

CURRICULUM VITAE
H. MAURICE VALETT
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WORK ADDRESS

Department of Biological Sciences
Virginia Polytechnic Institute and State University
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EDUCATION

Ph.D. Zoology, 1991. Arizona State University, Tempe. Dissertation Title: The role of the hyporheic zone in the structure and function of a Sonoran Desert Stream
M.A. Zoology, 1985. University of Montana, Missoula. Thesis Title: Food quality and hydropsychid caddisfly density in a lake outlet stream in Glacier National Park, Montana.
B.S. Animal Biology, 1982. Western Washington University, Bellingham.

RESEARCH INTERESTS / AFFILIATIONS

Ecology and Ecosystem Hydrology; Ecosystems; Limnology; Stream Ecology, Disturbance and ecosystem biogeochemistry, Restoration ecology/riparian restoration, Groundwater-stream water interactions, Ecosystem processes in riparian zones, Stable isotopes and ecosystem ecology

North American Benthological Society, Ecological Society of America, American Society of Limnology & Oceanography, American Geophysical Union, Sigma Xi

PROFESSIONAL HISTORY

Aug 2003 – present: Associate Professor of Ecology, Department of Biological Sciences, Virginia Polytechnic Institute and State University, Blacksburg, VA

Jan 1998 – July 2003: Assistant Professor of Ecology, Department of Biology, Virginia Polytechnic Institute and State University, Blacksburg, VA

May 1996 - Dec 1997: Research Assistant Professor, Department of Biology, University of New Mexico, Albuquerque, New Mexico 87131

Jul 1994 - May 1996: Visiting Assistant Professor, Dept. of Biology, UNM

Jun 1991 - Jul 1994: Post-doctoral Research Fellow, Department of Biology, UNM

TEACHING EXPERIENCE

Va Tech (1998-2005):

Biology 4984/5984: Groundwater Ecology

Graduate and undergraduate sections of an interdisciplinary course on hydrology, geochemistry, ecology, biogeochemistry, and ecosystem ecology of groundwater ecosystems

Biology 2804: Ecology

Fundamentals of introductory ecology

Biology 5984: Stream Ecology

Graduate level course focusing on the application of ecological concepts to the populations, communities, and ecosystems of running waters

Biology 5984: Stable Isotopes in Ecosystem Ecology

Graduate level course on the methods and applications of stable isotope technology to ecological studies of energy flow and material cycling in terrestrial and aquatic ecosystems

University of New Mexico (1994-1996):

Ecosystems Ecology: Biology 514 Dept. of Biol., UNM

Graduate course on the fundamentals of ecosystem ecology and biogeochemical cycling

Limnology: Biology 495, Dept. of Biol., UNM

Undergraduate course on the study of freshwater ecosystems

RESEARCH FUNDING

Valett, H.M., J.R. Webster, P.J. Mulholland. Collaborative Research: NPARS2-A Stoichiometric Approach to Coupled N and P Cycling in Headwater Streams – Developing a N and P dual isotope assay. \$130K, NSF DEB Ecosystem Studies Aug 2007-July 2009

Benfield, E.B. and H.M. Valett. The Ecological Role of Freshwater Mussel Beds in Providing Critical Habitat for Endangered Species and Maintaining Ecosystem Function. United States Geological Survey, \$132,074, May 06 – Sep 09

Valett, H.M., S.A. Thomas, E.F. Benfield. Stream-Riparian Interactions: Disturbance, Linkages, and Resistance. NSF DEB Ecosystem Studies, \$98K, Sep 04 – Aug 06

Schreiber, M.E. and H.M. Valett. REU - Transport, Transformation, and Retention of Arsenic in a Headwater Stream: Hydrologic, Biological and Geochemical Controls. NSF Hydrologic

