

Scott N. Miller
Associate Professor, University of Wyoming
Curriculum Vitae, March 2013

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Education

University of Arizona Tucson, AZ PhD, Watershed Management (major) Remote Sensing and Spatial Analysis (minor), 2002. Dissertation title: Scale effects of geometric complexity, misclassification error and land cover change in distributed hydrologic modeling. Major Advisor: Dr. D. Phillip Guertin; Minor Advisor: Dr. Stuart Marsh

University of Arizona Tucson, AZ Master of Science, Watershed Management, 1995. Thesis: An analysis of channel morphology at Walnut Gulch: linking field research with GIS applications. Major Advisor: Dr. D. Phillip Guertin

Brown University, Providence, RI. Bachelor of Science, Geosciences, 1991. Independent study: Two-dimensional modeling of pollutant migration in groundwater. Thesis Advisor: Dr. Donald Forsyth

Recent Employment

6/08-Present Associate Professor, Spatial Processes Hydrologist, Department of Ecosystem Science and Management, University of Wyoming. Current research areas: Fate and transport of water, sediment, and chemistry in disturbed landscapes; re-interpreting anastomosis in the Rocky Mountains; channel morphology and hydraulic / hydrologic response; spatially distributed hydrologic modeling; GIS-based spatial hydrologic modeling; spatial and temporal watershed and channel classification. Teaching responsibilities: "Wildland Hydrology (split grad/undergrad)"; "Water Resources Seminar" (split grad/undergrad); "Spatial Analysis of Watersheds and Ecosystems" (graduate level only). Lead and serve on graduate student committees throughout UW and advise undergraduate students. Perform service to University, State and federal stakeholders.

Notable items in current employment

- *Chair, Water Resources in Environmental Science and Engineering interdisciplinary PhD program*
- *Chair, MS Dual Degree in Water Resources*
- *Department Representative for Renewable Resources, 2008-2009*
- *Awarded the USDA-ARS Technology Transfer Award for GIS-based hydrologic modeling, 2008*
- *Nominated for the Lawrence Meeboer Teaching Award, Fall 2008*
- *Awarded the National Collegiate Teachers of Agriculture (NACTA) Teaching Award of Merit, 2007*
- *Awarded the UW College of Arts & Sciences Student Council "Thumbs Up Award" in recognition of outstanding positive contributions to the Univ. of Wyoming, 2007*
- *Member of the graduate faculty, University of Wyoming*
- *Adjunct Associate Professor, School of Environment and Natural Resources*
- *Academic Affiliate, Wyoming Geographic Information Science Center (WyGISC)*

- 11/09- Present Chair, Water Resources in Environmental Science and Engineering interdisciplinary PhD program. This is a newly adopted (Spring 2010) interdisciplinary, multi-college PhD program in Hydrology intended to further establish University of Wyoming as a center for water-related studies in the West. There is abundant expertise in hydrology on campus but it is not centered in any single department; thus this initiative will draw together classes and research expertise to improve the study and teaching of hydrology. The program will matriculate its first student cohort in September, 2010.
- 5/10 - Present Chair, MS Program in Water Resources. I have been nominated and selected to serve as the chair of the Master's degree program in Water Resources at University of Wyoming. This is a minor program for MS students pursuing research in water-related disciplines and provides access to research, education and special funding opportunities.
- 2007-2008 Department Representative for Renewable Resources. From Fall 2007 – Fall 2009, our department operated without a Head, and responsibilities were divided among faculty members in the department. In this role I bore communication responsibilities to facilitate department business, represent the department at College, University and State meetings, interacted with UW administration, and assumed leadership for a variety of department functions, including acquiring resources and additional student and faculty appointments.
- 8/02-5/08 Assistant Professor, Spatial Processes Ecologist, Department of Renewable Resources, Rangeland Ecology and Watershed Management Program, University of Wyoming. Responsibilities included classroom instruction at the graduate and undergraduate level, scientific research, publication of research, and service. Research topics included multi-scale hydrologic modeling with GIS, integrated stakeholder involvement and hydrologic research for sustainable watershed management, and the use of high resolution radar and LiDAR data for topographic and hydrologic research.
- 7/99-8/02 Senior Research Specialist for the University of Arizona and USDA-ARS Southwest Watershed Research Center. Research topics included large-scale hydrologic modeling with GIS, fluvial geomorphology and erosion processes, and using high-resolution radar imagery for natural resource applications. Duties also included composing research grants, developing independent research, publishing scientific manuscripts, and GIS database maintenance and improvement.
- 9/95-6/99 Research Specialist for the University of Arizona and USDA-ARS Southwest Watershed Research Center. GIS specialist focusing on the integration of GIS and watershed hydrology for research and management. Provided GIS support to other scientists and collaborated on a variety of hydrologic and geomorphic research projects.

