

Curriculum Vitae Nancy Beth Grimm

School of Life Sciences	(480) 965-4735 (Office)
Faculty of Ecology, Evolution & Environmental Science	(480) 965-1517 (Lab) (480) 557-6611 (Home)
Arizona State University Tempe, AZ 85287-4501	(480) 965-6899 (FAX) <i>email: nbgrimm@asu.edu</i>

EDUCATION

1978 B.A., Natural Science, Hampshire College
1980 M.S., Zoology, Arizona State University
1985 Ph.D., Zoology, Arizona State University

PRINCIPAL PROFESSIONAL EMPLOYMENT

2007–2009 Faculty Leader, Faculty of Ecology, Evolution, and Environmental Science, School of Life Sciences, Arizona State University
2003– Professor, School of Life Sciences, Arizona State University
1999–2003 Professor, Department of Biology, Arizona State University
1997–1999 Associate Professor, Department of Biology, Arizona State University
1994–1997 Associate Research Scientist, Department of Zoology, Arizona State University
1990–1994 Assistant Research Scientist, Department of Zoology, Arizona State University
1987–1989 National Science Foundation Postdoctoral Fellow, Arizona State University
1985–1990 Faculty Research Associate, Department of Zoology, Arizona State University

OTHER APPOINTMENTS

Affiliated Professor, School of Sustainability, Arizona State University, 2007–
First Minshall Lecturer, Idaho State University, October 2007
Visiting Professor, Centre d'Estudis Avançats de Blanes, January–June, 2007
Adjunct Professor of Biology, University of New Mexico, 2005–
Distinguished Ecologist, Colorado State University Graduate Program in Ecology, March 2004
Distinguished Ecologist, Utah State University Ecology Program, January 2003
Kaesler Visiting Scholar, Center for Limnology, University of Wisconsin-Madison, April 1998
Visiting Researcher, National Center for Ecological Analysis and Synthesis, 1998–1999
Consultant, Western Water Policy Advisory Commission – Chair of working group on sustainability of western watersheds, 1996–1997

RESEARCH INTERESTS

Biogeochemistry; stream ecosystem structure and function; urban ecosystem structure and function; nitrogen cycling in streams and cities; interactions between surface and groundwaters; terrestrial-aquatic linkages; disturbance and succession; effects of global climate change and human activities on stream ecosystems; urbanization and global environmental change

PROFESSIONAL MEMBERSHIPS

American Association for the Advancement of Science; American Geophysical Union; American Institute of Biological Sciences; American Society of Limnology and Oceanography; Arizona Riparian Council; Council of Scientific Society Presidents; Desert Fishes Council; Ecological Society of America; The Nature Conservancy; North American Benthological Society; Societas Internationalis Limnologiae

PUBLICATIONS—REFEREED JOURNAL ARTICLES

- Hall, R.O., Jr., J.L. Tank, D.J. Sobota, P.J. Mulholland, J.M. O'Brien, W.K. Dodds, J.R. Webster, H.M. Valett, G.C. Poole, B.J. Peterson, J.L. Meyer, W.H. McDowell, S.L. Johnson, S.K. Hamilton, N.B. Grimm, V. Gregory, C.N. Dahm, L.W. Cooper, L. R. Ashkenas, S.M. Thomas, R.W. Sheibley, J.D. Potter, B.R. Niederlehner, L. Johnson, A.M. Helton, C. Crenshaw, A.J. Burgin, M.J. Bernot, J.J. Beaulieu, and C. Arango. 2009. Nitrate removal in stream ecosystems measured by 15N addition experiments: total uptake. *Limnology and Oceanography: in press*.
- Mulholland, P.J., R.O. Hall, Jr., D.J. Sobota, W.K. Dodds, S.E.G. Findlay, N.B. Grimm, S.K. Hamilton, W.H. McDowell, J.M. O'Brien, J.L. Tank, L. R. Ashkenas, L.W. Cooper, C.N. Dahm, S.V. Gregory, S.L. Johnson, J.L. Meyer, B.J. Peterson, G.C. Poole, H.M. Valett, J.R. Webster, C. Arango, J.J. Beaulieu, M.J. Bernot, A.J. Burgin, C. Crenshaw, A.M. Helton, L. Johnson, B.R. Niederlehner, J.D. Potter, R.W. Sheibley, and S.M. Thomas. 2009. Nitrate removal in stream ecosystems measured by 15N addition experiments: denitrification. *Limnology and Oceanography: in press*.
- Roach, W.J., and N.B. Grimm. 2009. Nutrient variation in an urban lake chain and its consequences for phytoplankton production. *Journal of Environmental Quality: in press*.
- Walker, J. S., N. B. Grimm, J. M. Briggs, C. Gries, and L. Dugan. 2009. Effects of urbanization on plant species diversity in central Arizona. *Frontiers in Ecology and the Environment: in press*.
- Grimm, N.B., S. H. Faeth, N. E. Golubiewski, C. R. Redman, J. Wu, X. Bai, and J. M. Briggs. 2008. Global change and the ecology of cities. *Science* 319:756-760.
- Grimm, N.B., D. Foster, P. Groffman, J.M. Grove, C. S. Hopkinson, K. Nadelhoffer, D. Peters, and D.E. Pataki. 2008. The changing landscape: ecosystem responses to urbanization and pollution across climatic and societal gradients. *Frontiers in Ecology and the Environment* 6:264-272.
- Harms, T. K., E. E. Wentz, and N. B. Grimm. 2008. Spatial heterogeneity of denitrification in semi-arid floodplains. *Ecosystems* 10.1007/s10021-008-9212-6.
- Harms, T. K., and N. B. Grimm. 2008. Hot spots and hot moments of carbon and nitrogen dynamics in a semi-arid riparian zone. *Journal of Geophysical Research—Biogeosciences* 113: G01020, doi:10.1029/2007JG000588.
- Hall, S.J., D. Huber, and N.B. Grimm. 2008. Soil N₂O and NO emissions from an arid, urban ecosystem. *Journal of Geophysical Research—Biogeosciences* 113: doi:10.1029/2007JG000523.
- Kaye, J.P., A. Majumdar, C. Gries, A. Buyantuyev, N.B. Grimm, D. Hope, G.D. Jenerette, W. Zhu, and L. Baker. 2008. Hierarchical Bayesian scaling of soil properties across urban, agricultural, and desert ecosystems. *Ecological Applications* 18:132-145.
- Lohse, K.A., D. Hope, R.A. Sponseller, J.O. Allen, and N.B. Grimm. 2008. Atmospheric deposition of carbon and nutrients across an arid metropolitan area. *Science of the Total Environment* 402:95-105.
- Majumdar, A., J. P. Kaye, C. Gries, D. Hope, and N. B. Grimm. 2008. Hierarchical spatial modeling and prediction of multiple soil nutrients and carbon concentrations. *Communications in Statistics – Simulation and Computation* 37: 434–453. doi: 10.1080/03610910701792588.
- McCrackin, M.L., T.K. Harms, N.B. Grimm, S. J. Hall, and J. P. Kaye. 2008. Responses of microbes to resource availability in urban, desert soils. *Biogeochemistry* 87:143-155.
- Mulholland, P.J., A.M. Helton, G.C. Poole, R.O. Hall, Jr., S.K. Hamilton, B.J. Peterson, J.L. Tank, L. R.

- Ashkenas, L.W. Cooper, C.N. Dahm, W.K. Dodds, S. Findlay, S.V. Gregory, N.B. Grimm, S.L. Johnson, W.H. McDowell, J.L. Meyer, H.M. Valett, J.R. Webster, C. Arango, J.J. Beaulieu, M.J. Bernot, A.J. Burgin, C. Crenshaw, L. Johnson, B.R. Niederlehner, J.M. O'Brien, J.D. Potter, R.W. Sheibley, D.J. Sobota, and S.M. Thomas. 2008. Stream denitrification across biomes and its response to anthropogenic nitrate loading. *Nature* 452:202-205.
- Peters, D.P.C., P.M. Groffman, K.J. Nadelhoffer, N.B. Grimm, S.L. Collins, W.K. Michener, and M. A. Huston. 2008. Living in an increasingly connected world: a framework for continental-scale environmental science. *Frontiers in Ecology and the Environment* 6:229-237.
- Roach, W.J., J.B. Heffernan, N.B. Grimm, J.R. Arrowsmith, C. Eisinger and T. Rychener. 2008. Unintended consequences of urbanization for aquatic ecosystems: a case study from the Arizona desert. *BioScience* 58:715-727. doi:10.1641/B580808
- Shen, W., J. Wu, N.B. Grimm, J.F. Reynolds, and D. Hope. 2008. Effects of urbanization-induced environmental changes on desert ecosystem functioning. *Ecosystems* 11:138-155.
- Dent, C. L., N. B. Grimm, E. Martí, J. W. Edmonds, J. C. Henry, and J. R. Welter. 2007. Variability in surface-subsurface hydrologic interactions and implications for nutrient retention in an arid-land stream. *Journal of Geophysical Research* 112, G04004, doi:10.1029/2007JG000467.
- Jacobs, S.M., J.S. Bechtold, H.C. Biggs, N.B. Grimm, S. Lorentz, M.E. McClain, R.J. Naiman, S.S. Perakis, G. Pinay, M.C. Scholes. 2007. Nutrient vectors and riparian processing: a review with special reference to African semiarid savanna ecosystems. *Ecosystems* 10:1231-1249.
- Lewis, D.B., and N.B. Grimm. 2007. Hierarchical regulation of N export from urban catchments: interactions of storms and landscapes. *Ecological Applications* 17: 2347-2364.
- Lewis, D.B., N.B. Grimm, T.K. Harms, and J.D. Schade. 2007. Subsystems, flowpaths, and the spatial variability of nitrogen in a fluvial ecosystem. *Landscape Ecology* 22: 911-924.
- Li, K., P. Zhang, J. C. Crittenden, S. Guhathakurta, Y. Chen, H. Fernando, A. Sawhney, P. McCartney, N. Grimm, R. Kahhat, H. Joshi, G. Konjevod, Y. J. Choi, E. Fonseca, B. Allenby, D. Gerrity, and P. M. Torrens. 2007. Development of a framework for quantifying the environmental impacts of urban development and construction practices. *Environmental Science and Technology* 41:5130-5136.
- Meixner, T., A. K. Huth, P. D. Brooks, M. H. Conklin, N. B. Grimm, R. C. Bales, P. A. Haas, and J. R. Petti. 2007. Influence of shifting flow paths on nitrogen concentrations during monsoon floods, San Pedro River, Arizona. *Journal of Geophysical Research–Biogeosciences* 112, G03S03, doi:10.1029/2006JG000266.
- Hope, D., C. Gries, D. Casagrande, C.L. Redman, N.B. Grimm, and C. Martin. 2006. Drivers of spatial variation in plant diversity across the Central Arizona-Phoenix ecosystem. *Society and Natural Resources* 19(2):101-116.
- Jenerette, G.D., J. Wu, N.B. Grimm, and D. Hope. 2006. Points, patches and regions: Scaling soil biogeochemical patterns in an urbanized arid ecosystem. *Global Change Biology* 12:1532-1544.
- Kaye, J.P., P. M. Groffman, N.B. Grimm, L.A. Baker, and R. Pouyat. 2006. A distinct urban biogeochemistry? *Trends in Ecology and Evolution* 21:192-199.
- Lewis, D.B., J.D. Schade, A.K. Huth, and N.B. Grimm. 2006. The spatial structure of variability in a semi-arid, fluvial ecosystem. *Ecosystems* 9:386-397.
- Zhu, W., D. Hope, C. Gries, and N.B. Grimm. 2006. Soil characteristics and the accumulation of inorganic nitrogen in an arid urban ecosystem. *Ecosystems* 9:711-724.
- Belnap, J., J. Welter, N.B. Grimm, N. Barger, and J. Ludwig. 2005. Linkages between microbial and hydrologic processes in arid and semi-arid watersheds. *Ecology* 86:298-307.
- Grimm, N.B., R.W. Sheibley, C. Crenshaw, C.N. Dahm, W.J. Roach, and L. Zeglin. 2005. N retention and transformation in urban streams. *Journal of the North American Benthological Society* 24:626-642.
- Hope, D., Zhu, W., C. Gries, J. Oleson, J. Kaye, N.B. Grimm, L.A. Baker. 2005. Spatial variation in soil inorganic nitrogen across an urban ecosystem. *Urban Ecosystems* 8:251-273.