- Sciences, \$10K, Aug 04-Jul 07.
- Valett, H.M. Collaborative Research: The Ecological Circuitry Collaboratory (ECC), NSF DEB Ecosystem Studies, \$32K, May 04 - Apr 06.
- Benfield, E.F. and H.M. Valett. Lateral and Longitudinal Control of Organic Matter Dynamics: Responses to Watershed Manipulations. USFS Coop. Agreement, \$20K, Jul 04 – Jun 07.
- Webster, J.R. and H.M. Valett. REU - Nitrate Uptake and Retention in Streams: Mechanisms and Effects of Human Disturbances - Coweeta Site, NSF DEB \$5K, Jun 04 – May 07
- Valett, H.M. Stream Function and Riparian Buffer Width. USFS Cooperative Agreement, \$5000, Jul 03 – Sep 05.
- Schreiber, M. and H.M. Valett. Transport, Transformation, and Retention of Arsenic in a Headwater Stream: Hydrologic, Biological and Geochemical Controls. NSF Hydrologic Sciences, \$220K, Jul 02-Jun 07.
- Valett, H.M. and S.R. Earl. Dissertation Research: Quantifying Nitrogen Spiraling in Anthropogenically Enriched Stream Ecosystems. NSF DEB Ecosystem Studies, \$9985 to S.R. Earl, Jun 02 - May 03.
- Webster, J.R. and H.M. Valett. Nitrate Uptake and Retention in Streams: Mechanisms and Effects of Human Disturbances - Coweeta Site. NSF award to multi-PI group, all are subcontracted by Univ. of Tennessee, subcontract to Webster-Valett \$583,606 with ca. \$368K to cover isotope costs for all sites, \$215,606 to Tech, Jan 02 - Dec 07.
- Valett, H.M., J.R. Webster, P.J. Mulholland, C.N. Dahm, P.V. Unnikrishna and C.G. Peterson. Nitrate Retention in Headwater Streams: Influences of Riparian Vegetation, Metabolism and Subsurface Processes, H.M. Valett, PD, NSF DEB, \$1.2 million (\$800 K to Virginia Tech includes a \$377,784 subcontract to ORNL). June 1, 1999 - May 31, 02
- Valett, H.M. The Ecological Circuitry Collaboratory: Integrating Quantitative Training with Ecosystem Ecology - a multi-investigator collaboration to educate and integrate mathematically trained students with ecosystem ecology programs. \$100K. NSF Funding supplement to DEB 9815868. H.M. Valett, PD. see ><http://www.ecostudies.org/cc=>, Nov 00 - Oct 03.
- Valett, H.M. and J.R. Webster. REU-Supplement to Collaborative Research: NO₃-N retention in headwater streams. NSF DEB, Ecosystem Studies Program, \$5K, Jun 02-May 03.

- Valett, H.M. and J.R. Webster. REU-Supplement to Collaborative Research: NO₃-N retention in headwater streams. NSF DEB, Ecosystem Studies Program, \$5K, Jun 01-May 02.
- Valett, H.M. and J.R. Webster. REU-Supplement to Collaborative Research: NO₃-N retention in headwater streams. NSF DEB, Ecosystem Studies Program, \$10K, Jun 00-May 01.
- Jones, R.H., J.A. Burger, W.L. Daniels, E.F. Benfield, E.T. Nilsen, H.M. Valett, J.W. Webster, W.M. Alley, J.C. Baker, D.F. Berry, G.K. Evanylo, Reneau, R.B. and Zelany, L.W. Strategy to Link Ecology Research Programs at Virginia Tech, H.M. Valett, co-PI, VPISU ASPIRES Program, \$63,401, Jan 2000.
- Valett, H.M., J.R. Webster, E.F. Benfield, R.H. Jones and E.T. Nilsen. Aquatic-terrestrial interactions: Multi-Disciplinary Applications of Chromotography to Research and Training. HM Valett, PD, VPISU ASPIRES Program, \$46,300, Jan 1999.
- Dahm, CN, T.M. Mulhern, P.V. Unnikrishna, H.M. Valett M.C. Molles Jr. and C.S. Crawford. Riparian Ecosystem Restoration: Effects of Flooding and Vegetation Type on Annual Evapotranspiration in a Semi-Arid landscape, H.M. Valett, co-PI, NASA, \$700K, Jul 98-Jun 01.
- Crossey, L.J., and H.M. Valett. EGB: Biogeochemical Cycling of Redox-Sensitive Metals During Surface -Subsurface Water Exchange in a Shallow Alluvial Aquifer, H.M. Valett, co-PI, NSF EGB Award, \$290K, Jul 96 - Jun 99.
- Valett, H.M. Nitrogen Uptake, Retention and Cycling in Stream Ecosystems: An Intersite N-15 Tracer Experiment. H.M. Valett, PD, NSF DEB, subcontract to HM Valett, \$53,593, Jul 96 - Jun 99.
- Valett, H.M. M.E. Campana, and C.N. Dahm. Stream/Groundwater Ecotones: Hydrology, Biogeochemistry and Ecology, H.M. Valett, PD, NSF Ecosystem Studies, \$610K, Jan '95 to Dec '98.
- Valett, H.M., M.C. Molles, Jr., C.S. Crawford, M.E. Campana. SGER: Experimental Flooding of the Bosque del Apache National Wildlife Refuge, Rio Grande, NM. H.M. Valett, PD. NSF DEB Ecosystem Studies, \$25K, Jul '94 to Jun '96
- Valett, H.M. Nutrient Retention in the Rio Grande Continuum. H.M. Valett, PD. USFS Cooperative Agreement, \$40K, Sep '94 to Aug '95

AWARDS, HONORS and ACTIVITIES

Panel Member, National Science Foundation, Carbon and Water in Earth Systems, Directorate for Geosciences, June 2006

Member, Executive Committee, North American Benthological Society, 2002-2005

Member, International Committee, North American Benthological Society, 2002-2005

American Society of Agronomy, Crop Science Society of America and Soil Science Society of America, Journal of Environmental Quality, 2000 Editor's Citation for Excellence in Manuscript Review Award

Associate Editor, Journal of the North American Benthological Society, March 1998 - May 2001

Participant in 'Sustainability of western watersheds: nutrients and productivity', part of a report to the Western Water Policy Review Advisory Commission, Tempe, AZ, 1997.