Teaching Experience

- Current Responsible for development and instruction for undergraduate and graduate courses in support of the curriculum of the College and University. Courses are listed in greater detail below.
- 8/97 – 9/02 Co-developer and instructor for WSM 569: Spatial Analysis for Hydrology and Watershed Management, a graduate-level course at the University of Arizona. Topics include: linking GIS to lumped and distributed hydrologic models; resource characterization and decision support; interpolation techniques; sources of error; land classification and assessment; fuzzy theory; interpolation; emerging research. Overall rating of instructor's effectiveness: 4.9/5; University comparison group score: 4.3.
- 9/02 Primary instructor for a two-day training workshop for US-EPA, USGS, and USDA employees at USGS headquarters, Reston, VA. This workshop introduced research scientists to AGWA, an automated hydrologic modeling tool developed at the USDA-ARS SWRC. Developed training materials and example exercises for participants.

- May, 2001 Coordinated and was the primary instructor of a two-day training workshop for the US-EPA Landscape Ecology Branch in Las Vegas, NV. This workshop served to introduce EPA scientists and collaborators with the Automated Geospatial Watershed Assessment (AGWA) Tool and illustrate its use in landscape ecology and assessment. Developed training manuals and exercises for participants.
- 8/96-6/97 Teacher, high-school geology class at St. Gregory College Preparatory School, Tucson, AZ. Taught Juniors and Seniors introductory geology at the collegiate level with semi-weekly lab assignments and field trips.
- 9/95 – 12/95 Established and taught a series of training workshops on the use of GIS in watershed hydrology and hydrologic research at the USDA-ARS Southwest Watershed Research Center, Tucson, AZ. This was an informal working group in which I delivered a lecture series and created several tutorials and take-home assignments for participants.

Classes Taught at University of Wyoming

REWM 4700 (Spring 2013). Watershed Management. Watershed Management focuses on the methods and outcome associated with extensive land management in wildland setting and how these actions affect ecological and hydrological systems. Students gain an understanding of the principles, theory and practices of watershed management and become trained in the connections among watershed-scale management decisions and environmental outcomes, specifically related to water resources, ecological condition and human needs.

REWM 4285 / 5285 (Fall 2006 - 2012). Wildland Hydrology. This course is focused on essential and unique characteristics of the hydrologic cycle occurring on rangelands and forests. Processes controlling all aspects of the hydrologic cycle are covered, concentrating on the quantification and modeling of these processes. Also covered are aspects of watershed and land management that affect these processes. Field data collection is conducted throughout the semester on an experimental watershed in the Snowy Range, located 30 miles west of Laramie. 3 credits.

RNEW 5200 (Spring 2004 – 2006, 2010-2012, Fall 2007-2009). Spatial Analysis of Watersheds and Ecosystems. Geographic information systems (GIS) are important tools for hydrologists, ecologists, and environmental managers. This course covers topics related to the application of GIS in both research and management settings. The focus of the course is on watershed- and ecological applications at a range of scales. Topics include land classification and suitability analysis, interpolation techniques, terrain analysis, habitat modeling, model integration, and visualization. A particular emphasis is placed on sources of potential error and their ramifications in a research context. The class is taught as a 3 unit course, with 2 hours of lecture and a weekly 2 hour lab. 3 credits.

ENR 5890 (Spring, 2012). Western Water Resources. This multidisciplinary course provided a comprehensive view of the many important attributes of western rivers and aquifers and their water. Faculty from different disciplines addressed a range of key concepts in watershed science including surface and ground water hydrology, water quality, aquatic ecology and biology, economics, and law. 3 credits.

REWM 4530 / ENR 3900 (Fall 2003 - 2012). Water Resources Seminar. This course is a survey of topical issues in water resources. We investigate a range of subjects, most of which are “hot topics” either in the scientific or political arena. Water resources are critical to economic stability, human health, and the environment. Conflict can arise in the management of these resources, especially if they are or become scarce and competing interests are present. Through a review of the scientific literature and popular press we will navigate through several of these national and international issues. 1 Credit.