- Larson, E.K., N.B. Grimm, P. Gober, and C.L. Redman. 2005. The paradoxical ecology and management of water in the Phoenix, USA metropolitan area. *Journal of Ecohydrology and Hydrobiology* 5:287-296. (*appeared in 2006 with pub date of 2005*)
- Schade, J.D., J.R. Welter, E. Martí, and N.B. Grimm. 2005. Hydrological exchange and N retention in an arid-land riparian ecosystem. *Journal of the North American Benthological Society* 24:19-28.
- Shen, W., J. Wu, P.R. Kemp, J.F. Reynolds, and N.B. Grimm. 2005. Simulating the dynamics of productivity of a Sonoran ecosystem: model parameterization and validation. *Ecological Modeling* 189:1-24.
- Welter, J.W., S.G. Fisher, and N.B. Grimm. 2005. Nitrogen transport and retention in an arid land watershed: influence of storm characteristics on terrestrial-aquatic linkages. *Biogeochemistry* 76:421-440.
- Dodds, W.K., E. Martí, J.L. Tank, J. Pontius, S.K. Hamilton, N.B. Grimm, W.B. Bowden, W.H. McDowell, B.J. Peterson, H.M. Valett, J.R. Webster, and S. Gregory. 2004. Carbon and nitrogen stoichiometry and nitrogen cycling rates in streams. *Oecologia* 140:458-467.
- Grimm, N.B., and C.L. Redman. 2004. Approaches to the study of urban ecosystems: the case of central Arizona-Phoenix. *Urban Ecosystems* 7:199-213.
- Hope, D., M.W. Naegeli, A. Chan, and N.B. Grimm. 2004. Nutrients on asphalt parking surfaces in an arid urban environment. *Water, Air and Soil Pollution: Focus* 4:371-390.
- Zhu, W., N.D. Dillard, and N.B. Grimm. 2004. Urban nitrogen biogeochemistry: status and processes in green retention basins. *Biogeochemistry* 71:177-196.
- Grimm, N.B., S. E. Gergel, W.H. McDowell, E.W. Boyer, C.L. Dent, P.M. Groffman, S.C. Hart, J.W. Harvey, C.A. Johnston, E. Mayorga, M. McClain, and G. Pinay. 2003. Merging aquatic and terrestrial perspectives of nutrient biogeochemistry. *Oecologia* 442: 485–501.
- Hobbie J.E., S.R. Carpenter, N.B. Grimm, J.R. Gosz, and T.R. Seastedt. 2003. The US Long Term Ecological Research Program. *BioScience* 53:21-32.
- Hope, D., C. Gries, W. Zhu, W.F. Fagan, C.L. Redman, N.B. Grimm, A. Nelson, C. Martin, and A. Kinzig. 2003. Socio-economics drive urban plant diversity. *Proceedings of the National Academy of Science* 100:8788-8792.
- McClain, M. E., E. W. Boyer, C. L. Dent, S. E. Gergel, N. B. Grimm, P. M. Groffman, S. C. Hart, J. W. Harvey, C. A. Johnston, E. Mayorga, W. H. McDowell, and G. Pinay. 2003. Biogeochemical hot spots and hot moments at the interface of terrestrial and aquatic ecosystems. *Ecosystems* 6:301-312.
- Sanzone, D.M., J.L. Meyer, E. Marti, E.P. Gardiner, J.L. Tank, and N.B. Grimm. 2003. Carbon and nitrogen transfer from a desert stream to riparian predators. *Oecologia* 134:238-250.
- Webster, J.R., P.J. Mulholland, J.L. Tank, H.M. Valett, W.K. Dodds, B.J. Peterson, W.B. Bowden, C.N. Dahm, S. Findlay, S.V. Gregory, N.B. Grimm, S.K. Hamilton, S.L. Johnson, E. Martí, W.H. McDowell, J.L. Meyer, D.D. Morrall, S.A. Thomas, and W.M. Wollheim. 2003. Factors affecting nitrogen retention in streams – an inter-biome perspective. *Freshwater Biology* 48:1329-1352.
- Dodds, W.K., A.J. López, W.B. Bowden, S. Gregory, N.B. Grimm, S.K. Hamilton, A.E. Hershey, W.H. McDowell, J.L. Meyer, D. Morrall, P.J. Mulholland, B.J. Peterson, J.L. Tank, H.M. Valett, J.R. Webster, and W. Wollheim. 2002. Nitrogen uptake as a function of concentration in streams. *Journal of the North American Benthological Society* 21:206-220.
- 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. Martí, W. H. McDowell, J. Merriam, J. L. Meyer, B. J. Peterson, H. M. Valett, and W. M. Wollheim. 2002. Can Uptake Length in Streams be Determined by Nutrient Addition Experiments? Results from an inter-biome comparison study. *Journal of the North American Benthological Society* 21:544-560.
- Schade, J.D., E. Martí, J.R. Welter, S.G. Fisher, and N.B. Grimm. 2002. Sources of N to the riparian zone of a desert stream: implications for riparian vegetation and N retention. *Ecosystems* 5: 68-79.
- Vitousek, P.M., K. Cassman, C. Cleveland, T. Crews, C.B. Field, N.B. Grimm, R.W. Howarth, R. Marino,

- L. Martinelli, E.B. Rastetter, and J.I. Sprent. 2002. Towards an ecological understanding of biological nitrogen fixation. *Biogeochemistry* 57/58:1-45.
- Dent, C.L., N.B. Grimm, and S.G. Fisher. 2001. Multi-scale effects of surface-subsurface exchange on stream water nutrient concentrations. *Journal of the North American Benthological Society* 20:162-181.
- Luck, M.A., G.D. Jenerette, J. Wu, and N.B. Grimm. 2001. The urban funnel model and spatially heterogeneous ecological footprint. *Ecosystems* 4:782-796.
- Mulholland, P. J., C.S. Fellows, J.L. Tank, N. B. Grimm, J. R. Webster, S.K. Hamilton, E. Martí, L. Ashkenas, W. B. Bowden, W. K. Dodds, W. H. McDowell, J. L. Meyer, and B. J. Peterson. 2001. Inter-biome comparison of factors controlling stream metabolism. *Freshwater Biology* 46:1503-1517.
- Schade, J.D., S.G. Fisher, N.B. Grimm, and J.A. Seddon. 2001. The influence of a riparian shrub on nitrogen cycling in a Sonoran Desert stream. *Ecology* 82:3363-3376.
- Collins, J., A. Kinzig, N.B. Grimm, W. Fagan, J. Wu, and E. Borer. 2000. A new urban ecology. *American Scientist* 88:416-425.
- Grimm, N.B., J.M. Grove, C.L. Redman, and S.T.A. Pickett. 2000. Integrated approaches to long-term studies of urban ecological systems. *BioScience* 50:571-584
- Martí, E., S.G. Fisher, J.J. Schade, J.R. Welter, and N.B. Grimm. 2000. Hydrological and chemical linkages between streams and their riparian zones: an intermediate disturbance model. *Internationale Vereinigung für Theoretische und Angewandte Limnologie, Verhandlungen* 27:442-447.
- Dent, C.L., and N.B. Grimm. 1999. Spatial heterogeneity of stream water nutrient concentrations over successional time. *Ecology* 80:2283-2298.
- Forrester, G.L., T.L. Dudley, and N.B. Grimm. 1999. Trophic interactions in open systems: effects of predators and nutrients on stream food chains. *Limnology & Oceanography* 44:1187-1197.
- Dahm, C.N., N.B. Grimm, P. Marmonier, H.M. Valett, and P. Vervier. 1998. Nutrient dynamics at the interface between surface waters and ground waters. *Freshwater Biology* 40:427-451.
- Fisher, S.G., N.B. Grimm, E. Martí, R.M. Holmes, and J.B. Jones. 1998. Material spiraling in river corridors: a telescoping ecosystem model. *Ecosystems* 1:19-34.
- Fisher, S.G., N.B. Grimm, E. Martí, and R. Gómez. 1998. Hierarchy, spatial configuration, and nutrient cycling in a desert stream. *Australian Journal of Ecology* 23:41-52.
- Holmes, R.M., S.G. Fisher, N.B. Grimm, and B.J. Harper. 1998. The impact of flash floods on microbial distribution and biogeochemistry in the parafluvial zone of a desert stream. *Freshwater Biology* 40:641-654.
- Grimm, N.B., A. Chacón, C.N. Dahm, S.W. Hostetler, O.T. Lind, P.L. Starkweather, and W.W. Wurtsbaugh. 1997. Sensitivity of aquatic ecosystems to climatic and anthropogenic changes: the Basin and Range, American Southwest, and México. *Hydrological Processes* 11:1023-1041.
- Grimm, N.B., and K.C. Petrone. 1997. Nitrogen fixation in a desert stream ecosystem. *Biogeochemistry* 37:33-61.
- Jones, J.B., Jr., J.D. Schade, S.G. Fisher, and N.B. Grimm. 1997. Organic matter dynamics in Sycamore Creek, a desert stream in Arizona, USA. Pages 78-81 *in* J.R. Webster and J.L. Meyer, editors. Stream organic matter budgets. *Journal of the North American Benthological Society* 16:3-161.
- Martí, E., N.B. Grimm, and S.G. Fisher. 1997. Pre- and post-flood retention efficiency of nitrogen in a Sonoran Desert stream. *Journal of the North American Benthological Society* 16:805-819.
- Stanley, E.H., S.G. Fisher, and N.B. Grimm. 1997. Ecosystem expansion and contraction: a desert stream perspective. *BioScience* 47:427-435.
- Clinton, S.M., N.B. Grimm, and S.G. Fisher. 1996. Response of a desert stream hyporheic invertebrate community to drying disturbance. *Journal of the North American Benthological Society* 15:700-712.
- Jones, J.B., Jr., S.G. Fisher, and N.B. Grimm. 1996. A long-term perspective of dissolved organic carbon

- transport in Sycamore Creek, Arizona, USA. *Hydrobiologia* 317:183-188.
- Holmes, R.M., J.B. Jones, Jr., S.G. Fisher, and N.B. Grimm. 1996. Denitrification in a nitrogen-limited stream ecosystem. *Biogeochemistry* 33:125-146.
- Jones, J.B., Jr., S.G. Fisher, and N.B. Grimm. 1995. Vertical hydrologic exchange and ecosystem metabolism in a Sonoran Desert stream. *Ecology* 76:942-952.
- Jones, J.B., Jr., S.G. Fisher, and N.B. Grimm. 1995. Nitrification in the hyporheic zone of a desert stream ecosystem. *Journal of the North American Benthological Society* 14:249-258.
- Jones, J.B., Jr., R.M. Holmes, S.G. Fisher, N.B. Grimm, and D.M. Greene. 1995. Methanogenesis in Arizona, USA, dryland streams. *Biogeochemistry* 31:155-173.
- Dudley, T.L., and N.B. Grimm. 1994. Modification of macrophyte resistance to disturbance by an exotic grass, and implications for desert stream succession. *Internationale Vereinigung für Theoretische und Angewandte Limnologie, Verhandlungen* 25:1456-1460.
- Holmes, R.M., S.G. Fisher, and N.B. Grimm. 1994. Parafluvial nitrogen dynamics in a desert stream ecosystem. *Journal of the North American Benthological Society* 13: 468-478.
- Peterson, C.G., A.C. Weibel, N.B. Grimm, and S.G. Fisher. 1994. Mechanisms of benthic algal recovery following spates: comparison of simulated and natural events. *Oecologia* 98:280-290.
- Stanley, E.H., D.L. Buschman, A.J. Boulton, N.B. Grimm, and S.G. Fisher. 1994. Invertebrate resistance and resilience to intermittency in a desert stream. *American Midland Naturalist* 131:288-300.
- Valett, H.M., S.G. Fisher, N.B. Grimm, and P. Camill. 1994. Vertical hydrologic exchange and ecological stability of a desert stream ecosystem. *Ecology* 75:548-560.
- Boulton, A.J., C.G. Peterson, N.B. Grimm, and S.G. Fisher. 1992. Stability of an aquatic macroinvertebrate community in a multi-year hydrologic disturbance regime. *Ecology* 73:2192-2207.
- Carpenter, S.R., S.G. Fisher, N.B. Grimm, and J.R. Kitchell. 1992. Global climate change and freshwater ecosystems: lakes and streams. *Annual Review of Ecology and Systematics* 23:119-139.
- Grimm, N.B. 1992. Biogeochemistry of nitrogen in arid-land stream ecosystems. *Journal of the Arizona-Nevada Academy of Science* 26:130-146.
- Peterson, C.G., and N.B. Grimm. 1992. Temporal variation in enrichment effects during periphyton succession in a nitrogen-limited desert stream ecosystem. *Journal of the North American Benthological Society* 11:20-36.
- Wood, D.J., S.G. Fisher, and N.B. Grimm. 1992. Pools in desert streams: limnology and response to disturbance. *Journal of the Arizona-Nevada Academy of Science* 26:171-179.
- Grimm, N.B., H.M. Valett, E.H. Stanley, and S.G. Fisher. 1991. Contribution of the hyporheic zone to stability of an arid-land stream. *Internationale Vereinigung für Theoretische und Angewandte Limnologie, Verhandlungen* 24:1595-1599.
- Boulton, A.J., S.E. Stibbe, N.B. Grimm, and S.G. Fisher. 1991. Invertebrate recolonization of small patches of defaunated hyporheic sediments in a Sonoran Desert stream. *Freshwater Biology* 26:267-277.
- Stream Solute Workshop (N.G. Aumen and 18 others, including N.B. Grimm). 1990. Concepts and methodologies for studying solute dynamics in stream ecosystems. *Journal of the North American Benthological Society* 9:95-119.
- Grimm, N.B., and S.G. Fisher. 1989. Stability of periphyton and macroinvertebrates to disturbance by flash floods in a desert stream. *Journal of the North American Benthological Society* 8:293-307.
- Grimm, N.B. 1988. Feeding dynamics, nitrogen budgets, and ecosystem role of a desert stream omnivore, *Agosia chrysogaster* (Pisces: Cyprinidae). *Environmental Biology of Fishes* 21: 143-152.
- Grimm, N.B. 1988. Role of macroinvertebrates in nitrogen dynamics of a desert stream. *Ecology* 69: 1884-1893.
- Fisher, S.G., and N.B. Grimm. 1988. Disturbance as a determinant of structure in a Sonoran Desert stream ecosystem. *Internationale Vereinigung für Theoretische und Angewandte Limnologie, Verhandlungen* 23:1183-1189.