Invited Investigator, International Workshop on Riparian Ecology, Swiss Federal Institute for Science and Technology, Limnological Research Center, Kastanienbaum, Switzerland, Winter 1996

Invited Speaker, Plenary Address, International Congress on Groundwater - Surface Water Ecotones, Lyon, France, Summer 1993

Invited Speaker, Plenary Address, First International Conference on Groundwater Ecology, EPA, ESA and AWRA, Tampa, Florida, Spring 1992.

PUBLICATIONS: Journals

Bonvallet, G. P. Vervier, S. Sauvage, H. M. Valett, and J.M. Sanchez-Perez. In review. Dynamics of phosphorus in a large river: influence of the hyporheic zone. Biogeochemistry

Brookshire, E.N.J., H.M. Valett, S.A. Thomas, and J.R. Webster. In press. Atmospheric N deposition increases organic N loss from temperate forest watersheds. Ecosystems

Brown, B.V., H.M. Valett, and M.E. Schreiber. In Press. Arsenic transport in groundwater, surface water, and the hyporheic zone of a mine-influenced stream-aquifer system. Water Resources Research

Earl, S.R., H.M. Valett, and J.R. Webster. In press. Comparison of nitrogen spiraling in stream ecosystems quantified using stable isotope tracers and nutrient addition experiments. Limnology and Oceanography

- Earl, S.R., H.M. Valett, and J.R. Webster. In press. Nitrate spiraling in southern Appalachian mountain streams spanning a gradient of nitrogen concentration. *Freshwater Biology*
- Lottig, N.R., H.M. Valett, and M.E. Schreiber. In press. Flooding and arsenic contamination: Influences on ecosystem structure and function in an Appalachian headwater stream. *Limnology and Oceanography*
- Burcher, C.L., H.M. Valett, and E.F. Benfield. 2007. The land-cover cascade: relationships coupling land and water. *Ecology* 88:228-242.
- Earl, S.R., H.M. Valett, and J.R. Webster. 2006. Nitrogen saturation in streams. *Ecology* 87: 2006. 3140-3151.
- Fellows, C.S., H. M. Valett, C. N. Dahm, P.J. Mulholland, and S.A. Thomas. 2006. Nutrient uptake and energy flow: Coupling ecosystem function in headwater streams. *Ecosystems* 9:788-804.
- Mulholland, P.J., H.M. Valett, S.A. Thomas, J.R. Webster. 2006. Effects of light on nitrate uptake in a small forested stream: effects of diurnal and daily variations. *Journal of the North American Benthological Society*. 25:583-595.
- Starry, O.S., H. M. Valett, and M.E. Shreiber. 2005. Nitrification rates in a headwater stream: influences of seasonal variation in carbon and nitrogen. *Journal of the North American Benthological Society* 24:753-768.
- Brookshire, E.N.J., H.M. Valett, S.A. Thomas, and J.R. Webster. 2005. Coupled cycling of dissolved organic nitrogen and carbon in a forest stream. *Ecology* 86: 2486-2497.
- Valenti, T.W., J.L. Chaffin, D.S. Cherry, M.E. Schreiber, H.M. Valett, and M. Charles. 2005. Bioassessment of an Appalachian headwater stream influenced by an abandoned arsenic mine. *Archives of Environmental Contamination and Toxicology* 49:488-496.
- Chaffin, J.L, H.M. Valett, J.R. Webster, and M.E. Schreiber. 2005. The influence of elevated arsenic on leaf breakdown in an Appalachian headwater stream. *Journal of the North American Benthological Society* 24:553-568
- Payn, R.A., J.R. Webster, P.J. Mulholland, H.M. Valett, and W.K. Dodds. 2005. Estimation of stream nutrient uptake from nutrient addition experiments. *Limnology and Oceanography: Methods* 3, 174182.
- Valett, H.M., M.A. Baker, J.A. Morrice, C.S. Crawford, M.C. Molles, Jr., C.N. Dahm, D.L. Moyer, J.R. Thibault, and L.M. Ellis. 2005. The Flood Pulse in a Semi-Arid Floodplain: Ecosystem Responses to the Inter-Flood Interval. *Ecology* 86:220-234.