RNEW 5985 (Fall 2009 - 2011). Research Across Disciplines. This seminar course is designed to introduce students to a broad range of both disciplinary and interdisciplinary research conducted by and in association with faculty in the Department of Renewable Resources. The majority of speakers will be faculty and post-docs associated with the department, with occasional speakers from outside the department who have shared or overlapping interests. Speakers will present results from their own research and make readings available to students in advance of the class. 1 or 2 Credits.

RNEW 5990 (Spring 2010). Spatial Hydrology. The scope of this class is aimed at the practical use of established and emergent spatially explicit techniques for hydrologic investigations. We will investigate how these tools are best applied and understand their strengths and limitations through highly linked lectures and labs. Critical processes that drive the water cycle will be examined, including evapotranspiration, runoff, soil moisture, snowpack/glacial processes, and rainfall. Spatially explicit hydrologic modeling techniques, including the use of GIS-based tools and remote sensing technologies will be examined in theory and application. 3 Credits.

RNEW 5990 (3) (Spring 2010). Watershed Dynamics Through Time. Inter-department seminar focused on the scales of response to change exhibited by watersheds through time. This course is designed to bring in faculty and students from across campus interested in the ways in which rivers and watersheds change as a function of landscape scale, climate, orogeny, management, and other natural influences. 1 Credit.

RNEW 5985 (Spring 2006). River System Response to Change. A 2-credit seminar investigating how rivers respond to change at a variety of temporal and spatial scales. Topics range from millennial-scale adjustments to tectonic activities (basin subsidence) to hydraulics of channels for river restoration and watershed response to land cover and management change. Team-taught with faculty members from Geology & Geophysics, Geography, and Civil Engineering. 2 Credits.

REWM 5640 (Spring 2006). Spatial Process. A 3-credit course primarily taught by Dr. Li Zou, a post-doc working in my lab. I assisted Dr. Zou with the course development and consulted in teaching methods and pedagogy. This course is designed to work students through the process of GIS programming with a mix of theoretical and applied sessions. By the end of the class, students should be able to implement their own spatial concepts and research model in a functional GIS framework. 3 Credits.

ENR 1100 (Fall 2003-2005). Environment and Natural Resource Problems and Policies. This course is a survey of environmental problems and policies at the local/regional, national, and global levels. Because virtually all environmental and natural resource challenges inherently possess scientific, ethical, economic, legal, political, and other elements, this course seeks to train students to critically evaluate ENR problems and dissect apart their many interdisciplinary components. Identification of the most pressing ENR problems facing society is only the first step. At each scale of study, we will also examine, evaluate, and propose policy responses to remediate the problem. 3 Credits.

RNEW 5985 (Spring 2004). Time Scales of Fluvial Processes: A seminar that examines the behavior and variability of fluvial processes over time scales ranging from 10^{-7} to 10^7 yrs. A central theme of the seminar will be to explore how our understanding of rivers (including their hydrologic, hydraulic, sedimentologic and morphologic characteristics) depends upon the time scale of analysis. Team-taught with faculty members from Geology & Geophysics, Geography, and Civil Engineering. 1 credit.

List of Publications * denotes publication co-authorship with a student or Post-Doc

Refereed Journals

In Prep for Submittal

1. * **Miller, S.N.**, J. Vithanage, M. Berendsen, and P. Caffrey. A hydrologic modeling toolkit for the environmental assessment of oil and gas development. To be submitted to the Journal of Hydrology
2. **Miller, S.N.**. Modeling potential impacts of natural resource development in the Green River Basin, Wyoming. To be submitted to the Journal of Hydrology.
3. * Hayes, M., and **S.N. Miller**. Riparian vegetation response to beaver ponds. To be submitted to Wildlife Society Bulletin
4. * Hayes, M., and **S.N. Miller**. High-resolution landcover classification using National Agricultural Imagery Program (NAIP) data. To be submitted to Environmental Monitoring and Assessment
5. * Hayes, M., and **S.N. Miller**. Rapid collection of training data for use with high-resolution imagery classification. To be submitted to Remote Sensing Letters
6. * Chitrakar, S., **S.N. Miller**, E. Kempema, and J. Stern. Slope-base adjustments to channel rating curves. To be submitted to Journal of ASAE
7. * Vithanage, J., and **S.N. Miller**. Hydrologic modeling of the Wyoming Range. To be submitted to the Journal of the American Water Resources Association.
8. * Stern, J., **S.N. Miller**, and S. Chitrakar. Spatial modeling of erosion risk using a TIN-based structure. To be submitted to Journal of Environmental Modeling and Assessment.