- Grimm, N.B. 1987. Nitrogen dynamics during succession in a desert stream. *Ecology* 68: 1157-1170.
- Grimm, N.B., and S.G. Fisher. 1986. Nitrogen limitation in a Sonoran Desert stream. *Journal of the North American Benthological Society* 5: 2-15.
- Grimm, N.B., and S.G. Fisher. 1986. Nitrogen limitation potential of Arizona streams and rivers. *Journal of the Arizona-Nevada Academy of Science* 21: 31-43.
- Fisher, S.G., and N.B. Grimm. 1985. Hydrologic and material budgets for a small Sonoran Desert watershed during three consecutive cloudburst floods. *Journal of Arid Environments* 9: 105-118.
- Grimm, N.B., and S.G. Fisher. 1984. Exchange between interstitial and surface water: implications for stream metabolism and nutrient cycling. *Hydrobiologia* 111: 219-228.
- Fisher, S.G., L.J. Gray, N.B. Grimm, and D.E. Busch. 1982. Temporal succession in a desert stream ecosystem following flash flooding. *Ecological Monographs* 52: 93-110.
- Fisher, S.G., D.E. Busch, and N.B. Grimm. 1981. Diel feeding chronologies in two Sonoran Desert stream fishes, *Agosia chrysoaster* (Cyprinidae) and *Pantosteus clarki* (Catostomidae). *Southwestern Naturalist* 26: 31-36.
- Grimm, N.B., S.G. Fisher, and W.L. Minckley. 1981. Nitrogen and phosphorus dynamics in hot desert streams of Southwestern U.S.A. *Hydrobiologia* 83: 303-312.

PUBLICATIONS—REFEREED BOOK CHAPTERS AND SYMPOSIA

- Breil, P., N.B. Grimm, and P. Vervier. 2007. Surface water-groundwater exchange processes and fluvial ecosystem function: an analysis of temporal and spatial scale dependency. *In* Hydroecology and ecohydrology: past, present and future. P.J. Wood, D.M. Hannah and J.P. Sadler, editors. John Wiley and Sons, Chichester, England.
- Lewis, D.B., T.K. Harms, J.D. Schade, and N.B. Grimm. 2007. Nutrient limitation, material budgets, and heterogeneity in biogeochemical processes of riparian zones. *In* J. Stromberg and B. Tellman, editors. Ecology of desert riparian ecosystems: the San Pedro River example. University of Arizona Press, Tucson. *In press*.
- Grimm, N.B., C.V. Baxter, and C.L. Crenshaw. 2006. Surface-subsurface interactions in streams. Pages 761-782 *in* F.R. Hauer and G.A. Lamberti, editors. *Methods in stream ecology*, 2nd edition. Academic Press, San Diego, California, USA.
- Grimm, N.B., R.J. Arrowsmith, C. Eisinger, J. Heffernan, D.B. Lewis, A. MacLeod, L. Prashad, W.J. Roach, T. Rychener, and R.W. Sheibley. 2004. Effects of urbanization on nutrient biogeochemistry of aridland streams. Pages 129-146 *in* R. DeFries, G. Asner, and R. Houghton (editors). *Ecosystem interactions with land use change*. Geophysical Monograph Series 153. American Geophysical Union, Washington, D.C.
- Fink, J., F. Steiner, N.B. Grimm, and C.L. Redman. 2003. Greater Phoenix 2100: Building a national urban environmental research agenda. Pages 413-426 *in* G. Heiken and R. Fakundiny, editors. *Earth science in the city: a reader*. American Geophysical Union, Washington, DC.
- Grimm, N.B., L.A. Baker, and D. Hope. 2002. An ecosystem approach to understanding cities: familiar foundations and uncharted frontiers. Pages 95-114 *in* A.R. Berkowitz, C.H. Nilon, and K.S. Hollweg, editors. *Understanding urban ecosystems: a new frontier for science and education*. Springer-Verlag, New York, New York.
- Dent, C.L., J. J. Schade, N.B. Grimm, and S.G. Fisher. 2000. Subsurface influences on surface biology. Pages 381-402 *in* J.B. Jones, Jr., and P.J. Mulholland, editors. *Streams and ground waters*. Academic Press, San Diego, USA.
- Martí, E., S.G. Fisher, J.J. Schade, and N.B. Grimm. 2000. Flood frequency, arid land streams, and their riparian zones. Pages 111-136 *in* J.B. Jones, Jr., and P.J. Mulholland, editors. *Streams and ground waters*. Academic Press, San Diego, USA.
- Grimm, N.B., A. Chacón, C.N. Dahm, S.W. Hostetler, O.T. Lind, P.L. Starkweather, and W.W. Wurtsbaugh. 1997. Sensitivity of aquatic ecosystems to climatic and anthropogenic changes: the

- Basin and Range, American Southwest, and México. Pages 205-224 in C.E. Cushing, editor. Freshwater ecosystems and climate change in North America. Advances in Hydrological Processes. John Wiley & Sons, New York.
- Fisher, S.G., and N.B. Grimm. 1996. Ecological effects of global climate change on freshwater ecosystems with emphasis on streams and rivers. Pages 30.1-30.31 in Mays, L.W., editor. Handbook of water resources. McGraw-Hill.
- Grimm, N.B. 1996. Surface-subsurface interactions in streams. Pages 625-646 in F.R. Hauer and G.A. Lamberti, editors. Methods in stream ecology. Academic Press, San Diego, California, USA.
- Grimm, N.B. 1994. Disturbance, succession, and ecosystem processes in streams: a case study from the desert. Pages 93-112 in P.S. Giller, A.G. Hildrew, and D.G. Raffaelli, editors. *Aquatic ecology: scale, pattern and process*. Joint Symposium of the British Ecological Society and the American Society of Limnology and Oceanography. Blackwell Scientific Publications, Oxford, England.
- Grimm, N.B. 1994. Why link species and ecosystems? A perspective from ecosystem ecology. Pages 5-15 + lit. cited in Jones, C.G. and Lawton, J.H., editors. *Linking species and ecosystems*. Chapman and Hall, Inc., New York.
- Holmes, R.M., S.G. Fisher, and N.B. Grimm. 1994. Nitrogen dynamics along parafluvial flowpaths: importance to the stream ecosystem. Pages 47-56 in J.A. Stanford and H.M. Valett, editors. Proceedings of the Second International Conference on Groundwater Ecology. American Water Resources Association, Bethesda, Maryland, U.S.A.
- Jones, J.B., Jr., R.M. Holmes, S.G. Fisher, and N.B. Grimm. 1994. Chemoautotrophic production and respiration in the hyporheic zone of a Sonoran Desert stream. Pages 329-338 in J.A. Stanford and H.M. Valett, editors. Proceedings of the Second International Conference on Groundwater Ecology. American Water Resources Association, Bethesda, Maryland, U.S.A.
- Grimm, N.B. 1993. Implications of climate change for stream communities. Pages 293-314 + lit. cited in P. Kareiva, J. Kingsolver, and R. Huey, editors. *Biotic interactions and global change*. Sinauer Associates, Inc., Sunderland, Massachusetts, USA.
- Grimm, N.B., and S.G. Fisher. 1992. Responses of arid land streams to changing climate. Pages 211-233 in P. Firth and S.G. Fisher, editors. *Global Climate Change and Freshwater Ecosystems*. Springer-Verlag, New York, New York, U.S.A.
- Valett, H.M., S.G. Fisher, N.B. Grimm, E.H. Stanley, and A.J. Boulton. 1992. Hyporheic-surface water exchange: implications for ecosystem structure and function. Pages 395-405 in J.A. Stanford and J.J. Simons, editors. Proceedings of the First International Conference on Groundwater Ecology. American Water Resources Association, Bethesda, Maryland, U.S.A.
- Fisher, S.G., and N.B. Grimm. 1991. Streams and disturbance: are cross-ecosystem comparisons useful? Pages 196-221 in J.C. Cole, G.M. Lovett, and S.E.G. Findlay, editors. *Comparative analyses of ecosystems: patterns, mechanisms and theories*. Springer-Verlag, New York, New York, USA.

PUBLICATIONS—BOOK REVIEWS

- Grimm, N.B. 1986. Aquatic resources management of the Colorado River ecosystem. Journal of the North American Benthological Society 5: 85-86. (Book Review)
- Grimm, N.B. 1989. Autecological approach to the nitrogen cycle. Ecology 70:293-294. (Book review)

PUBLICATIONS—NON-REVIEWED BOOK CHAPTERS AND REPORTS

- Harms, T.K., R.A. Sponseller, and N.B. Grimm. 2007. Desert streams. In S.E. Jørgensen, editor. Encyclopedia of ecology. In press.
- Fink, J.H., C.L. Redman, and N.B. Grimm. 2000. Expanding a long term ecological research project into a national urban environmental laboratory (abstract). EOS, Transactions of the American

Geophysical Union 81: S11.

- Grimm, N.B., S.G. Fisher, S.V. Gregory, G.R. Marzolf, D.M. McKnight, F.J. Triska, and H.M. Valett. 1997. Sustainability of western watersheds: nutrients and productivity. Pages 33-45 *in* W.L. Minckley, editor. Aquatic ecosystems symposium. Report, Western Water Policy Review Advisory Commission. Nat. Tech. Inform. Serv., Springfield, VA.
- Fisher, S.G., and N.B. Grimm. 1983. Water quality and nutrient dynamics of Arizona streams. OWRT Project Completion Report A-106-ARIZ. Office of Water Research and Technology.

PUBLICATIONS—NON-REVIEWED COMMENTARIES AND EDITORIALS

- Grimm, N.B. 2006. Ecology 2020. A message from the President. Annual Report, Ecological Society of America, Washington, D.C.
- Grimm, N.B., A. Covich, and J.M. Melillo. 2006. A vision for ecology's future: where are we today? *Frontiers in Ecology and the Environment* 4:115.
- Melillo, J.M., N.B. Grimm, and W.H. Schlesinger. 2005. Ecology and the transition to sustainability. *Frontiers in Ecology and the Environment* 3:3.
- Melillo, J.M., N.B. Grimm, and A. Covich. 2005. NEON: Lighting the way forward. *Frontiers in Ecology and the Environment* 3:351.