- Mulholland, P.J., H.M. Valett, J.R. Webster, L.W. Cooper, S.K. Hamilton, and B.J. Peterson. 2004. Stream denitrification and total nitrate uptake rates measured using a field ¹⁵N tracer addition approach. *Limnology and Oceanography* 49: 809-820.
- Dodds, W.K., E. Marti, 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.
- 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. 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 approach. *Freshwater Biology* 48:1329-1354.
- Thomas, S.A., H.M. Valett, P.J. Mulholland, C.S. Fellows, J.R. Webster, C.N. Dahm and C.G. Peterson. 2003. A regression approach to estimating reactive solute uptake in advective and transient storage sub-compartments of stream ecosystems. *Advances in Water Resources* 26:954-976.
- Crenshaw, C.L., H.M. Valett and J.L. Tank. 2002. The effects of coarse particulate organic matter on fungal biomass and invertebrate density in the subsurface of a headwater stream. *Journal of the North American Benthological Society* 21:28-42.
- Crenshaw, C.L., H.M. Valett and J.R. Webster. 2002. The effects of augmentation of coarse particulate organic matter on metabolism and nutrient retention of hyporheic sediments. *Freshwater Biology* 47:1820-1831.
- Dodds, W.k., A. J. López, W. B. Bowden, S. Gregory, N. B. Grimm, S. K. Hamilton, A. E. Hershey, E. Martí, W. H. McDowell, J. L. Meyer, D. Morrall, P. J. Mulholland, B. J. Peterson, J. L. Tank, H. M. Valett, J. R. Webster, W. Wollheim. 2002. Nutrient uptake as a function of concentration in streams. *Journal of the North American Benthological Society* 21:206-220. (note: authors in alphabetical order following 2nd author)
- Findlay, S., J.L. Tank, S. Dye, H.M. Valett, P.J. Mulholland, W.H. McDowell, S. Johnson, S.K. Hamilton, J. Edmonds, W. Dodds, W.B. 2002. A cross-system comparison of bacterial and fungal biomass in detritus pools of headwater streams. *Microbial Ecology* 43:55-66 (note: authors in alphabetical order following 4th author)
- Mulholland, P.J., J.L. Tank, J.R. Webster, W.B. Bowden, W.K. Dodds, S.V. Gregory, H.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* 21:544-560. (note: authors in alphabetical order following 3rd author)

- Valett, H.M., C.L. Crenshaw and P.F. Wagner. 2002. Stream nutrient uptake, forest succession and biogeochemical theory. *Ecology* 83:2888-2901.
- Fellows, C.S., H.M. Valett and C.N. Dahm. 2001. Whole-stream metabolism in two montane streams: contribution of the hyporheic zone. *Limnology and Oceanography* 46:523-531.
- Martin, L.A., P.J. Mulholland, J.R. Webster and H.M. Valett. 2001. Denitrification in sediments from streams in the Southern Appalachian Mountains, USA. *Journal of the North American Benthological Society* 20:505-519.
- Peterson, C.G., M.A. Horton, M.C. Marshall, H.M. Valett and C.N. Dahm. 2001. Spatial and temporal variation in the influence of grazing macroinvertebrates on epilithic algae in a montane stream. *Archiv für Hydrobiologie* 153:29-54.
- Peterson, C.G., H.M. Valett, C.N. Dahm and M.C. Marshall. 2001. Heterogeneity in algal-grazer associations in a small montane stream. *Vereinigung für Theoretische und Angewandte Limnologie, Verhandlungen*. 27:2453-2460.
- Peterson, C.G., H.M. Valett and C.N. Dahm. 2001. Shifts in habitat templates for lotic macroalgae linked to interannual variation in snowmelt intensity. *Limnology and Oceanography* 46:858-870.
- Peterson, B.J., W. Wollheim, P.J. Mulholland, J.R. Webster, J.L. Meyer, J.L. Tank, N.B. Grimm, W.B. Bowden, H.M. Valett, A.E. Hershey, W.H. McDowell, W.K. Dodds, S.K. Hamilton, S.V. Gregory, and D.J. D'Angelo. 2001. Stream processes alter the amount and form of nitrogen exported from small watersheds. *Science* 292:86-90.
- Sponseller, R.A., E.F. Benfield and H.M. Valett. 2001. Relationships between land use, spatial scale and stream macroinvertebrate communities. *Freshwater Biology* 46:1409-1424.
- Thomas, S.A., H.M. Valett, P.J. Mulholland, C.S. Fellows, J.R. Webster, C.N. Dahm, and C.G. Peterson. 2001. Nitrogen retention in headwater streams: The influence of groundwater-surface water exchange. *The Scientific World* 1:623-631.
- Baker, M.A., H.M. Valett and C.N. Dahm. 2000. Organic carbon retention and metabolism in a near-stream groundwater ecosystem. *Ecology*. *Ecology* 81:3133-3148
- Morrice, J.A., C.N. Dahm, H. M. Valett, P.V. Unnikrishna and M.E. Campana. 2000. Terminal electron accepting processes in the hyporheic zone of a headwater stream. *Journal of the North American Benthological Society* 19:593-608