Submitted

1. **Miller, S.N.**, and D.J. Semmens. Rapid assessment of channel morphology using high-resolution terrain data. Submitted to Environmental Modelling and Software. Status: re-submitted after revisions.
2. * Geiger, S., Daniels, J.M., **Miller, S.N.**, Nicholas, J. Hydrologic influence of rock glaciers in the La Sal Mountains, Utah. Revised manuscript under review with Arctic, Antarctic and Alpine Research.

In Press

1. * Baker, T.J., and **S.N. Miller**, 2013. Using the Soil and Water Assessment Tool (SWAT) to assess land use impact on water resources in an East African watershed. Journal of Hydrology. 486: 100-111. <http://dx.doi.org/10.1016/j.jhydrol.2013.01.041>.
2. * Konrad, S.K., I. Zou and **S.N. Miller**, 2012. A geographical information system-based web model of arbovirus transmission risk in the continental United States of America. Geospatial Health 7(1), 2012, pp. 157-159.
3. * Konrad SK, and **S.N. Miller**, 2012. Application of a degree-day model of West Nile virus transmission risk to the East Coast of the United States. Geospatial Health 7, 15-20.
4. * Konrad SK, and **S.N. Miller**, 2012. A temperature-limited assessment of the risk of Rift Valley fever transmission and establishment in the continental United States. Geospatial Health 6, 161-170.

5. Goodrich, D.C., D.P. Guertin, I.S. Burns, M.A. Nearing, J.J. Stone, H. Wei, P. Heilman, M. Hernandez, K. Spaeth, F. Pierson, G. B. Paige, **S.N. Miller**, W.G. Kepner, G. Ruyle, M.P. McClaran, M. Weltz, and L. Jolley, 2011. AGWA: The Automated Geospatial Watershed Assessment Tool to Inform Rangeland Management. *Rangelands*, 33(4):41-47. 2011.
6. * Jessup, B.S., Hahm, W.J., **Miller, S.N.**, Kirchner, J.W., and Riebe, C.S. (2011) Landscape response to tipping points in granite weathering: The case of stepped topography in the Southern Sierra Critical Zone Observatory: *Applied Geochemistry*, v. 26, no. Supplement 1, p. S48-S50. doi:10.1016/j.apgeochem.2011.03.0
7. * Baker, T.J., **S.N. Miller**, S.D. Prager, and D. Legg, 2010. Disaggregating human population for improved land use management. *Journal of Land Use Science*, 1747-4248, Volume 5, Issue 4, 2010, Pages 237 – 257
8. * Sharma, M., G. Paige, and **S.N. Miller**, 2010. DEM development from ground based LiDAR data: a method to remove non surface objects. *Remote Sens.* 2010, 2(11), 2629-2642; doi:10.3390/rs2112629
9. * Schrag, A.M., S.K. Konrad, **S.N. Miller**, B.L. Walker, S.C. Forrest, 2010. Climate-change impacts on sagebrush habitat and West Nile virus transmission risk and conservation implications for greater sage-grouse. *GeoJournal* DOI 10.1007/s10708-010-9369-3.
10. * Griscom, H.R., **S.N. Miller**, T. Gyedu-Ababio, and R. Sivanpillai, 2010. Mapping Land Cover Change for Hydrological Modelling of the Luvuvhu Catchment, South Africa. *Geojournal* 75:163–173.
11. Sivanpillai, R., and **S.N. Miller**, 2010. Improvements in mapping water bodies using ASTER satellite data. *Ecological Informatics* 5: 73-78.
12. * Konrad, S.K., **S.N. Miller**, and W.K. Reeves, 2010. Spatial Analysis of Rift Valley Fever Risk in the Continental United States. *Geojournal: Online First*: DOI 10.1007/s10708-010-9338-x
13. * Baigas, P.E., R. A. Olson, R. M. Nielson, S. N. Miller, and F. G. Lindzey, 2010. Modeling seasonal distribution and spatial range capacity approximations of moose in southeastern Wyoming. *Alces* 46: 89-112
14. * Konrad, S., **S.N. Miller**, W. Reeves, and N. Tietze, 2009. Spatially Explicit West Nile Virus Risk Modeling in Santa Clara County, CA. *Vector-Borne and Zoonotic Diseases* 9(3): 267-274. DOI 10.1089/vbz.20080084
15. * Okoth, O.E., M. Muchiri, W.A. Shivoga, **S.N. Miller**, J. Rasowo, and C.C. Ngugi, 2009. Spatial and seasonal variations in phytoplankton community structure in alkaline-saline Lake Nakuru, Kenya. *Lakes & Reservoirs: Research and Management* 2009 14: 57–69.
16. Sivanpillai, R., and **S.N. Miller**, 2008. Benefits of pan-sharpened Landsat imagery for mapping small water bodies in the Powder River Basin, Wyoming, USA. *Lakes & Reservoirs: Research and Management* 2008 13: 69–76. DOI: 10.1111/j.1440-1770.2007.00356.x
17. Heilman, P., M.H. Nichols, D.C. Goodrich, **S.N. Miller**, and D.P. Guertin, 2008. GIS Database, Walnut Gulch Experimental Watershed, Arizona, USA. *Water Resources Research*. DOI:10.1029/2006WR005777
18. * Kibichii, S., W.A. Shivoga, M. Muchiri, E. Enanga, and **S.N. Miller**, 2008. Seasonality in water quality and its influence on the abundance and distribution of phytoplankton and chironomid larvae in Lake Nakuru, Kenya. *Verh. Internat. Verein. Limnol.* 30(2): 6 pp.
19. * Shivoga, W.A., E.M. Enanga, C. Maina-Gichaba, and **S.N. Miller**, 2008. Sediment Loading into Lake Nakuru wetland, Kenya. *Egerton Journal* (Regional East African peer-review publication).

