using forest stand-level radiocarbon enrichment*. Geoderma **128**: 52-62.
- Tamura, T., W.P. Bonner, and C.W. Francis, 1970, *Fate of trace elements and radionuclides in terrestrial environment*, ORNL--4584, Oak Ridge National Laboratory, Oak Ridge, TN
- Timmins, S.P. and J. Chason, 1991, 1989 Walker Branch Watershed surveying and mapping including a guide to coordinate transformation procedures, ORNL/TM-11779, Oak Ridge National Laboratory, Oak Ridge, TN
- Todd, D.E., M. Huston, and B. Pedersen, 1995, *The 28-year record of ecosystem dynamics on Walker Branch Watershed*. Bulletin of the Ecological Society of America, **76**(2): p.
- Todd, D.E. and P.J. Hanson, 2003, *Rates of coarse-wood decomposition*, In: *North American Temperate Deciduous Forest Responses to Changing Precipitation Regimes*, P.J. Hanson and S.D. Wullschlegel, Editors, Springer-Verlag: New York. p. 210-214.

- Toran, L.E. and J.A. Saunders, 1999, *Modeling alternative paths of chemical evolution of Na-HCO<sub>3</sub>-type groundwater near Oak Ridge, Tennessee, USA*. Hydrogeology Journal, **7**(4): p. 355-364.
- Trettin, C.C., D.W. Johnson, and D.E. Todd, 1999, *Forest Nutrient and Carbon Pools at Walker Branch Watershed: Changes during a 21-Year Period*. Soil Science Society of America Journal, **63**(5): p. 1436-1448.
- Tsay, T.K., G.T. Yeh, G.V. Wilson, and L.E. Toran, 1990, Gridmaker: A Grid Generator for Two- and Three-Dimensional Finite Element Subsurface Flow Models, ORNL TM-6613, Oak Ridge National Laboratory, Oak Ridge, TN
- Tschaplinski, T.J. and P.J. Hanson, 2003, *Dormant-season nonstructural carbohydrate storage*, In: *North American Temperate Deciduous Forest Responses to Changing Precipitation Regimes*, P.J. Hanson and S.D. Wullschlegel, Editors. Springer-Verlag: New York. p. 67-84.
- Turner, R.R., S.E. Lindberg, and K. Talbot, 1977, *Dynamics of trace element export from a deciduous watershed, Walker Branch, Tennessee*, In: *Watershed Research in Eastern North America*, D.L. Correll, Editor, Smithsonian Institution Press: Washington, D. C. p. 661-681.
- Turner, R.R., S.E. Lindberg, and J.M. Coe. 1985, *Comparative analysis of trace metal accumulation in forest ecosystems*. In: *Fifth International Conference on Heavy Metals in the Environment*. CEP Consultants Ltd. Publishers.
- Turner, R.R. and K.F. Steele, 1988, *Cadmium and manganese sorption by soil macropore linings and fillings*. Soil Science, **145**: 79-86.
- Turner, R.S., P.J. Hanson, M.A. Huston, C.T. Garten, and P.J. Mulholland. 1993, *A Large-Scale Throughfall Manipulation Experiment on Walker Branch Watershed*. In: *International Symposium on Experimental Manipulations of Biota and Biogeochemical Cycling in Ecosystems*. May 18-20, 1992. Copenhagen: Commission of the European Communities.
- Valente, R.J., 2007. *Atmospheric mercury in the Great Smoky Mountains compared to regional and global levels*. Atmospheric environment, **41**(9): 1861-1873.
- Valentini, R., D. Baldocchi, and J. Tenhunen, 1998, *Ecological Controls on Land Surface Atmospheric Interactions*, In: *Integrating Hydrology, Ecosystem Dynamics and Biogeochemistry in Complex Landscapes*. Dahlem Konferenzen.
- Valett, H. M, S. A. Thomas, P. J. Mulholland, J. R. Webster, C. N. Dahm, C. S. Fellows, C. L. Crenshaw, and C. G. Peterson. 2008. *Endogenous and exogenous control of ecosystem function: N cycling in headwater streams*. Ecology **89**(12):3515-3527.
- Van Hook, R.I. and W.D. Shults, 1976, Ecology and analysis of trace contaminants. Progress report, October 1974--December 1975, ORNL-NSF-EATC-22, Oak Ridge National Laboratory, Oak Ridge, TN
- Van Hook, R.I., W.F. Harris, and G.S. Henderson, 1977, *Cd, Pb, and Zn distributions and cycling in a forested watershed*. Ambio, **6**: 281-286.

- Van Miegroet, H., D.W. Johnson, and D.W. Cole, 1990, *Soil nitrification as affected by N fertility and changes in forest floor C/N ratio in four forest soils*. Canadian Journal of Forest Research, **20**: 1012-1019.