- Baker, M.A., C.N. Dahm and H.M. Valett. 1999. Acetate retention and metabolism in the hyporheic zone of a mountain stream. *Limnology and Oceanography* 44:1530-1539.
- Dahm, C.N., N.B. Grimm, P. Marmonier, H.M. Valett and Ph. Vervier. 1998. Nutrient dynamics at the interface between surface waters and ground waters. *Freshwater Biology* 40: 427-451.
- Boulton, A.J., S. Findlay, P. Marmonier, E.H. Stanley and H.M. Valett. 1998. The functional significance of the hyporheic zone in streams and rivers. *Annual Review of Ecology and Systematics*. 29:59-81. (junior authors arranged by alphabetical order)
- Molles, M.C., Jr., C.S. Crawford, L.M. Ellis, H.M. Valett and C.N. Dahm. 1998. Managed flooding for Riparian Ecosystem Restoration. *Bioscience* 48:749-756.
- Peterson, C.G., K.A. Vormittag and H.M. Valett. 1998. Ingestion and digestion of epilithic algae by larval insects in a heavily grazed montane stream. *Freshwater Biology* 40:607-623.
- Wroblicky, G.J., M.E. Campana, H.M. Valett and C.N. Dahm. 1998. Seasonal variation in surface-subsurface water exchange and lateral hyporheic area of two stream-aquifer systems. *Water Resources Research* 34:317-328.
- Morrice, J.A., H.M. Valett, C.N. Dahm and M.E. Campana. 1997. Alluvial characteristics, groundwater-surface water exchange and hydrologic retention in headwater streams. *Hydrological Processes* 11: 253-267.
- Valett, H.M., C.N. Dahm, M.E. Campana, J.A. Morrice, M.A. Baker and C.S. Fellows. 1997. Hydrologic influences on groundwater-surface water ecotones: heterogeneity in nutrient composition and retention. *Journal of the North American Benthological Society* 16:239-247.
- Valett, H.M., J.A. Morrice, C.N. Dahm and M.E. Campana. 1996. Parent lithology, groundwater-surface water exchange and nitrate retention in headwater streams. *Limnology and Oceanography* 41: 333-345.
- Dahm, C.N., K.W. Cummins, H.M. Valett and R.L. Coleman. 1995. An ecosystem view of the restoration of the Kissimmee River. *Restoration Ecology* 3:225-238.
- 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.
- Valett, H.M. 1993. Surface-hyporheic interactions in a Sonoran Desert stream: Hydrologic exchange and diel periodicity. *Hydrobiologia*. 259:133-144.

- Valett, H.M., C. Hakenkamp and A.J. Boulton. 1993. Perspectives on integrating hydrology and biology in studies of the hyporheic zone. Introduction. *Journal of the North American Benthological Society* 24:40-43.
- Hakenkamp, C., H.M. Valett and A.J. Boulton. 1993. Perspectives on integrating hydrology and biology in studies of the hyporheic zone. Conclusions. *Journal of the North American Benthological Society* 24:94-99.
- Boulton, A.J., H.M. Valett and S.G. Fisher. 1992. Spatial distribution and taxonomic composition of the hyporheos of several Sonoran Desert streams. *Archiv für Hydrobiologie* 125:37-61.
- 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.
- Valett, H.M., S.G. Fisher and E.H. Stanley. 1990. Physical and chemical characteristics of the hyporheic zone of a sonoran desert stream. *Journal of the North American Benthological Society*. 9:201-215.
- Valett, H.M. and J.A. Stanford. 1985. Food quality and hydropsychid caddisfly density in a lake outlet stream in Glacier National Park, Montana, USA. *Canadian Journal of Fisheries and Aquatic Sciences* 44:77-82.

PUBLICATIONS: Proceedings & Texts

- Webster, J.R. and H.M. Valett. 2006. Solute dynamics. *In*: F.R. Hauer and G.A. Lamberti, editors. *Stream Ecology: Field and Laboratory Exercises*. 2nd edition, Kendall/Hunt.
- Dahm, C.N., Baxter, C., H.M. Valett, and W. Woessner. 2006. Hyporheic zones. *In*: F.R. Hauer and G.A. Lamberti, editors. *Stream Ecology: Field and Laboratory Exercises*. 2nd edition, Kendall/Hunt.
- Baker, M.A., C.N. Dahm and H.M. Valett. 2000. Anoxia, anaerobic metabolism and the biogeochemical structure of the stream-groundwater interface. pp. 259-284 *In*: J.B. Jones and P.J. Mulholland (editors), *Streams and Ground Waters*. Academic Press, San Diego
- Thibault, J.R., D.L. Moyer, C.N. Dahm, H.M. Valett and M.C. Marshall. 1999. Effects of livestock grazing on morphology, hydrology and nutrient retention in four riparian/stream ecosystems, New Mexico, USA. pp. 123-128. *In*: Finch, D.M., Whitney, J.C., Kelly, J.F. and Loftin, S.R. *Rio Grande Ecosystems: linking land, water and people. Towards a sustainable future for the Middle Rio Grande Basin*. 1998, June 2-5;

Albuquerque, NM, Proc. RMRS-P-7. Ogden, UT: US Department of Agriculture, Forest Service, Rocky Mountain Research Station.