PUBLICATIONS IN REVIEW

- Hall, S. J., B. Ahmed, P. Ortiz, R. Davies, R. Sponseller, and N.B. Grimm. Direct and indirect effects of urbanization on soil microbial functioning in the Sonoran Desert. *Ecosystems: in review*.
- Harrison, J. F., J. M. VandenBrooks, D. J. Beerling, J. B. Graham, G. D. Leikauf, R. Ferrière, C. Wiedinmyer, J. J. Elser, R. K. Monson, C. J. Klok, I. M. Miller, A. Kaiser, S. D. Smith, M. Fraser, N. B. Grimm and J. Fink. New facilities needed for replicated experimental investigations of Earth system processes. *Global Change Biology: in review*.
- Kaye, J.P., S.E. Eckert, D.A. Gonzales, J.O. Allen, S.J. Hall, R.A. Sponseller, and N.B. Grimm. Can atmospheric carbon deposition stimulate microbial respiration in desert soils? *Journal of Geophysical Research, Biogeosciences: in revision*.
- Lewis, D.B., J. D. Schade, and N. B. Grimm. Multi-scale effects of urbanization on spatial heterogeneity in an arid landscape. *Ecological Complexity: in review*.
- Michener, W.K., D.M. Leslie, Jr., R.B. Cook, B.P. Dancik, M.K. Destro, C.S. Duke, C.W. Fox, N.B. Grimm, M. B. Jones, H. Lapp, T.D. Moritz, R.K. Peet, O.J. Reichman, H. Saarenmaa, M. Schildhauer, P.F. Uhler. Data discovery and access for ecology and the environmental sciences. *Submitted*.

BOOK CONTRACT

- Grimm, N. B. The new urban ecology. Oxford University Press. Anticipated publication date: 12/09.

INVITED PRESENTATIONS

- Symposium, "Urban areas and global change." Invited presentation: Urbanization across gradients: testing hypotheses on effects of land change at multiple scales. Annual meeting, American Geophysical Union, San Francisco, CA, December 2008.
- Inaugural Freshwater Biology Summit, "Multiple stressors in aquatic ecosystems." Invited presentation:

Combined influences of climatic and anthropogenic drivers on nitrogen transport and retention in aridland stream-riparian systems. Freshwater Biological Association, Windermere, UK, September 2008.

Second Symposium on Urban Stream Ecology. Invited presentation: Ecosystem function in urban streams (with E.K. Larson). Salt Lake City, UT, May 2008.

First Minshall Lecturer, research and public lectures, Idaho State University, Pocatello, ID, October 2007.

International Workshop (inaugural), "The Hyporheic Network." Keynote: The role of hyporheic zone processes in nutrient dynamics of streams: a retrospective analysis. Sheffield, UK, June 2007.

International Workshop, "Urbanization Interactions with Biogeochemistry and Climate." Invited Speaker and Senior Mentor, Workshop of the Young Scientist Network of the Analysis, Integration and Modeling of the Earth System project, International Geosphere-Biosphere Programme. Mexico City, Mexico, September 2006.

Plenary and Awards Session: Presidential Address. Ecological Society of America Annual Meeting, Memphis, Tennessee, August 2006.

Annual Symposium, "Sustainability." Plenary presentation: Urban ecosystems: a challenge for sustainability science. St Olaf College, St Paul, MN, May 2006.

Special Session, "Urban Biogeochemistry." Invited presentation: Ecosystem responses to urbanization across the Central Arizona-Phoenix (CAP) LTER site (with S.J. Hall (presenter), N.B. Grimm, J.P. Kaye, J.O. Allen, and D.B. Lewis). American Geophysical Union Spring Meeting, Washington, D.C., May 2006.

Leadership Workshop, Ecological Society of America's Strategies for Ecology Education, Diversity and Sustainability (SEEDS). Opening lecture: Thoughts on leadership. Tempe, AZ, March 2006.

International Conference, "Ecology in an era of globalization." Opening and closing comments. Special Ecological Society of America themed meeting, Merida, Yucatan, Mexico, January 2006.

International Conference, "The circular economy and sustainable development." Plenary presentation: Urban ecosystems and the challenge to sustainability science. Hangzhou, Zhejiang Province, China, November 2005.

Presentation for the China Ministry of Land Resources, "Sustainable Land Use and Planning Training - Phoenix." CAP - LTER: Instrument of Phoenix. Arizona State University, September 26-28, 2005

Special Session, "Ecological sustainability in a world of constant change: Developing a new research agenda for ESA." Introductory and synthesis comments. Ecological Society of American Annual Meeting, Montreal, Quebec, Canada, August 2005.

Moderated roundtable luncheon discussion, "Building an ecological observatory network for regional- to continental-scale research: NEON, the National Ecological Observatory Network." Opening remarks. Ecological Society of American Annual Meeting, Montreal, Quebec, Canada, August 2005.

Special Session, "Biodiversity and ecosystem function in human-altered streams." Invited 'tutorial' presentation: Sorting out mechanisms from syndromes in the study of human-altered streams. American Society of Limnology & Oceanography Annual Meeting, Santiago de Compostela, Galicia, Spain, June 2005.

Fulbright International Scholars Seminar, "Managing and Protecting Natural Resources." Invited presentation: Impact of urban environments on streams and rivers. Tempe, AZ, February 2005.

International Workshop, "Riparian biogeochemistry in semi-arid ecosystems." Invited presentation: Hydrologic controls on nitrogen dynamics in riparian ecosystems of semi-arid landscapes. Skukuza, Kruger National Park, South Africa, October 2004.

US LTER Coordinating Committee, Science conference, "Interactions between changes in climate and disturbance regimes." Invited presentation: Urban disturbance (with S.T.A. Pickett). Fairbanks, AK, August 2004.

Symposium, "In the footsteps of Lewis & Clark: rediscovering earth from land to sea—a biogeoscience perspective." Invited presentation: A unique urban biogeochemistry? (with J.P. Kaye, S.J. Hall,

J.O. Allen, and D.B. Lewis). Ecological Society of America Annual Meeting, Portland, OR, August 2004.

International Conference, "Urbanization and stream ecology". Plenary Presentation: Nitrogen retention and transformation in urban streams (with C.L. Crenshaw, C.N. Dahm, W.J. Roach, R.W. Shielbley III, and L.H. Zeglin). Melbourne, Australia, December 2003.

Estuarine Research Foundation/US Long-Term Ecological Research Joint Symposium. Seattle, WA, September 2003. (Plenary)

Chapman Conference "Ecosystem interactions with land-use change." Santa Fe, NM, June 2003. (Invited)

Chapman Conference "Interactions between Vegetation and Hydrological Processes in Semiarid Landscapes". Taos, NM, September 2002. (Invited)

Special Symposium, "Cities of Resilience", Annual Meeting, Ecological Society of America, Tucson, AZ, August 2002. (Invited; co-author with C. Redman)

Special Session, "Physical forcing and pelagic-benthic interactions in aquatic systems", Annual meeting, American Society of Limnology and Oceanography, Victoria, BC, June 2002. (Invited)

First Annual Conference, Global Nitrogen Enrichment Program. University of Wales, Bangor, Wales, September 2001. (Plenary)

16th Annual Symposium of the U.S. Chapter of International Association of Landscape Ecology, Tempe, Arizona, April 2001. (Plenary)

Special Symposium, Annual Meeting, Ecological Society of America, Snowbird, Utah, August 2000. (Invited)

North American Benthological Society. Annual Meeting, Keystone, Colorado, May 2000. (Presidential address)

Joint symposium of the British Ecological Society and the Ecological Society of America: "Ecology: Achievement and Challenge". Orlando, Florida, April 2000. (Plenary)

"Southwest River Management and Restoration: Non-Structural Approaches." Conference sponsored by the Arizona Floodplain Management Association, Phoenix, Arizona, April 2000. (Invited)

Annual Meeting of the Association of Ecosystem Research Centers. Washington, DC, November 1999. (Invited)

8th Cary Conference, "Understanding urban ecosystems: a new frontier for science and education". Millbrook, NY, April 1999. (Plenary)

Special LTER Session on Urban Ecosystems, Annual Meeting, Ecological Society of America, Baltimore, Maryland, August 1998. (Invited)

Kaerer Visiting Scholar lecture, Center for Limnology, University of Wisconsin, Madison, WI. (Invited)

International LTER meeting, Taipei, Taiwan, November 1997. (Invited)

Special Session, "Natural and applied hydrologic variation: influences on the functioning and restoration of lotic ecosystems in semi-arid and arid regions". Aquatic Sciences Meeting, American Society of Limnology & Oceanography, Santa Fe, NM. (Invited)

Special Session, "Stream ecosystems as products of coupled hydrologic and biogeochemical processes in catchments and channels". Aquatic Sciences Meeting, American Society of Limnology & Oceanography, Santa Fe, NM. (Invited, with E. Marti and others)

Special session on undergraduate research programs. Annual Meeting, North American Benthological Society, Kallispell, MT, June 1996. (Invited)

National Center for Ecological Analysis and Synthesis Conference, "Spatio-temporal dynamics in ecological systems". National Center for Ecological Analysis and Synthesis, Santa Barbara, California, USA, February-March 1996. (Invited)

EAWAG Workshop, "Heterogeneity, surface/groundwater interaction, retention, nutrient turnover and biodiversity in the transition zones of lotic ecosystems". The Limnological Research Center, EAWAG, Kastanienbaum, Switzerland, February 1996. (Plenary)

Co-operative Research Centre for Freshwater Ecology Symposium, "Spatial and Temporal Scaling of

- Ecological Processes in Freshwater Systems". Monash University, Clayton, Victoria, Australia, December 1995. (Invited, with S. Fisher and others)
- Co-operative Research Centre for Freshwater Ecology Symposium, "Spatial and Temporal Scaling of Ecological Processes in Freshwater Systems". Monash University, Clayton, Victoria, Australia, December 1995. (Invited)
- Symposium, "Testing the influence of environmental heterogeneity on patterns and processes in streams". Annual Meeting, North American Benthological Society, Keystone, Colorado, May-June 1995. (Invited)
- 5th Cary Conference: "Linking species and ecosystems". Millbrook, NY, May 1993. (Plenary)
- Symposium, "Benthic algal ecology: processes and differential species performance". Annual Meeting, North American Benthological Society. Calgary, Alberta, Canada, May 1993. (Invited)
- Symposium: "Aquatic ecology: scale, pattern and process". British Ecological Society and American Society for Limnology and Oceanography, Cork, Ireland, April 1992. (Invited)
- Gordon Research Conference: "Estuarine processes". New Hampton, New Hampshire, June 1991. (Invited)
- Workshop: "Evolutionary, population, and community responses to global change". Friday Harbor Labs, Washington, September 1991. (Invited)
- Special Symposium honoring Gerald Cole. Arizona-Nevada Academy of Science Annual Meeting, Tempe, Arizona, April 1990. (Invited)
- Symposium: "Temporal variability and disturbance in fluvial environments". Annual Meeting, American Geophysical Union, San Francisco, California, December 1990. (Invited)
- USEPA/NASA/NABS - sponsored Symposium: "Troubled waters of the greenhouse earth: climate change, water resources, and freshwater ecosystems. Blacksburg, Virginia, May 1990. (Invited)
- Symposium: "Groundwater limnology". International Society of Limnology. Munich, West Germany, August 1989. (Invited)
- Boden Conference on Stream Ecology, Australian Society of Limnology. Thredbo, New South Wales, Australia, January 1985. (Invited)

CONTRIBUTED PRESENTATIONS AND ABSTRACTS

- 2008 North American Benthological Society Annual Meeting, Salt Lake City, UT, May 2008: 5 papers co-authored.
American Geophysical Union Annual Meeting, San Francisco, CA, December 2008:
Ecological Society of America Annual Meeting, Milwaukee, WI, August 2008:
- 2007 ASLO, Aquatic Sciences Meeting, Santa Fe, NM, February 2007: 2 papers co-authored.
North American Benthological Society Annual Meeting, Columbia, SC, May 2007: 4 papers co-authored.
Ecological Society of American Annual Meeting, San Jose, CA, August 2007: 2 papers co-authored.
- 2006 LTER All-Scientists Meeting, Estes Park, CO, September 2006: 1 poster authored, 6 posters co-authored.
Ecological Society of American Annual Meeting, Memphis, TN, August 2006: 7 posters co-authored.
North American Benthological Society Annual Meeting, Anchorage, AK, June 2006: 1 paper presented, 2 papers co-authored, 1 poster co-authored.
- 2005 Ecological Society of American Annual Meeting, Montreal, Quebec, August 2005: 2 papers co-authored.
American Society of Limnology & Oceanography Annual Meeting, Santiago de Campostela, Galicia, Spain, June 2005: 1 poster co-authored.