- Verma, S.B., D.D. Baldocchi, D.E. Anderson, D.R. Matt, and R.J. Clement, 1986, *Eddy fluxes of CO<sub>2</sub>, water vapor and sensible heat over a deciduous forest*. Boundary-Layer Meteorology, **36**: 71-91.
- Vermette, S.J., M.E. Peden, T.C. Willoughby, S.E. Lindberg, and A.D. Weiss, 1995, *Methodology for the sampling of metals in precipitation: Results of the National Atmospheric Deposition Program (NADP) pilot network*. Atmospheric Environment, **29**: 1221-1230.
- Wang, H. and D.D. Baldocchi, 1989, *A numerical model for canopy radiation within a deciduous forest*. Agricultural and Forest Meteorology, **46**: 313-337.
- Wanninkhof, R., P.J. Mulholland, and J.W. Elwood, 1990, *Gas exchange rates for a first order stream determined with deliberate and natural tracers*. Water Resources Research, **26**: 1621-1630.
- Ward, R.C., R.J. Luxmoore, and G.T. Yeh, 1987, HYSPEC - Simulating hydraulic flow in spatially correlated soils, ORNL-5849, Oak Ridge National Laboratory, Oak Ridge, TN
- Watson, K.W. and R.J. Luxmoore, 1986, *Estimating macroporosity in a forest watershed by use of a tension infiltrometer*. Soil Science Society of America Journal, **50**: 578-582.
- Webster, J.R., P.J. Mulholland, J.L. Tank, H.M. Valett, W.K. Dodds, B.J. Peterson, W.D. Bowden, C.N. Dahm, S. Findlay, S.V. Gregory, N.B. Grimm, S.K. Hamilton, S.L. Johnson, E. Marti, W.H. McDowell, J.L. Meyer, D.D. Morrall, S.A. Thomas, and W.M. Wollheim, 2003, *Factors affecting ammonium uptake in streams -- an inter-biome perspective*. Freshwater Biology, **48**: p. 1329-1352.
- Widner, T.E., S.R. Ripple, and J.E. Buddenbaum, 1996, *Identification and screening evaluation of key historical materials and emission sources at the Oak Ridge Reservation*. Health Physics, **71**(4): p. 457-469.
- Wilson, G.V. and R.J. Luxmoore, 1988, *Infiltration, macroporosity, and mesoporosity distributions on two forested watersheds*. Soil Science Society of America Journal, **52**: 329-335.
- Wilson, G.V., J.M. Alfonsi, and P.M. Jardine, 1989, *Spatial variability of saturated hydraulic conductivity of the subsoil of two contrasting watersheds*. Soil Science Society of America Journal, **53**: 679-685.
- Wilson, G.V., P.M. Jardine, R.J. Luxmoore, and J.R. Jones, 1990, *Hydrology of a forested watershed during storm events*. Geoderma, **26**: 119-138.
- Wilson, G.V., P.M. Jardine, R.J. Luxmoore, L.W. Zelazny, D.E. Todd, and D.A. Lietzke, 1991, *Hydrogeochemical Processes Controlling Subsurface Transport from an Upper Subcatchment of Walker Branch Watershed During Storm Events .2. Solute Transport Processes*. Journal of Hydrology, **123**(3-4): p. 317-336.

- Wilson, G.V., P.M. Jardine, R.J. Luxmoore, L.W. Zelazny, D.A. Lietzke, and D. Todd, 1991, *Hydrogeochemical processes controlling subsurface transport from an upper subcatchment of Walker Branch Watershed during storm events. 1. Hydrologic transport processes*. Journal of Hydrology, **123**(3-4): p. 297-316.
- Wilson, G.V., P.M. Jardine, and J.P. Gwo, 1992, *Modeling the hydraulic properties of a multi-region soil*. Soil Science Society of America Journal, **56**: 1731-1737.
- Wilson, G.V., P.M. Jardine, J.D. O'Dell, and M. Collineau, 1993, *Field-scale transport from a buried line source in unsaturated soil*. Journal of Hydrology, **145**: 83-109.
- Wilson, G.V., P.M. Jardine, R.J. Luxmoore, and J.P. Gwo, 1995, *Multi-region flow and transport in unsaturated soil*, In: *Trends in Hydrology*, S.G. Pandalai, Editor, Council of Scientific Research Integration: Trivandrum, India.
- Wilson, G.V., J.P. Gwo, P.M. Jardine, and R.J. Luxmoore, 1998, *Hydraulic and physical nonequilibrium effects on multi-region flow and transport*, In: *Physical Nonequilibrium in Soils: Modeling and Application*, H.M. Selim and L. Ma, Editors, Ann Arbor Press, Inc.: Chelsea, Michigan. p. 37-61.