20. **Miller, S.N.**, D.P. Guertin, and D.C. Goodrich, 2007. Hydrologic modeling uncertainty resulting from land cover misclassification. *Journal of the American Water Resources Association* 43(4):1065-1075. DOI: 10.1111/j.1752-1688.2007.00088.x
21. **Miller, S.N.**, D.J. Semmens, D.C. Goodrich, M. Hernandez, R.C. Miller, W.G. Kepner, and D.P. Guertin, 2007. The Automated Geospatial Watershed Assessment tool. *Environmental Modelling & Software* 22(3):365-377.
22. * Baldyga, T.J., **S.N. Miller**, K.L. Driese, and C. Maina Gichaba, 2007. Land Cover Change Assessment within Kenya's Mau Forest Region Using Remotely Sensed Data. *African Journal of Ecology*. DOI: 10.1111/j.1365-2028.2007.00806.x.
23. * Zou, L., **S.N. Miller**, and E.T. Schmidtman, 2007. A GIS tool to estimate West Nile Virus risk based on a degree-day model. *Environmental Monitoring and Assessment* 129: 413-420. DOI 10.1007/s10661-006-9373-8.
24. M. Tischler, M. Garcia, C. Peters-Lidard, M.S. Moran, **S. Miller**, D. Thoma, S. Kumar, and J. Geiger, 2007. A GIS framework for surface-layer soil moisture estimation combining satellite radar measurements and land surface modeling with soil physical property estimation. *Environmental Modelling & Software* 22(6): 891-898. DOI:10.1016/j.envsoft.2006.05.022.
25. * Shivoga, W.A., M. Muchiri, S. Kibichii, J. Odanga, **S.N. Miller**, T.J. Baldyga, E.M. Enanga, and M.C. Gichaba, 2007. Influences of land use/cover on water quality in the upper and middle reaches of River Njoro, Kenya. *Lakes & Reservoirs: Research and Management* 12: 97–105. DOI: 10.1111/j.1440-1770.2007.00325.x
26. * Kibichii, S., W.A. Shivoga, M. Muchiri, and **S.N. Miller**, 2007. Macroinvertebrate assemblages along a land use gradient in the upper River Njoro watershed of Lake Nakuru Drainage Basin, Kenya. *Lakes & Reservoirs: Research and Management* 12: 107–117. DOI: 10.1111/j.1440-1770.2007.00323.x
27. Rhoton, F.E., W.E. Emmerich, D.C. Goodrich, S.N. Miller, and D.S. McChesney, 2007. An aggregation/erodibility index for soils in a semiarid watershed, southeastern Arizona. *Soil Science Society of America Journal* 71 (3): 984-992.
28. Britch, S.C., K.J. Linthicum, and the Rift Valley Fever Working Group^a, 2007. Developing a Research Agenda and a Comprehensive National Prevention and Response Plan for Rift Valley Fever in the United States. *Emerging Infectious Diseases* 13(8). DOI: 10.3201/EID1308.070551.
 - a. **S.N. Miller** is a member of the Rift Valley Fever Working Group
29. Linthicum, K.J., A. Anyamba, S.C. Britch, J.-P. Chretien, R.L. Erickson, J. Small, C.J. Tucker, K. Bennett, R. Mayer, E. Schmidtman, T. G. Andreadis, J.F. Anderson, W. Wilson, J. Freier, A. James, R. Miller, B. Drolet, **S.N. Miller**, C. Tedrow, C. Bailey, D. Strickman, D.R. Barnard, G.G. Clark, and L. Zou, 2006. A Rift Valley fever risk surveillance system in Africa using remotely sensed data in a GIS: Potential for use on other continents. *Veterinaria Italiana* 43(3): 663-674.
30. Zou, L., **S.N. Miller**, and E.T. Schmidtman, 2006. Mosquito larval habitat mapping using remote sensing and GIS: implications of coalbed methane development and the West Nile virus. *Journal of Medical Entomology* 43(5): 1034 – 1041.
31. Rhoton, F.E., W.E. Emmerich, D.C. Goodrich, **S.N. Miller**, and D.S. McChesney, 2006. Soil geomorphological characteristics of a semiarid watershed: Influence on carbon distribution and transport. *Soil Science Society of America Journal* 70:1532-1540.
32. **Miller, S.N.**, M. Hernandez, R.C. Miller, D.C. Goodrich, W.G. Kepner, D.L. Heggem, M.L. Mehaffey, F. Kim Devonald, P. Miller, 2002. Integrating landscape assessment and hydrologic modeling in land cover change analysis. *Journal of American Water Resources Association*. *Journal of the American Water Resources Association* 38(4): 1-15. DOI: 10.1111/j.1752-1688.2002.tb05534.x