- North American Benthological Society and American Geophysical Union Joint Annual Meeting, New Orleans, LA, June 2005: 3 papers co-authored.
- 2004 North American Benthological Society Annual Meeting, Vancouver, BC, June 2004: 1 paper presented, 5 papers co-authored.
Ecological Society of American Annual Meeting, Portland, OR, August 2004: 1 paper presented, 3 papers co-authored.
- 2003 North American Benthological Society Annual Meeting, Athens, GA, June 2003: 1 paper co-authored.
Chapman Conference "Ecosystem interactions with land-use change." Santa Fe, NM, June 2003: 1 paper co-authored.
American Geophysical Union, Spring Meeting, Nice, France, April 2003: 1 poster presented; 1 paper co-authored.
- 2002 American Geophysical Union Fall Meeting, San Francisco, CA, December 2002: 1 paper co-authored.
North American Benthological Society Annual Meeting, Pittsburgh, PA, May 2002: 2 papers co-authored.
American Society of Limnology & Oceanography Annual Meeting, Victoria, BC, June 2002: 1 poster co-authored.
Ecological Society of American Annual Meeting, Tucson, AZ, August 2002: 2 papers co-authored.
- 2001 Arizona Riparian Council, Tucson, Arizona, May 2001: 1 paper co-authored.
International Association of Landscape Ecology, U.S. Chapter Tempe, Arizona, April 2001: 2 posters co-authored.
North American Benthological Society, LaCrosse, Wisconsin, June 2001: 1 paper presented, 3 papers co-authored.
Ecological Society of America, Madison, Wisconsin, August 2001: 1 paper presented, 7 papers co-authored.
- 2000 North American Benthological Society, Keystone, Colorado, June 2000: 2 papers co-authored
American Geophysical Union, Washington, DC, May 2000. 1 paper co-authored
All-Scientists' Meeting, US LTER Network, Snowbird, Utah, August 2000. 1 poster co-authored
Ecological Society of America, Snowbird, Utah, August 2000: 4 papers and 2 posters co-authored
American Meteorological Society, Third Symposium on the Urban Environment: 1 paper co-authored
- 1999 Ecological Society of America, Spokane, WA, August 1999. 5 papers co-authored
International Society for Landscape Ecology, Snowmass, CO, July 1999: 1 paper co-authored
North American Benthological Society, Duluth, MN, May 1999: 3 papers co-authored
- 1998 Ecological Society of America, Baltimore, Maryland, August 1998: 3 papers co-authored
Societas Internationalis Limnologiae. Dublin, Ireland, August 1998: 1 paper presented, 2 papers co-authored
North American Benthological Society, Prince Edward Island, June 1998: 8 papers co-authored.
Seventh International Symposium on Society and Resource Management: Culture, Environment, and Society. Columbia, Missouri, May 1998. 1 paper co-authored
- 1997 Ecological Society of America, Albuquerque, NM: 1 paper presented, 5 papers co-authored
American Society of Limnology & Oceanography, Santa Fe, NM. 1 paper co-authored
- 1996 North American Benthological Society, Kallispell, MT.: 1 paper presented, 4 papers co-authored.
American Society for Limnology & Oceanography, Milwaukee, WI.: 1 paper co-authored
- 1995 North American Benthological Society, Keystone, Colorado: 5 papers and 1 poster co-authored
Entomological Society of America, Las Vegas, Nevada. 1 paper co-authored
Ecological Society of America, Snowbird, Utah: 1 paper presented, 1 paper co-authored
- 1994 Southwestern Association of Biologists, Abiquiui, NM: 2 papers co-authored
International Conference on Ground-Water Ecology, Atlanta, Georgia: 2 papers co-authored

- North American Benthological Society, Orlando, Florida: 2 papers co authored
 American Geophysical Union and American Society of Limnology and Oceanography, Ocean Sciences Meeting. San Diego, California: 1 paper co authored
- 1993 North American Benthological Society, Calgary, Alberta, Canada: 4 papers co authored
 Jornadas Tecnicas Internacionales: Bases ecológicas para la restauración de humedales en la cuenca Mediterranea. La Rabida, Huelva, Spain, June: 1 poster presented
- 1992 Societas Internationalis Limnologiae. Barcelona, Spain, August: 1 poster presented; 2 posters co authored
 North American Benthological Society. Louisville, Kentucky, May : 1 paper presented, 3 papers co authored
 Ecological Society of America. Honolulu, Hawaii: 1 paper co authored
 International Conference on Ground-Water Ecology, Tampa, Florida, April: 1 paper co authored.
- 1991 North American Benthological Society. Santa Fe, New Mexico, May: 3 papers co authored
 American Geophysical Union, San Francisco, California, December: 1 paper co authored
- 1990 Ecological Society of America. Snowbird, Utah, July–August: 1 paper presented.
- 1989 Workshop on Solute Dynamics in Stream Ecosystems, University of Mississippi, February: 1 paper presented.
- 1988 North American Benthological Society. Tuscaloosa, Alabama: 1 paper presented, 2 paper co authored.
 Ecological Society of America. Davis, California: 1 paper presented
- 1987 Societas Internationalis Limnologiae. Hamilton, New Zealand: 1 paper co authored
- 1985 North American Benthological Society. Corvallis, Oregon: 1 paper presented.
- 1984 North American Benthological Society. Raleigh, North Carolina: 1 paper presented.
- 1983 North American Benthological Society. LaCrosse, Wisconsin: 1 paper presented.
- 1980 American Society of Limnology and Oceanography. Knoxville, Tennessee: 1 paper co authored
 Arizona–New Mexico Chapter, American Fisheries Society. Thatcher, Arizona: 1 paper presented.
- 1979 Arizona-Nevada Academy of Science. Tempe, Arizona: 1 presented, 2 papers co authored.

GRANTS AWARDED

- “Strategic investment in ARENA (The Arizona Environmental Array),” PI/PD N.B. Grimm, Co-PIs J.M. Briggs and C. Gries (\$60,440). Science Foundation Arizona, 2007–2008.
- “CAA: Environmental and economic impacts of material used in future urban development.” J. Crittenden (PI), 19 Co-PIs with N.B. Grimm (\$399,280). Science Foundation Arizona, 2007–2008.
- “CAP LTER REU, Other, Schoolyard, and Social Science Supplements.” PI/PD N.B. Grimm, Co-PD C.L. Redman, Co-PIs S. Earl, C. Gries, A. York, C. Boone, M. Nation (\$123,000). Long Term Studies Program, National Science Foundation, 2008–2009.
- “REU: Ecosystem response to N and organic N deposition from the urban atmosphere.” PI/PD N.B. Grimm, Co-PIs J.O. Allen, S.J Hall; (\$7,000). Ecosystem Studies Program, National Science Foundation, 2008.
- “Technician Support: ICP-MS research in the W. M. Keck Foundation Laboratory for Environmental Biogeochemistry, Arizona State University. Phase I.” PI/PD A.D. Anbar, Co-PIs N.B. Grimm, L.A. Leshin, E.L. Shock (\$224,994). Instrumentation & Facilities Program, Earth and Atmospheric Research, National Science Foundation, 2005–2008.
- “IGERT Formal Proposal: Integrative Graduate Education and Research Training in Urban Ecology.” PI/PD S.G. Fisher, Co-PIs N.B. Grimm, A.P. Kinzig, E. Hackett, and C.L. Redman (\$3,184,586). IGERT Program, National Science Foundation, 2005–2011.
- “Collaborative Research: Ecosystem response to N and organic C deposition from the urban atmosphere.” PI/PD N.B. Grimm, Co-PIs J.O. Allen, S.J Hall; Collaborator J.P. Kaye (Penn State) (\$712 K total award, \$630K ASU portion, including 2006–2007 supplements). Ecosystem Studies

- Program, National Science Foundation, 2005–2008.
- “Sustainability science and engineering education.” J Crittenden (PI), B. Allenby, Y. Chen, N.B. Grimm, S. Guhathakurta, D. Pijawka, S. Van der Leeuw, P Westerhoff, J. Wu (\$89,917). Carnegie-Mellon University sub, 2005–2008.
- “Central Arizona-Phoenix LTER: Phase 2.” PI/PD N.B. Grimm, Co-PD C.L. Redman, 23 Co-PIs. (\$5,266,038 including 2005-2007 supplements). Long-Term Studies Program, National Science Foundation, 2004–2010.
- “CAP LTER: Land-use change and ecological processes in an urban ecosystem of the Sonoran Desert.” PI/PD N.B. Grimm, Co-PD C.L. Redman (\$866K including supplements). Accomplishment-Based Renewal, Long-Term Studies program, National Science Foundation, 2003–2004.
- “W. M. Keck Foundation Laboratory for Environmental Biogeochemistry.” PI/PD E. Shock, Co-PIs N.B. Grimm, L. Leshin, and P. O’Day (\$900,000). W.M. Keck Foundation, 2002–2003.
- “Decision Support for Urban Development: Air Quality, Social Injustice, Material and Energy and the Impact of Social Decision Making – A Proof of Concept Demonstration.” J. Crittenden, E. Corley, J. Fernando, N. Grimm, S. Guhathakurta, P. McCartney, A. Sawhney, Y. Chen. National Science Foundation. (\$115,000.) 2004-2005.
- “A Decision Support Tool for Sustainable Urban Water Management.” J. Crittenden, N. Grimm, S. Guhathakurta, P. McCartney, E. Corley, P. Westerhoff, P. Fox. EPA P3 Design (\$10,000.) 2004-2005.
- “Agrarian Landscapes in Transition: A Cross-Scale Approach.” PI/PD C.R. Redman, Co-PIs D. Foster, M. Guttman, P. Kareiva, and A.P. Kinzig, Senior Associate N.B. Grimm (and others) (\$1,999,952). Biocomplexity Special Competition Coupled Human and Natural Systems, National Science Foundation, 2003–2006.
- “Coupled biogeochemical cycles in human-dominated ecosystems” (PI/PD P. Brezonik, U. of Minnesota, Senior Associate N.B. Grimm (\$100,000). Biocomplexity Special Competition on Coupled Biogeochemical Cycles (Incubation), National Science Foundation, 2001–2002.
- “Nitrate uptake and retention in streams: mechanisms and effects of human disturbance.” PI/PD P. Mulholland, Co-PIs Webster, S. Hamilton, J. Tank, and R.O. Hall, Senior Associate and PI for Southwest N.B. Grimm (\$3 M, \$137,619 ASU portion). Integrated Research Challenges in Environmental Biology Special Competition, National Science Foundation, 2001–2006.
- “Down to Earth Science: Graduate Teaching Fellows in K-12 Education.” PI/PD B.L. Ramakrishna, Co-PI N.B. Grimm and 20 others (\$1,324,145). GK-12 Program, National Science Foundation, 2001–2006.
- “IGERT Formal Proposal: Integrative Graduate Education and Research Training in Urban Ecology.” PI/PD S. Fisher, Co-PIs C. Redman, W.L. Graf, N.B. Grimm, E. Hackett, and P. Christensen (\$2,699,970). IGERT Program, National Science Foundation, 2000–2005.
- “Organic matter removal in urban streams.” PI/PD; with graduate student Jennifer Edmonds (\$10,000). Competitive Grants Integrating Applied and Basic Benthic Biology (open to NABS student membership), Proctor and Gamble, 2000–2002.
- “Networking our research legacy: infrastructure to document, manage, and access ecological data resources.” PI/PD P. McCartney, Co-PIs T.P. Craig, C. Gries, N.B. Grimm, and C.L. Redman (\$720,489). Database Activities Program, National Science Foundation, 1999–2002.
- “A science and technology center for the sustainability of water resources in semi-arid regions.” Senior Associate/Participant (of 50; PI/PD Soroosh Sorooshian, Senior Associate N.B. Grimm with 50 others from 17 universities and governmental organizations (\$14,491,268 total award; \$285,512 ASU subcontract to NBS). Science and Technology Centers Programs, National Science Foundation, 1999–2004.
- “UMEB: Diverse approaches to environmental research.” PI/PD D.L. Pearson, Co-PIs J.P. Collins, S.H.Faeth, N.B. Grimm, R.L. Rutowski (\$215,983). Undergraduate Mentoring in Environmental Biology Program, National Science Foundation, 1999–2003.