- Wilson, K.B., P.J. Hanson, and D.D. Baldocchi, 2000, *Factors controlling evaporation and energy partitioning beneath a deciduous forest over an annual cycle*. Agricultural and Forest Meteorology, **102**(2-3): p. 83-103.
- Wilson, K.B. and D.D. Baldocchi, 2000, *Seasonal and interannual variability of energy fluxes over a broadleaved temperate deciduous forest in North America*. Agricultural and Forest Meteorology, **100**: 1-18.
- Wilson, K.B., D.D. Baldocchi, and P.J. Hanson, 2000, *Spatial and seasonal variability of photosynthetic parameters and their relationship to leaf nitrogen in a deciduous forest*. Tree Physiology, **20**(9): p. 565-578.
- Wilson, K.B. and D.D. Baldocchi, 2001, *Comparing independent estimates of carbon dioxide exchange over 5 years at a deciduous forest in the southeastern United States*. Journal of Geophysical Research-Atmospheres, **106**(D24): p. 34167-34178.
- Wilson, K.B., D.D. Baldocchi, and P.J. Hanson, 2001, *Leaf age affects the seasonal pattern of photosynthetic capacity and net ecosystem exchange of carbon in a deciduous forest*. Plant Cell and Environment, **24**(6): p. 571-583.
- Wilson, K.B. and T.P. Meyers, 2001, *The spatial variability of energy and carbon dioxide fluxes at the floor of a deciduous forest*. Boundary-Layer Meteorology, **98**(3): p. 443-473.
- Wilson, K. B., P. J. Hanson, P. J. Mulholland, D. D. Baldocchi, and S. D. Wullschleger. 2001. *A comparison of methods for determining forest evapotranspiration and its components across scales: sap-flow, soil water budget, eddy covariance and catchment water balance*. Agricultural and Forest Meteorology 106:153-168.

- Wilson, K.B. and P.J. Hanson, 2003, *Deciduous hardwood photosynthesis: Species, differences, temporal patterns, and responses to soil-water deficits*, In: *North American Temperate Deciduous Forest Responses to Changing Precipitation Regimes*, P.J. Hanson and S.D. Wullschleger, Editors, Springer-Verlag: New York. p. 35-47.
- Wiman, B., M. Unsworth, S.E. Lindberg, B. Bergqvist, R. Jaenicke, and H.-C. Hansson, 1990, *Perspectives on aerosol deposition to natural surfaces: Interactions between aerosol residence times, removal processes, the biosphere, and global environmental change*. *Journal of Aerosol Science*, **21**: 313-338.
- Wu, Y.-L., C.I. Davidson, S.E. Lindberg, and A. Russell, 1992, *Resuspension of particulate chemical species at forested sites*. *Environmental Science and Technology*, **26**: 2428-2435.
- Wullschleger, S.D., C.A. Gunderson, M.L. Tharp, D.C. West, and W.M. Post, 2003, *Simulated patterns of forest succession and productivity as a consequence of altered precipitation*, In: *North American Temperate Deciduous Forest Responses to Changing Precipitation Regimes*, P.J. Hanson and S.D. Wullschleger, Editors, Springer-Verlag: New York. p. 433-446.
- Wullschleger, S.D., S.B. McLaughlin, and M.P. Ayers. 2004. *High-resolution analysis of stem increment and sap flow for loblolly pine trees attacked by southern pine beetle*. *Canadian Journal of Forest Research* **34**: 2387-2393.
- Wullschleger, S.D. and P.J. Hanson. 2005. *Sensitivity of canopy transpiration to altered precipitation in an upland oak forest: evidence from a long-term manipulative field study*. *Global Change Biology* **12**: 97-109.
- Yang, F., K. Ichii, M. A. White, H. Hashimoto, A. R. Michaelis, and P. Votava, 2007, *Developing a continental-scale measure of gross primary production by combining MODIS and AmeriFlux data through support vector machine approach*. *Remote Sensing of Environment*, **110(1)**: 109-122.
- Second annual Walker Branch Watershed research symposium, 21-23 March 1991, 1991, ORNL/M-1394, Oak Ridge National Laboratory, Oak Ridge, TN
- Third annual Walker Branch Watershed research symposium, 26-27 Mar 1992, 1992, CONF-920389-Abst., Oak Ridge National Laboratory, Oak Ridge, TN
- Fourth annual Walker Branch Watershed research symposium: Program and abstracts, 1993, CONF-930371-Absts., Oak Ridge National Laboratory, Oak Ridge, TN