33. Hernandez, M., **S.N. Miller**, D.C. Goodrich, B.F. Goff, W.G. Kepner, C.M. Edmonds, and K.B. Jones, 2000. Modeling runoff response to land cover and rainfall spatial variability in semi-arid watersheds. *Journal of Environmental Monitoring and Assessment* 64: 285-298.
34. Goodrich, D.C., M. Hernandez, **S.N. Miller**, B. Goff, W.G. Kepner, B. Jones, C. Edmonds, T. Wade, D. Ebert, D. Heggem, 2000. Landscape Indicator Interface with Hydrologic Models. US-EPA Publication EPA/600/R-00/042.
35. Heilman, P., A. Melgoza Castillo, R. Mann, A. Chavez Silva, M. Weltz, J. Stone, **S. Miller**, S. Barker, and D. Fox, 2000. A framework for cooperation across the U.S./Mexico border. *Rangelands* 22(3): 15-20.
36. Goodrich, D.C., L.J. Lane, D.A. Woolhiser, R. Shillito, **S.N. Miller**, and K.H. Syed, 1997. Linearity of basin response as a function of scale in a semi-arid ephemeral watershed. *Water Resources Research* 33(12): 2951-2965.

Book Chapters

1. Sivanpillai, R., and **S.N. Miller**, 2012. Remote Sensing Maps Co-Produced Water from Natural Gas Extraction. Chapter 19 *In* The Use of Remote Sensing on Natural Resource Extraction. American Petroleum Institute.
2. Semmens, D.J., D.C. Goodrich, C.L. Unkrich, R.E. Smith, D.A. Woolhiser, and **S.N. Miller**, 2008. KINEROS2 and the AGWA modeling framework. Chapter 5 *in* Hydrological Modelling in Arid and Semi-Arid Areas (H. Wheeler, S. Sorooshian, and K.D. Sharma, Eds.). Cambridge University Press, London. Pp. 49-69.
3. M. Hernandez, D.J. Semmens, **S.N. Miller**, D.C. Goodrich, and W.G. Kepner, 2005. Development and Application of the Automated Geospatial Watershed Assessment Tool. Chapter 9 *In* Modeling and Remote Sensing Applied to Agriculture (U.S. and Mexico) (C.W. Richardson, A.D. Baez-Gomez, and M. Tiscareno-Lopez, Eds). USDA-ARS, Inifap, Washington, DC. Pp. 127-158.
4. **Miller, S.N.**, 2004. Successfully managing multiple uses of water: Practical aspects and case studies. Chapter II *In*: Risk Assessment as a Tool for Water Resources Decision-Making in Central Asia (Teaf, C.M., B.K. Yessekin, and M.K. Khankhasayev, Eds). Kluwer Academics, The Netherlands, pp 113-131.
5. Moran, M.S., S.J. Maas, V.C. Vanderbilt, E.M. Barnes, **S.N. Miller**, and T.R. Clarke, 2004. Application of image-based remote sensing to irrigated agriculture. Chapter 12 *In*: Remote Sensing for Natural Resource Management and Environmental Monitoring: Manual of Remote Sensing, 3rd Edition, Vol. 4 (S.L. Ustin, Ed.). John Wiley & Sons, Hoboken, New Jersey, pp. 617-677.
6. Goodrich, D.C., Williams, D.G., Unkrich, C.L., Hogan, J.F., Scott, R.L., Hultine, K.R., Pool, D., Coes, A.L., **Miller, S.** 2004. Comparison of methods to estimate ephemeral channel recharge, Walnut Gulch, San Pedro River Basin, Arizona. In: Groundwater Recharge in a Desert Environment: The Southwestern United States, J.F. Hogan, F.M. Phillips and B.R. Scanlon (eds.), Water Science and Applications Series, Vol. 9, American Geophysical Union, Washington, DC, pp. 77-99.
7. **Miller, S.N.**, D.P. Guertin, and D.C. Goodrich, 2003. Deriving stream channel morphology using GIS-based watershed analysis. Chapter 5 *in*: GIS for Water Resources and Watershed Management, (J.G. Lyon, Ed.). Taylor and Francis, New York, pp. 53-61.

Refereed Proceedings