- “Long term monitoring of Phoenix forest ecosystem/CAP LTER.” PI/PD N.B. Grimm, Co-PD C.L. Redman (\$10,000). U.S. Department of the Interior, Forest Service, 1998–1999.
- “Integrating linkages among aquatic and terrestrial components of arid landscapes.” PI/PD S.G. Fisher, Co-PI N.B. Grimm (\$250,000). Ecosystem Studies Program, National Science Foundation. 1998–1999
- “Dissertation Research: The effects of heterogeneity and scale on nutrient dynamics in a desert stream.” PI/PD N.B. Grimm with graduate student C. Lisa Dent (\$6,107). Division of Environmental Biology, National Science Foundation. 1998–1999.
- “Central Arizona-Phoenix LTER: Land use change and ecological processes in an urban ecosystem of the Sonoran Desert.” PI/PD N.B. Grimm, Co-PD C.L. Redman, 16 Co-PIs (\$4,999,066 including Geosciences-Engineering, General, Curation, Schoolyard LTER, Connectivity, and REU Supplements 1997–2003). Long Term Studies Program, National Science Foundation, 1997–2003.
- “LTREB: Short-Term Climate Change and Variable Response to Disturbance in an Arid Land Watershed-Stream Ecosystem.” PI/PD N.B. Grimm, Co-PI S.G. Fisher (\$254,959 including REU supplement 1997). Long Term Studies Program, National Science Foundation, 1997–2002.
- “Nitrogen Uptake, Retention, and Cycling in Stream Ecosystems: An Intersite N-15 Tracer Experiment.” Lead PIs J.R. Webster, J.L. Meyer, P.J. Mulholland, B.J. Peterson; Co-PIs W.B. Bowden, W.K. Dodds, S. Findlay, S.G. Fisher, S.V. Gregory, N.B. Grimm, S.K. Hamilton, A.E. Hershey, S.L. Johnson, W.B. McDowell, E. Martí, H.M. Valett, Co-PI’s (\$1,100,000; \$53,185 ASU sub-contract to N.B. Grimm, E. Marti, S. Fisher). Ecosystem Studies Program, National Science Foundation, 1996–1999.
- “Effects of Disturbance and Spatial Heterogeneity on Nutrient Retention and Transport in a Stream-Riparian Ecosystem.” PI/PD S.G. Fisher, Co-PI N.B. Grimm (\$800,000). Ecosystem Studies Program, National Science Foundation, 1993–1998.
- “UMEB: Research Experience for Undergraduates in Ecology.” PI/PD N.B. Grimm, Co-PIs J.P. Collins, J.J. Elser, S.H. Faeth, S.G. Fisher, S.W. Rissing (\$250,933). Division of Environmental Biology, National Science Foundation, 1993–1998.
- “Functional Assessment of Effluent Dominated Riparian Ecosystems.” PI/PD D.T. Patten, Co-PIs N.B. Grimm, J.C. Stromberg, R.D. Ohmart, T. Maddock III (\$27,020). Research Grants Program, Water Resources Research Program, US Geological Survey, 1995–1996.
- “Ecology of Hyporheic and Groundwater Communities: Distribution, Response to Stress, and Recovery from Disturbance.” PI/PD S.G. Fisher, Co-PI N.B. Grimm (\$128,465). Exploratory Research Grants Program, United States Environmental Protection Agency, 1994–1996.
- “Analytical Laboratory for Research in Environmental Biology.” PI/PD N.B. Grimm, Co-PIs J.J. Elser, J.H. Fewell, S.G. Fisher, J.F. Harrison, T.A. Markow, M.C. Moore, G.E. Walsberg (\$150,000). Instrumentation and Instrument Development Program, National Science Foundation, 1993.
- “LTREB: Short-Term Climate Change and Variable Response to Disturbance in an Arid Land Watershed-Stream Ecosystem.” PI/PD N.B. Grimm, Co-PI S.G. Fisher (\$236,000 including REU Supplements, 1992, 1993, 1994, 1996). Long Term Studies Program, National Science Foundation, 1991–1996.
- “Stability of a Stream Ecosystem: LTER Supplement.” PI/PD S.G. Fisher, Co-PI N.B. Grimm (\$24,620). Ecosystem Studies Program, National Science Foundation, 1991–1992.
- “Patterns, controls, and ecosystem consequences of trophic structure in a stream.” PI/PD S.G. Fisher, Co-PIs N.B. Grimm, T.L. Dudley (\$99,000). Ecosystem Studies Program, National Science Foundation, 1990–1992.
- “Stability of a stream ecosystem to disturbance by flooding and drying.” PI/PD S.G. Fisher, Co-PI N.B. Grimm (\$622,000 including REU supplements 1990, 1991). Ecosystem Studies Program, National Science Foundation, 1989–1992.
- “Factors controlling periphyton abundance and production during stream succession.” PI/PD N.B. Grimm (\$58,000). Post-Doctoral Research Fellowship Program, Biotic Systems and Resources,

National Science Foundation, 1987–1989.

PROFESSIONAL HONORS AND SERVICE ACTIVITIES

Editorial Boards

Guest Editor: *Proceedings of the National Academy of Science of the USA* (2008)

Editor: *Ecology* (2007–)

Assigning Editor: *Ecological Applications* (2007–)

Editor: *Ecology Letters* (2001–2002)

Editor: *Ecosystems* (1997–2006)

Editor: *Ecology* and *Ecological Monographs* (1994–1997; emeritus 1998)

Associate Editor: *Journal of the North American Benthological Society* (1991–1994)

Review Panels and Advisory Board

Member: Scientific Committee, Catalan Institute for Water Research, Girona, Spain (2007–)

Member: Advisory Board, EPSCoR Program, University of Alaska, Fairbanks (2007–)

Member: Advisory Board, Integrative Graduate Education and Research Training program in urban hydrology, University of Maryland Baltimore County (2006–)

Member: H.J. Andrews LTER Site Review Team, National Science Foundation (2005)

Advisor, Willamette River Biocomplexity Project, Oregon State University, Corvallis, OR (2004)

Panel Member: National Ecological Observatory Network (NEON) Panel, National Science Foundation (2004)

Member: External Advisory Board, Coweeta Long-Term Ecological Research Project (2004)

ASU Representative: Consortium of Universities for the Advance of Hydrological Sciences, Inc. (2001–2004)

Member: Committee on Hydrologic Sciences, National Research Council (2002–2003)

Panel Member: Science and Technology Centers Panel, National Science Foundation (2000)

Chair: H.J. Andrews LTER Site Review Team, National Science Foundation (1999)

Scientific Advisor: University of Évora Center for Applied Ecology (Centro de Ecologia Aplicada), Évora, Portugal, 1998–2000 (annual meetings).

Panel Member: Long-Term Ecological Research Panel, National Science Foundation (1998)

Chair: National Center for Ecological Analysis & Synthesis Scientific Advisory Board (1999–2000)

Member: National Center for Ecological Analysis & Synthesis Scientific Advisory Board (1997–2000)

Member: McMurdo Dry Valleys LTER Site Review Team, National Science Foundation (1997)

Panel Member: Ecosystem Studies Panel, National Science Foundation (1990, 1991–1994)

Panel Member: Environmental Biology Exploratory Research Panel, U.S. Environmental Protection Agency (1991–1993)

Member: Bonanza Creek and Toolik Lake LTERs Site Review Team, National Science Foundation (1991)

Member: Walker Branch Watershed Project Review Team, Environmental Research Division, U.S. Department of Energy (1991)

Advisory Panel Member: Sevilleta Long-Term Ecological Research Project (1991)

Service to Professional Societies

COUNCIL OF SCIENTIFIC SOCIETY PRESIDENTS: Governing Board member-at-large, elected (2006)

AMERICAN SOCIETY OF LIMNOLOGY AND OCEANOGRAPHY: Special Symposium (October 1994),

"Freshwater Ecosystems and Climate Change in North America." (Chair, Regional

Working Group for the Basin and Range, Arid Southwest and Mexico region; Member,

Steering Committee; 1993–1994)
CONSORTIUM OF UNIVERSITIES FOR THE ADVANCEMENT OF HYDROLOGIC SCIENCES, INC.: ASU Representative to the Board of Directors (2002–); Synthesis Center Committee (2003).
ECOLOGICAL SOCIETY OF AMERICA: Nominating Committee (Chair, 2006–2007); Past President (2006–2007); President (2005–2006); President-Elect (2004–2005); Governing Board (2004–2007); Eminent Ecologist Award and Distinguished Service Citation Selection Committee (Member 1994–1997); Research Needs Committee (Member, 1993–2003).
NORTH AMERICAN BENTHOLOGICAL SOCIETY: Name Evaluation Committee (2002–2003); President-Elect (1998–1999); President (1999–2000); Past President (2000–2001); Awards Selection Committee (Chair, 1999–2000); Executive Committee (Chair, 1994–1995, Member 1995–1996, 1998–2001); Award of Excellence Committee (2001–2005); Special Symposium (October 1994), "Freshwater Ecosystems and Climate Change in North America." (Chair, Regional Working Group for the Basin and Range, Arid Southwest and Mexico region; Member, Steering Committee; 1993–1994); NABS Name Committee (Chair, 1992–1993); Program Committee, North American Benthological Society Annual Meeting, Santa Fe, New Mexico (Co-chair, 1990–1991); Elections and Place Committee (Chair, 2000–2001, Member, 1984–1985 and 1988–1989).
SOCIETAS INTERNATIONALIS LIMNOLOGIAE: USA National Representative (2000–2004).

Other Professional Service Activities

Contributing Author: U.S. Climate Change Science Program (CCSP) Unified Synthesis Product (March–October 2008)
Member: Writing Team, Long-Term Ecological Research Network Integrative Science for Society and Environment Proposal (2006–2007)
Member: Steering Committee, Consortium for Connectivity at Continental Scales (3Cs). coordinated national response to the National Ecological Observatory Network (NEON) request for information, D. Peters and others, Lead Scientists (2006–2007); also Team Leader for “Land change: ecosystem responses to urbanization and pollution across climatic and societal gradients” and Member, Steering Committee, for “STREON: Stream experiment and observational network.”
Member: Steering Committee, Cary Conference on Ecology and Urban Design (2006–2007)
Workshop Organizer (with C.L. Redman): Urbanization in context: how environmental problems and their solutions vary among biophysical and societal settings. LTER All-Scientists Meeting, Estes Park, CO, September 2006.
Special Session Organizer (with A. Covich and C. Duke): An ecologists’ community discussion of funding agency initiatives. Annual Meeting of the Ecological Society of America, Memphis, TN, August 2006
Senior Mentor: Workshop of the Young Scientist Network of the Analysis, Integration and Modeling of the Earth System project, International Geosphere-Biosphere Programme. Mexico City, Mexico, September 2006
Retreat Co-Organizer (with M. Nation, C. Redman, J. Wu, J. Briggs, and P. Gober): Interactions of urbanization with climate change. CAP LTER/DCDC retreat, Flagstaff, AZ, July 2006
Member: Conference Committee, Long-Term Ecological Research Network Planning (2006)
Member: US LTER Network Science Council (2006–)
Workshop Organizer (with J. Lobo, C.L. Redman, and B.L. Shears): The rise of cities: adaptive solutions for urbanization in desert, coastal, and tropical regions. Ecological Society of America Special Meeting, Merida, Yucatan, Mexico, January 2006.
International Conference Co-Chair (with Prof. Wenhua Li): The circular economy and sustainable development. Hangzhou, Zhejiang Province, China, November 2005.
Co-Organizer of Special Session (with G. Shaver and C. Duke): Sustainability science: a research

agenda for the Ecological Society of America. Annual Meeting of the Ecological Society of America, Montreal, Quebec, Canada, August 2005.

Symposium Organizer: Integration of geosciences and social sciences into the LTER program: progress and prospects. 3rd Annual NSF Mini-Symposium, National Science Foundation, Arlington, Virginia, February 2003.

Invited Participant: ASLO workshop, “Emerging Research Issues for Limnology: The Study of Inland Waters.” Boulder, CO, December 2002.