- Moyer, D.L., C.N. Dahm, H.M. Valett, J.R. Thibault and M.C. Marshall. 1998. Effects of livestock grazing on morphology, hydrology and nutrient retention in four southwestern stream ecosystems. pp. 397-408. *In*: D.F. Potts, editor, Proceedings of AWRA Specialty Conference, Rangeland Management and Water Resources. American Water Resources Association, Herndon, Virginia, TPS-98-1, 474 pp.
- Vervier, P., H.M. Valett, C.C. Hakenkamp, M.-J. Dole-Olivier. 1997. Contribution of the groundwater/ surface water ecotone concept to our knowledge of river ecosystem functioning. pgs 238-242. *In* Groundwater/Surface Water Ecotones_ biological and hydrological interactions and management options. Gibert, J., J. Mathieu, and F. Fournier (eds). Cambridge University Press, Cambridge.
- 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 31-43 in W.L. Minckley (ed.) Aquatic Ecosystem Symposium: a report to the Western Water Policy Review Advisory Commission, Tempe, AZ
- Dahm, C.N., H.M. Valett, and J.A. Stanford. 1996. Hyporheic zones. Pages 107-199, *In*: F.R. Hauer and G.A. Lamberti, editors. Stream Ecology: Field and Laboratory Exercises. Kendall/Hunt.
- Sewards, M. and H.M. Valett. 1996. Effects of grazing on nutrient retention in a headwater stream of the Rio Puerco basin. Pages 143-147 *in* Shaw, D.W. and D.M. Finch (tech. coords.) Desired future conditions for Southwestern riparian ecosystems: Bringing interests and concerns together. September 18-25, 1995. Albuquerque, NM. General Technical Report RM-GTR-272. Fort Collins, CO. US Department of Agriculture, Forest Service, Rocky Mountain Forest and Range Experiment Station. 359 p.
- Crawford, C.S., L.M. Ellis, M.C. Molles, Jr., and H.M. Valett. 1996. The potential for implementing partial restoration of the Middle Rio Grande ecosystem. Pages 93-99 *in* Shaw, D.W. and D.M. Finch (tech. coords.) Desired future conditions for Southwestern riparian ecosystems: Bringing interests and concerns together. September 18-25, 1995. Albuquerque, NM. General Technical Report RM-GTR-272. Fort Collins, CO. US Department of Agriculture, Forest Service, Rocky Mountain Forest and Range Experiment Station. 359 p
- Crawford, C.S., M.C. Molles, Jr. and H.M. Valett. 1995. Flooding and conservation in the Albuquerque bosque. Pages 101-105, *In*: Proceedings of the 39th Annual New Mexico Water Conference. WRI Report No. 290.

- Fox, D.C., R. Jemison, D.U. Potter, H.M. Valett and R. Watts. 1995. Chapter 4: Geology, Climate, Land and Water quality. Pages 52-79 in: Finch, D.M, and J.A., technical editors. Geology, diversity, and sustainability of the Middle Rio Grande Basin. General Technical Report RM-GTR-268. US Department of Agriculture, Forest Service, Rocky Mountain Forest and Range Experiment Station. 186 p.
- Baker, M.A., C.N. Dahm, H.M. Valett, J.A. Morrice, K.S. Henry, M.E. Campana and G.J. Wroblicky. 1994. Spatial and temporal variation in methane distribution at the ground water/surface water interface in headwater catchments. Pages 29-38, *In*: J.A. Stanford and H.M. Valett, editors. Proceedings of the Second International Conference on Groundwater Ecology. AWRA, Herndon, VA.
- Henry, K.S., H.M. Valett, J.A. Morrice, C.N. Dahm, G.J. Wroblicky, M.A. Santistevan and M.E. Campana. 1994. Ground water-surface water exchange in two headwater streams. Pages 319-328, *In*: J.A. Stanford and H.M. Valett, editors. Proceedings of the Second International Conference on Groundwater Ecology. AWRA, Herndon, VA.
- Lieurance, F.S., H.M. Valett, M.C. Molles, Jr., and C.S. Crawford. 1994. Experimental flooding of a riparian forest: restoration of ecosystem functioning. Pages 365-374, *In*: J.A. Stanford and H.M. Valett, editors. Proceedings of the Second International Conference on Groundwater Ecology. AWRA, Herndon, VA.
- Wroblicky, G.J., M.E. Campana, C.N. Dahm, H.M. Valett, J.A. Morrice, K.S. Henry and M.A. Baker. 1994. Simulation of stream-groundwater exchange and near-stream flow paths of two first-order mountain streams using MODFLOW. Pages 187-196, *In*: J.A. Stanford and H.M. Valett, editors. Proceedings of the Second International Conference on Groundwater Ecology. AWRA, Herndon, VA.
- Stanley, E.H. and H.M. Valett. 1992. Interaction between drying and the hyporheic zone of a desert stream ecosystem. Pages 234-249, *In*: Firth, P. and S. Fisher, editors. Global climate change and freshwater ecosystems. Springer Verlag, New York.
- Valett, H.M., S.G. Fisher, N.B. Grimm, E.H. Stanley and A.J. Boulton. 1992. Hyporheic - surface exchange: implications for the structure and functioning of desert stream ecosystems. Pages 395-405, *In*: J.A. Stanford and J.J. Simons, editors. Proceedings of the First International Conference on Groundwater Ecology. AWRA, Bethesda, Md.
- Wroblicky, G.J., M.E. Campana, H.M. Valett, J.A. Morrice, K.S. Henry, C.N. Dahm, J.V. Hurley, and J.M. Noe. 1992. Remote monitoring of stream hyporheic zones with inexpensive pressure transducer - data acquisition systems. Pages 267-277, *In*: J.A. Stanford and J.J. Simons, editors. Proceedings of the First International Conference on Groundwater Ecology. Bethesda, Md.