1. Goodrich, D.C., Unkrich, C.L., Smith, R.E., Guertin, D.P., Hernandez, M., Burns, I.S., Massart, J., Levick, L., **Miller, S.N.**, Semmens, D., Kepner, W. 2010. THE AGWA – KINEROS2 SUITE OF MODELING TOOLS. Proc. Amer. Soc. Of Civil Eng. 2010 Watershed Management Conference, Madison, WI, Aug. 23-27, 2010. Modeling, pp. 1294-1305.
2. * Baldyga, T.J., **S.N. Miller**, W.A. Shivoga, L.W. Chiuri, G. Paige, 2008. Development and use of a multiple objective spatial decision support system in East African rural watershed management. Proceedings of the 2008 AWRA Spring Specialty Conference: GIS and Water Resources V. March 17-19, 2008, San Mateo, CA.
3. * **Miller, S.N.**, H.R. Griscom, R. Sivanpillai, and L. Zou, 2007. Identifying mosquito larvae habitat created by CBNG discharge waters using remote sensing. Proceedings of the Annual Meeting of the ASMR 2007: 30 Years of SMCRA and Beyond, June 2-7, 2007, Gillette, WY. CD-ROM Publication pp. 514-519.
4. * S.R. Shrestha, **S.N. Miller**, and D. Gabriels, 2006. Soil erosion assessment in middle mountains of Nepal using a GIS-based model. Proceedings of Geographic Information Systems (GIS) and Water Resources IV, Houston, Texas, May 8-10, 2006
5. * Baldyga, T.J., **S.N. Miller**, K.L. Driese, and C. Maina-Gichaba, 2005. Using Landsat Imagery to Analyze Land Cover Change in the Njoro Watershed, Kenya. XX International Grasslands Congress, University College Dublin, Ireland June 26 – July 1, 2005.
6. * Shivoga, W. A., M. Muchiri, S. Kibichi, J. Odanga, **S.N. Miller**, and T.J. Baldyga, 2005. Upstream land uses and riparian zones contribution to downstream nutrient concentrations in River Njoro, Kenya. XX International Grasslands Congress, University College Dublin, Ireland June 26 – July 1, 2005.
7. Chiuri, L.W., F.K. Lelo, M.W. Jenkins, and **S.N. Miller**, 2005. Development of a Toolkit for Participatory Management of Rural Watersheds in Kenya. XX International Grasslands Congress, University College Dublin, Ireland June 26 – July 1, 2005.
8. Onyando, J.E., M.O. Okelo C.M. Gichaba, W.A. Shivoga, and **S.N. Miller**, 2005. Micro-field assessment of soil erosion and surface runoff using mini rainfall simulator in upper River Njoro watershed in Kenya. XX International Grasslands Congress, University College Dublin, Ireland June 26 – July 1, 2005.
9. **Miller, S.N.**, D.J. Semmens, R.C. Miller, M. Hernandez, D.C. Goodrich, W.P. Miller, W.G. Kepner, D. Ebert, 2002. GIS-based hydrologic modeling: the automated geospatial watershed assessment tool. Proceedings of the Second Federal Interagency Hydrologic Modeling Conference, July 28 - August 1, 2002, Las Vegas, Nevada.
10. Guertin, D.P., Fiedler, R.H., **S.N. Miller**, and D.C. Goodrich, 2000. Fuzzy logic for watershed assessment. Proceedings of the ASCE Conference on Science and Technology for the New Millennium: Watershed Management 2000, Fort Collins, CO, June 21-24, 2000.
11. **Miller, S.N.**, D.P. Guertin, and L.R. Levick, 1999. Influence of map scale on drainage network representation. Hydrology and Water Resources in Arizona and the Southwest, Vol. 29: Proceedings of the 1999 Arizona-Nevada Academy of Science Annual Conference, Hydrology Section, April 17, 1999, Northern Arizona University, Flagstaff, Arizona, pp. 7-15.
12. **Miller, S.N.**, D.P. Guertin, and D.C. Goodrich, 1999. Using high-resolution synthetic aperture radar for terrain mapping: influences on hydrologic and geomorphic investigation. Proceedings of the AWRA Annual Summer Specialty Conference on Wildland Hydrology, Bozeman, MT, June 30-July 2, 1999, pp. 219-226.