Symposium Organizer (with S.E. Gergel and W.H. McDowell): Integrating aquatic and terrestrial biogeochemistry in heterogeneous landscapes. Annual Meeting, Ecological Society of America, Madison, Wisconsin, August 2001. Sponsored by the Aquatic Section.

Special Session Organizer (with J. Edmonds): Urban stream and watershed ecology. North American Benthological Society, LaCrosse, Wisconsin, June 2001.

Host: Semi-annual Coordinating Committee Meeting, US LTER Network, Tempe, AZ, April 2001.

Invited Participant: Lincoln Institute for Land Policy Workshop, “Greater Phoenix 2100.” The Flynne Foundation Headquarters, Phoenix, Arizona, April 2001.

Co-Organizer of Workshop: “Human modifications of hydrological cycles and their impact on biogeochemistry at local and regional scales”, with L. Band and D. Childers; LTER All Scientists’ Meeting, Snowbird, UT, August 2000.

Co-Organizer of Workshop: “Development of coupled hydrological-biogeochemical models of materials transport at the landscape scale”, with J. Melack, LTER All Scientists’ Meeting, Snowbird, UT, August 2000.

Invited Participant: David H. Smith Conservation Research Fellowships Science Advisors Workshop, sponsored by The Nature Conservancy, St. Louis, MO, June 1998.

Member: US LTER Network Coordinating Committee (1997–2006).

Scientific Workshop Participant and Presenter: Western Water Policy Advisory Commission, Scientific Workshop, “Sustainability of Western Watersheds”. Tempe, AZ, February 1997.

Dissertation Examiner/Tribunal Member: E. Martí Roca, Universitat de Barcelona, Barcelona, Spain (1995).

Dissertation Examiner/Tribunal Member: R. Gómez Cerezo, Universidad de Murcia, Murcia, Spain (1995).

Member: Review Team, Biological Research Forum on the Edwards Aquifer, Austin Texas (Sponsored by the Nature Conservancy; April 1994)

Member: Conference Organizing Committee, Second International Conference on Ground Water Ecology. (Sponsored by the U.S. Environmental Protection Agency and the American Water Resources Association; 1993–1994)

Member: Ground Water Ecology Strategic Workgroup, US Environmental Protection Agency (1992–1993)

Extramural Reviewer for Funding Agencies: National Science Foundation (Ecosystem Studies, Ecology, Environmental Geochemistry and Biogeochemistry, Hydrological Studies, UMEB, International Programs), US Environmental Protection Agency, British National Science Foundation

Reviewer for Journals: *American Midland Naturalist*, *Archiv fur Hydrobiologie*, *Australian Journal of Marine and Freshwater Research*, *BioScience*, *Biogeochemistry*, *Ecology*, *Ecological Applications*, *Global Change Biology*, *Hydrobiologia*, *Journal of the North American Benthological Society*, *Journal of Phycology*, *Limnology & Oceanography*, *Oecologia*, *Nature*, *Science*, *Water Resources Research*

Tenure and Promotion Reviews: Colorado State University, Cornell University, Institute of Ecosystem Studies, The Pennsylvania State University, State University of New York at Binghamton, Virginia Tech, University of California–Berkeley, University of Colorado, University of Minnesota, University of Nebraska, University of New England (Australia),

Professional Honors, Awards, and Elected Office

Fellow, American Association for the Advancement of Science: Elected 2008

Governing Board Member-At-Large (elected): Council of Scientific Society Presidents (2006)

Selected, Aldo Leopold Leadership Fellows Program, 2005 cohort (declined).

Nominated, elected: President, Ecological Society of America, July 2003 (2004–2007 one-year terms as President-Elect, President, Past President).

Executive Committee Member (elected): US Long-Term Ecological Research Network (2001–4).

Invited Participant: Workshop, The role of boundaries in ecology. Institute for Ecosystem Studies, Millbrook, NY, October 2000.

Invited Participant and Plenary Speaker: Ecology: Achievement and Challenge – a joint symposium of the British Ecological Society and the Ecological Society of America. Orlando, Florida, April 2000.

Organizer and Participant: NCEAS working group on “Integrating Terrestrial and Aquatic Perspectives of Biogeochemistry.” National Center for Ecological Analysis and Synthesis, Santa Barbara, CA, 1999.

Invited Participant and Plenary Speaker: 8th Cary Conference: Understanding urban ecosystems: a new frontier for science and education. Millbrook, NY, May 1999.

President: North American Benthological Society, 1999–2000 (President-Elect 1998–1999, Past President 2000–2001).

Invited Participant: NCEAS working group on “Unifying models of nitrogen fixation” for international SCOPE project on “Nitrogen transport and transformations: a regional and global analysis.” National Center for Ecological Analysis and Synthesis, Santa Barbara, CA, 1998–1999 (2 meetings).

Member, Planning Committee: NCEAS working group on “Interdisciplinary synthesis of recent natural and managed floods.” National Center for Ecological Analysis and Synthesis, Santa Barbara, CA, 1998–1999. Planning meeting, Washington, D.C., September 1998.

Co-Organizer and Participant: NCEAS workshop on “Developing a modeling paradigm for spatially explicit urban ecology models.” National Center for Ecological Analysis and Synthesis, Santa Barbara, CA, October 1998.

Nominated: Vice President for Science, Ecological Society of America, 1997.

Invited Participant and Speaker: International Long-Term Ecological Research Annual Meeting, Taipei, Taiwan. Nov 1997.

Invited Participant: Seventh Cary Conference, “Successes, Limitations, and Frontiers in Ecosystem Science.” Institute for Ecosystem Studies, Millbrook, NY, May 1997.

Invited Participant: NCEAS Symposium, “Synthesis in Ecology: Applications, Opportunities, and Challenges.” National Center for Ecological Analysis and Synthesis, Santa Barbara, CA, November 1996.

Invited Participant and Speaker: 1st NCEAS Symposium, “Spatio-temporal dynamics in ecological systems”. National Center for Ecological Analysis and Synthesis, Santa Barbara, California, USA, February–March 1996.

Invited Participant and Plenary Speaker: 5th Cary Conference: “Linking species and ecosystems”. Millbrook, NY, May 1993.

Invited Lectures: Australian Society of Limnology, Melbourne Chapter (1985); University of New Mexico (1986); Appalachian Environmental Laboratory, University of Maryland (1988); Arizona State University (Zoology, 1989); The Ecosystems Center, Woods Hole Marine Biological Laboratory (1989); Hampshire College (1989); Institute for Ecosystem Studies, Cary Arboretum (1990); University of New Mexico (1990); Northern Arizona University (1992); University of

British Columbia (1992); Arizona State University (Zoology, 1993); Cornell University (1995); Universitat de Barcelona, Spain (1995); Virginia Polytechnical and State University (1997); Arizona State University (Civil Engineering, 1997); Arizona State University West (1997); Arizona State University (Biology, Geology, 1998); University of Colorado (1998); University of Wisconsin (1998); Stanford University (1999); University of California, Santa Barbara (1999); Arizona State University (Geography, 2000); University of California at Riverside (May 2001); University of California at Davis (May 2001); Cornell University (October 2001); USDA-ARS Water Conservation Laboratory, Phoenix (January 2002); National Science Foundation (February 2002); University of Georgia (September 2002); Utah State University (January 2003); National Science Foundation (February 2003); University of Arizona (April 2003); Colorado State University (March 2004), Pennsylvania State University (April 2005); St Olaf College (May 2006); Carnegie Institution of Washington (May 2006); Chinese Academy of Sciences, Beijing, China (August 2006); Centre d'Estudis Avançats de Blanes, Spain (March 2007); Universidad de Murcia, Spain (March, 2007); Universitat de Barcelona, Spain (May, 2007); University of Arizona (January 2008); US Arid Land Agricultural Research Center (December 2008)

TEACHING AND SUPERVISORY ACTIVITIES

Courses Taught: Biogeochemistry, Urban Ecological Systems (bi-annually since 1998), Fundamentals of Ecology (3 y), undergraduate ecology research seminar (9 semesters), graduate seminars (Linking Species and Ecosystems, Urban Ecology, Stream and Ecosystem Ecology, Biogeochemistry of Terrestrial and Aquatic Ecosystems, Urban Ecology Reading Group, Collaborative Workshop on Geomorphic and Social History of Indian Bend Wash, Ecohydrology, Ecological Boundaries), freshman seminar (Sustainability and Environment), Limnology (lecture and lab)

Guest Lectures: Conservation Biology (ASU), Biogeochemistry (Colorado State University), Biology & Management of Terrestrial Resources (ASU), Biology & Management of Aquatic Resources (ASU), Stream Ecology (ASU and Cornell), Ecosystem Analysis (ASU), Limnology (ASU), Planning Studio (ASU), Urban Climatology (ASU), UMEB Seminar (ASU), Nature of Biological Science (ASU), Professional Values (ASU), Biology Careers (ASU), Introduction to Sustainability (ASU)

Post-doctoral Scholars Supervised (current post-docs in bold)

Tom L. Dudley (1989–1991), currently Assoc. Research Biologist, University of California Berkeley
Christopher G. Peterson (1989–1991), currently Assoc. Prof., Loyola University of Chicago
H.Maurice Valett (1991), currently Assoc. Prof., Virginia Tech
Andres Millan (1991–1992), currently Prof. Titular, University of Murcia, Spain
Josefa Velasco (1991–1992), currently Prof. Titular, University of Murcia, Spain
Rosa Gómez (1995), currently Prof. Titular, University of Murcia, Spain
Eugènia Martí (1995–1997), currently Prof. Titular, Centre d'Estudis Avançats de Blanes, Spain
Diane Hope (1997–1998), Project Manager, Central Arizona–Phoenix LTER 1998–2006, currently in private sector, Arizona
Mark Hostetler (1998–1999), currently Assoc. Prof., University of Florida
Kimberly Knowles-Yanez (1998–1999), currently Assoc. Prof., California State University Santa Monica
Markus Naegeli (1998–1999), currently in private sector, Switzerland
Nancy McIntyre (1998–2000); currently Assoc. Prof., Texas Tech
Weixing Zhu (1999–2000), currently Assoc. Prof., SUNY Binghamton
Russell Watkins (1999), current position unknown
Amy Nelson (1999–2001), currently in private sector, USA
Madhusudan Katti (2000–2002), currently Asst. Prof., California State University Fresno
Eyal Shochat (2000–2002), currently Faculty Associate, Arizona State University

John Schade (2000–2003), currently Asst. Prof., St. Olaf College
David Lewis (2000–2003), currently post-doc, Pennsylvania State University
Susanne Grossman-Clarke (2000–2003), currently Faculty Associate, Arizona State University
Sarah Gergel (at NCEAS; 2000–2003), currently Asst. Prof., University of British Columbia
Rich Sheibley (2002–2003), currently hydrologist, US Geological Survey, Tacoma, WA
Margot Kaye (2002–2004), currently Asst. Prof., Pennsylvania State University
William Cook (2003–2005), currently Asst. Prof., St. Cloud State University
David Casagrande (2003–2005), currently Asst. Prof., Western Illinois University
Kathleen Lohse (2005–2006), currently Asst. Prof., University of Arizona
Amber Wutich (2006–2007), currently Asst. Prof., Arizona State University
Ryan Sponseller (2006–2007), currently Asst. Prof., University of Alabama
Melissa McHale (2007–2008), to begin faculty appointment North Carolina State University 1/09

Graduate Scholars Supervised (current students in bold)

Sandra M. Clinton (advisor–M.S. 1996), currently Research Associate, U North Carolina Charlotte
C. Lisa Dent (advisor–Ph.D. 1999), formerly post-doc U Wisconsin; deceased
Aisha Goettl (advisor–M.S. 2001), currently AZ Department of Environmental Quality
Shero Holland (advisor–M.N.S. 2003), currently private consulting, Phoenix, AZ
Jennifer W. Edmonds (advisor–Ph.D. 2004), currently Asst. Prof., University of Alabama
W. John Roach (advisor–Ph.D. 2005), currently consultant, SymBiotic Software, Missoula, MT
John Jung (advisor–M.N.S. 2005), currently high-school teacher, Mesa, AZ
Tamara Harms (advisor–Ph.D. 2008), University of Georgia