POSTERS, ORAL PRESENTATIONS, AND INVITED TALKS

- Valett, H.M. Watershed Ecosystems: Subsystem Response to Chronic N Loading. Invited Seminar, University of Wisconsin, March 2006.
- Valett, H.M., E.F. Benfield, Clinton, B.D. and J.D. Knoepp. Lateral and longitudinal influences of riparian zones on forest cutting: streams and forests in a patchwork. 53rd Annual Meeting of the North American Benthological Society, Anchorage, Ak, Jun 4-8, 2006. Bull. of the North American Benthological Society 23(1):235.
- Valett, H.M. Nutrient Influences on Watershed Subsystems: N cycling across a gradient of chronic N loading. Invited Seminar, University of North Carolina, Chapel Hill, November 2005.
- Valett, H.M., E.S. Bernhardt and E.N.J. Brookshire. Streams in watershed ecosystems: biogeochemical continuum concept. Ecological Society of America, Montreal, Canada, Aug 1-7, 2005
- Valett, H.M. Nutrient retention in watershed ecosystems: a spiraling approach. Invited seminar: Department of Ecology, Montana State University, October 2005
- Valett, H.M., C.L. Burcher, and E.F. Benfield. The land cover cascade: linking terrestrial and aquatic subsystems. 2005 Annual Meeting of the Geological Society of America, Salt Lake City, UT, October 2005.
- Valett, H.M. Nutrient Retention in Stream Ecosystems: Lessons from stream tracer experiments. Invited seminar, Cornell University, Sep 2004.
- Valett, H.M., E.N. J. Brookshire, and S.A. Thomas. Ecosystem Nutrient Retention: Lessons Learned from Stream Tracer Studies. 89th Annual Meeting of the Ecological Society of America, Portland, OR, Aug 1-6, 2004.
- Valett, H.M. Nutrient spiraling in stream ecosystems. Invited Seminar, Flathead Lake Biological Station, University of Montana, Jul 04
- Valett, H.M., S.A. Thomas, P.J. Mulholland, J.R. Webster, C.N. Dahm, and C.G. Peterson. Assessing transient storage influences on nutrient spiraling: an updated approach. Poster presentation at the 52nd Annual Meeting of the North American Benthological Society, Van, BC, Jun 6-10, 2004. Bull. of the North American Benthological Society 21(1):424
- Valett, H.M., S.A. Thomas, P.J. Mulholland, J.R. Webster, C.N. Dahm, and C.G. Peterson. Assessing transient storage influences on nutrient spiraling: an updated approach. Poster