Elisabeth Larson (advisor–Ph.D. candidate) – current student

Rebecca Hale (advisor–Ph.D. program) – current student

H. Maurice Valett (co-mentor–Ph.D. 1991), currently Assoc. Prof., Virginia Tech
Emily H. Stanley (co-mentor–Ph.D. 1993), currently Assoc. Prof., University of Wisconsin
Jeremy B. Jones (co-mentor–Ph.D. 1994), currently Assoc. Prof., University of Alaska Fairbanks
Robert M. Holmes (co-mentor–Ph.D. 1995), currently Staff Scientist, Woods Hole Marine Biological Lab.
John D. Schade (co-mentor–Ph.D. 2000), currently Asst. Prof., St. Olaf College
Matthew A. Luck (co-advisor–M.S. 2001), Ph.D. U New Mexico, currently post-doc, UC Davis
Dalaine Wood (on committee–M.S. 1990), currently instructor, Mesa Community College
Neil Mackay (on committee–Ph.D. 1996), currently instructor, Scottsdale Community College
Jennifer Johnson (on committee–M.N.S. 1997), current position unknown
Joanne Romagni (on committee–Ph.D. 1998), currently faculty, Univ. of St Thomas
Ann Schrot (on committee–M.S. 1998), current position unknown
Jonathan Snyder (on committee–M.S. 1998), current position unknown
Ayoola Folarin (on committee–M.S. 2001), current position unknown
Linda Gudex (on committee–M.S. 2003), current position unknown
Anne Huth (on committee–Ph.D. 2003, Hydrology, University of Arizona), currently environmental educator, Tucson, Arizona
Darrel Jenerette (on committee–Ph.D. 2003, Plant Biology), currently Asst. Prof., University of California Riverside
Jill Welter (on committee–Ph.D. 2004), currently Asst. Prof., College of St. Catherine's
Julia Henry (on committee–M.S. 2005), currently research associate, University of North Carolina Wilmington
Shannon Johnson (on committee–PhD 2005, Microbiology), currently post-doc, Los Alamos National Laboratory
Steven Metzger (on committee–M.N.S. 2006), current position unknown
Ryan Sponseller (on committee–Ph.D. 2006), currently Asst. Prof., University of Alabama
Chelsea Crenshaw (on committee–Ph.D. 2007, University of New Mexico), currently post-doc, Utah

State

Candan Soykan (on committee–Ph.D. 2007), currently post-doc,
Daniel Gonzalez (on committee–Ph.D. 2007, Chemical, Material, and BioEngineering), currently in
private sector, CA

Alexander Buyantuyev (Ph.D. 2008, currently post-doc, Chinese Academy of Sciences)

Kristin Gade (on committee–Ph.D. candidate)

Elizabeth Hagen (on committee–Ph.D. student)

Michelle McCrackin (on committee–Ph.D. student)

Xiaoding Zhuo (on committee–Ph.D. candidate, Chemistry and Biochemistry)

External Graduate Dissertation Juries/Reviews

Rosa Gómez Cerrezo, University of Murcia (Ph.D. 1995)

Eugènia Martí Roca, University of Barcelona (Ph.D. 1995)

Daniel von Schiller, University of Barcelona (Ph.D. 2008)

Undergraduate Scholars Supervised (current students in bold)

Amy C. Weibel,* Ph.D. Wayne State, current position unknown

Philip Camill,* Ph.D. Duke, currently Assoc. Prof., Carlton College

Derek L. Buschman,* current position unknown

Suzanne Stibbe,* M.S. University of Georgia, current position unknown

Kimberly Bailey, current position unknown

Kevin C. Petrone,* Ph.D. University of Alaska Fairbanks, current position unknown

Deborah Bishop,* current position unknown

Tegan Blaine,* Peace Corps, current position unknown

Dena Greene,* Ph.D. Southern Mississippi, current position unknown

Karen Shorty, current position unknown

E.Miguel Murphy,* M.A. in English, current position unknown

Lisa David,* current position unknown

Bryan J. Harper,* M.S. Michigan, current position unknown

Andrea J. Jackson,* M.S. Queen Mary & Westfield, J.D. UCLA, attorney in Los Angeles

Alicia M. Corbett,* Duke University - J.D., 2002, attorney in Phoenix

Jaime L. Seddon,* technician

Teresa M. Tibbets,* Ph.D. University of New Mexico, currently post-doc Montana

Jennifer Hunter, current position unknown

Kelly Donovan,* current position unknown

Andy Chan,* current position unknown

Erik Lohman, current position unknown

Katherine Malone, current position unknown

Matthew de la Peña Mattozi,* current position unknown

Noah Dillard,* peace worker

Katharina Zinnow,* current position unknown

Jennifer Zachary,* J.D. Harvard; attorney in Washington, D.C.

Brian Lutz,* current position unknown

Laura Calandrella, current position unknown

Jill Koehler,* M.S. anthropology

Nicole Garber,* St Louis University School of Medicine

Vanessa Hamer,* Peace Corps

Amanda Smith,* current position unknown

Kelly Balcarzyk,* U Alaska Ph.D. program

Philip Tarrant,* ASU M.S. program

Sone Sithonnorath, ASU undergraduate student
Megan Wegehof, ASU undergraduate student
Michelle McCrackin,* ASU Ph.D. program
Christina Wong*, ASU Ph.D. program
Kayla Graham, applying to graduate school
Rebecca Martin, technician, Idaho State University
Bony Ahmed, current student (Honors)
*attended or completed graduate/professional school

SCHOOL, COLLEGE, UNIVERSITY, AND PUBLIC SERVICE

School Committees and Activities

Faculty Leader (elected), Ecology, Evolution, and Environmental Science Faculty, School of Life Sciences (SoLS)—2007–2009
Personnel Committee, Chair, Ecology, Evolution and Environmental Science Faculty, SoLS—2007–2009
Executive Committee, SoLS—2007–
Executive Committee, School of Sustainability, SoS—2007–
Personnel Committee, School of Sustainability, SoS—2007–2008
Biogeochemistry/Microbial Ecology Search Committee— Spring–Fall 2004: Chair
Initiatives Program Committee, SoLS: Ecology, Evolution, and Environmental Science (EEES) Faculty Representative (elected)— 2003–2004
Personnel Committee (elected)— 1996–97, 1997–98, 1999–2000, 2000–01 (Chair), 2003–2004 (special Ad-Hoc for defunct Biology Department), 2005–2006
Discussion Leader, EEES faculty of SoLS— 2002–2003
Graduate Program Committee— 2001–2002
Biology & Society Program Steering Committee— 1999–2000, 2000–01, 2001–02, 2002–03
Biology & Society Search Committee— 1998–1999
Ecology Research Experience for Undergraduates Program (ECOREU) — 1993–1998: Director, Principal Investigator, Chair of Steering Committee.

- ECOREU served 24 students, 58% from underrepresented groups and 83% women, who were placed in research labs early in their college careers. Of the 24 students, half began the program in their freshman year and 7 as sophomores; 10 are Latino/a, 2 are African American, 3 are Indian, 2 are Asian American, and 8 are Anglo; 20 of the 24 are women. Responsibilities of the Director included vigorous recruitment of members of underrepresented groups (using individual mailings, announcement at campus organizations, letters to local high schools, and by working with the Honors College, ASU admissions, and the SUMS Institute to identify qualified incoming students). As of December 1998, 6 of the 9 UMEB students who had graduated from college were in graduate or medical (1) school (2 not in biology), and 2 were employed as research specialists in environmental biology. I also advised all of the students on a highly individualized basis, led the seminar series for all years of the program, and took students to national meetings (such as the Ecological Society of America meeting in Snowbird, UT, 1995), in addition to serving as research supervisor for several of the students.

Undergraduate Summer Research Symposium (UBEP Program)— 1990–2000: Organized symposium, solicited speakers, coached students on presentations
Hughes Program Steering Committee— 1994–95, 1995–96, 1996–97
Septennial Review Committee— 1994–95, 1995–96
Graduate Committees of Ph.D., M.S. students in Biology, Plant Biology, Microbiology, Chemical, Material & Bioengineering, Geological Sciences, Chemistry & Biochemistry, Hydrology & Water Resources [UA], Biology [UNM])

Environmental Biology Laboratory (later Stable Isotope Laboratory) — 1993–1998: Director, Principal Investigator. Wrote successful grant proposal to fund acquisition of equipment. Supervised technician. Laboratory is now a CLAS facility.

College Committees and Activities

Executive Council, W.M. Keck Laboratory for Environmental Biogeochemistry (2002–present)

Terrestrial Biogeochemist Search Committee (Chair) — 2001–2002

Supervisor, Honors Thesis—Bony Ahmed, BS 2009

Supervisor, Honors Thesis—Rebecca Martin, BS 2008

Supervisor, Honors Thesis—Nicole Garber, BS 2003 [Graduated Cum Laude. Currently: St. Louis University Medical School]

Supervisor, Honors Thesis—Jennifer Zachary, BS 2001 [Graduated Summa Cum Laude; Biology Department Service Award. Currently: Attorney]

Supervisor, Honors Thesis—Andrea Jackson, BS 1996 [Graduated Cum Laude 1996; Marshall Scholarship. Currently: Attorney]

Reader, Honors Thesis—Amanda McLeod (2003)

Reader, Honors Thesis—Tatjana Polony (1997)

Biosciences Council (committee to unify Life Sciences departments) — 1995–96, 1996–97 (CLAS)

Goldwater Oversight Committee (makes recommendations on Goldwater Labs policies) — 1994–95, 1995–96, 1996–97 (currently inactive) (CLAS)

Presentation, faculty workshop for Life Sciences, Senior Honor Day— 1997 (Honors College)

Mentor for Gammage Scholar (Ariane Aguilar Ullom) — 1996–1997 (Honors College)

GRSO graduate student award competition: proposal review— 1996 (Graduate College)

Graduate Concentration in Ecology (Departments of Zoology and Botany) — 1992–1997: Director, Chair of Steering Committee (CLAS)

- Wrote proposal for concentration and led Steering Committee, responded to student inquiries, developed lists of cross-disciplinary courses relevant to ecology across the university, organized Ecology Faculty symposium, designed and produced (with Graduate College support) Ecology Concentration brochure, wrote proposal for graduate program in ecology (which was rejected at departmental level).

University Committees and Activities

Chair, Council of Project Directors, Global Institute of Sustainability— 2005–2006

Planning Council, Global Institute of Sustainability— 2005–2007

President's Academic Council, Arizona State University— 2003–present

Central Arizona-Phoenix Long-Term Ecological Research Program— 1997–present: Co-Project Director, Principal Investigator, Co-Chair of Executive Committee (with Charles Redman).

- Responsibilities include coordination of research by faculty members, graduate students, and post-docs from ~12 different departments across campus. Over 9 project years, >100 faculty members, 15 postdoctoral research associates, >100 graduate students, ~75 undergraduate students, 85 K-12 teachers, and >100 community volunteers have been involved in some way in CAP LTER projects.

Faculty Women's Association Grants & Fellowships Workshop: Invited discussion leader— 2000

Personnel Committee, Office of the Vice Provost for Research— 1999–2000

Water Environment in Arid Lands Initiative— 1995–1998: member of core group

Education and Public Outreach

Speaker, "Global change in the urban century," President's Community Enrichment Program—2009

Presentation on urban ecology to "Spirit of the Senses" intellectual club, Phoenix, AZ—2007

Meeting Mentor, Ecological Society of America's Strategies for Ecology Education, Development, and Sustainability (SEEDS) program, ESA meetings—2006, 2007

Host and speaker, Ecological Society of America's Strategies for Ecology Education, Development, and Sustainability (SEEDS) Leadership Workshop—2006

Leader and speaker for the Ecological Society of America's Strategies for Ecology Education, Development, and Sustainability (SEEDS) field trip to Sevilleta LTER and University of New Mexico—2005

International Science & Engineering Fair Judge (Team Captain), Phoenix, AZ—2005

Interviewed on National Public Radio's 'Science Friday'; 1-hour topic: Urban Ecology—2004

Workshop presenter for Sally Ride Science Festival for Girls— annually 2003–2005, ASU campus

Lecture on urban ecology to teacher workshop—1998, 1999

Teacher internships in my laboratory (3 teachers, one week in summer)— 1999

International Science & Engineering Fair Judge (Team Captain), Tucson, AZ — 1996

Presentations (4-5) in elementary school classes on pollution, aquatic ecosystems, and Antarctica (Carmenati School, Tempe; Roosevelt School, Mesa) — 1996, 1997

Presentations to Girl Scouts of America "jamboree" — 1996