- presentation at the Geol. Soc. of America Annual Meeting, Nov 2–5, 2003, Seattle, WA.
- Valett, H.M., S.A. Thomas, P.J. Mulholland, J.R. Webster, C.N. Dahm, and C.G. Peterson. Nitrate spiraling in headwater streams: the importance of temporal variation. Oral presentation at the 51st Annual Meeting of the North American Benthological Society, Athens, GA, May 27 - May 31, 2003. *Bulletin of the North American Benthological Society* 20(1):245
- Valett, H.M. 2001. Nutrient spiraling: fundamentals and applications, Invited Seminar, Anchor Environmental Consultants, Seattle, WA.
- Valett, H.M., S.A. Thomas, P.J. Mulholland, J.R. Webster and C.N. Dahm. 2001. Nitrogen retention in headwater streams: The influence of groundwater- surface water exchange. Second International Nitrogen Conference, October 14-18, Bolger Center, Potomac, MD.
- Valett, H.M., S.A. Thomas, J.R. Webster, P.J. Mulholland, C.N. Dahm, and C.G. Peterson. 2001. Nitrate Processing and Retention in Streams: Distinguishing Benthic and Interstitial Contributions to Energy Flow and Nutrient Retention. 49th Annual Meeting of the North American Benthological Society, La Crosse, WI, Keystone, CO, Jun 3-8. *Bulletin of the North American Benthological Society* 18(1):255.
- Valett, H.M., E.F. Benfield and R.A. Sponseller. 2000. Catchment land use and the physical-chemical structure of low-order streams in a southern Appalachian drainage. 48th Annual Meeting of the North American Benthological Society, Keystone, CO, May 28-Jun 1, 2000. *Bulletin of the North American Benthological Society* 17(1):168.
- Valett, H.M., C.L. Crenshaw and P.F. Wagner. 1999. Old growth vs. second growth forests: lasting impacts of land-use on surface - hyporheic interactions and nutrient retention in headwater streams. 47th Annual Meeting of the North American Benthological Society, Duluth, MN, May 25-28, 1999. *Bulletin of the North American Benthological Society* 16(1):129.
- Valett, H.M., C.L. Crenshaw and P.F. Wagner. 1999. Surface - hyporheic interactions and nutrient retention in headwater streams: old growth vs second-growth forests. *p. 183, In: American Society of Limnology and Oceanography Aquatic Sciences Meetings: Navigating into the next century, Santa Fe, NM, February 1-5, 1999.*
- Valett, H.M., P.V. Unnikrishna and C.N. Dahm. 1998. Seasonal variation in nitrogen retention by a montane headwater stream. 46th Annual Meeting of the North American Benthological Society, Charlottetown, Prince Edward Island, Canada, June 2-5, 1998. *Bulletin of the North American Benthological Society* 15(1):48.

- Valett, H.M., C.L. Crenshaw and P.F. Wagner. 1999. Surface-hyporheic interactions and nutrient retention in headwater streams: old growth vs second growth forests. American Society of Limnology and Oceanography, 1999 Aquatic Sciences Meeting, Santa Fe, New Mexico.
- Valett, H.M., C.N. Dahm, M.E. Campana, P.V. Unnikrishna, M.A. Baker and J.A. Morrice. 1996. Biogeochemical responses to snowmelt in a stream/groundwater ecotone. 44th annual meeting of the North American Benthological Society. Kalispell, Montana.
- Valett, H.M., J.A. Morrice, M.A. Baker, M.C. Molles, Jr., and C.S. Crawford. 1995. Ecological restoration of a riparian forest: limnology and biogeochemistry of manipulative flooding, Rio Grande, NM. 43rd annual meeting of the North American Benthological Society. Keystone, Colorado.
- Valett, H.M. 1994. Hydrologic exchange between streams and alluvial aquifers: Implications for the functioning of surface/groundwater ecotones. Invited Paper: Special Session on Solute transport and transformation near the interface between groundwater and streams, Fall Meetings of the American Geophysical Union. San Francisco
- Valett, H.M., C.S. Crawford, M.C. Molles, Jr. and F.S. Lieurance. 1994. Experimental flooding of a riparian forest: restoration of ecosystem functioning. Second International Conference on Groundwater Ecology. Atlanta, Georgia
- Valett, H.M. 1993. Plenary Address: Surface-groundwater exchange: hydrology, biogeochemistry and retention in stream ecosystems. Groundwater/surface water ecotones: biological and hydrological interactions and management options. UNESCO MAB and IHP Congress, Lyon, France.
- Valett, H.M., J.A. Morrice, C.N. Dahm, M.E. Campana and G.J. Wroblicky. 1993. Groundwater/surface water exchange and NO₃-N utilization in the hyporheic zone of three first-order streams. 41st annual meeting of the North American Benthological Society. Calgary, Alberta
- Valett, H.M., S.G. Fisher, N.B. Grimm, E.H. Stanley and A.J. Boulton. 1992. Hyporheic-surface water exchange: implications for the structure and functioning of desert stream ecosystems. (Invited paper). American Water Resources Association, First International Conference on Groundwater Ecology, Tampa, Florida.
- Valett, H.M., S.G. Fisher, C.N. Dahm and N.B. Grimm. 1991. Influence of the hyporheic zone on stream ecosystem dynamics. Fall Meeting of the American Geophysical Union, San Francisco, CA.

Valett, H.M. and C. Hakenkamp. 1991. Integrating hydrology and biology in studies of the hyporheic zone. Introductory remarks. Workshop coordinator, 39th Annual Meeting, Santa Fe, New Mexico.

Valett, H.M., S.G. Fisher and N.B. Grimm. 1991. Subsystem exchange: The role of the hyporheic zone in the stability of a Sonoran Desert stream. 39th Annual Meeting, Santa Fe, New Mexico.

Valett, H.M., S.G. Fisher, and E.H. Stanley. 1989. Characterization of the hyporheic zone of a Sonoran Desert stream. North American Benthological Society, 37th Annual Meeting, Guelph, Ontario.

Valett, H.M. and J.A. Stanford. 1985. Food quality and hydropsychid caddisfly density in a lake outlet stream in Glacier National Park, Montana, USA. North American Benthological Society, Program for the 33rd Annual Meeting, Corvallis, Oregon p. 58.

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