13. **Miller, S.N.**, J.J. Stone, J.G. Martinez, and D.P. Guertin, 1999. Influences of geographical information system watershed characterization for hydrologic modeling. Proceedings of the AWRA Annual Summer Specialty Conference on Wildland Hydrology, Bozeman, MT, June 30-July 2, 1999, pp. 503-507.
14. Hernandez, M., **S.N. Miller**, D.C. Goodrich, and B.F. Goff, 1999. Modeling hydrologic response to landscape change in semi-arid regions. Proceedings of the EMAP Symposium on Western U.S. Ecological Systems: Status, Issues and New Approaches, San Francisco, CA, April 6-8, 1999.
15. **Miller, S.N.**, M. Hernandez, and L.J. Lane, 1997. GIS applications in the spatial extrapolation of hydrologic data from experimental watersheds. Proceedings of the Conference on Management of Landscapes Disturbed by Channel Incision: Stabilization; Rehabilitation; Restoration, May 19-22, 1997, Oxford, MS.
16. **Miller, S.N.**, D.P. Guertin, and D.C. Goodrich, 1996. Linking GIS and geomorphology field research at Walnut Gulch. Proceedings of the AWRA's 32nd Annual Conference and Symposium: "GIS and Water Resources", Sept. 22-26, 1996, Ft. Lauderdale, FL.

Non-refereed Proceedings

1. * Baker, T.J., **S.N. Miller**, and G.B. Paige, 2009. The Spatial Environmental and Agricultural Decision Support System (SEADS). Proceedings of the SUMAWA Mau Forest Complex Conference, Njoro, Kenya, April 27-29, 2009 pp. 71-75
2. * Chitty, C., and **S.N. Miller**, 2009. Community Level 3-Dimensional Mapping and Gender-Based Analysis in the Njoro Watershed. Proceedings of the SUMAWA Mau Forest Complex Conference, Njoro, Kenya, April 27-29, 2009 pp. 75-80.
3. D.P. Guertin, D.C. Goodrich, W.G. Kepner, D.J. Semmens, M. Hernandez, S. Burns, A. Cate, L. Levick, and **S.N. Miller**, 2008. Automated Geospatial Watershed Assessment (AGWA)—A GIS-Based Hydrologic Modeling Tool for Watershed Assessment and Analysis. *In*: Norman, L.M., Hirsch, D.D., Ward, A.W., 2008, Proceedings of a USGS Workshop on Facing Tomorrow's Challenges along the U.S.-Mexico Border—Monitoring, Modeling, and Forecasting Change Within the Arizona-Sonora Transboundary Watersheds U.S. Geological Survey Circular 1322, pp. 49-50.
4. * Baldyga, T.J., **S.N. Miller**, W.A. Shivoga, F. Lelo, M.W. Jenkins, G. Paige, and S. Mooney, 2007. Development of a participatory spatial decision support system for East African rural planning. Paper and oral presentation at AfricaGIS 2007, Ouagadougou, Burkina Faso, September 17-21, 2007.
5. * Baldyga, T.J., **S.N. Miller**, W.A. Shivoga, F. Lelo, M.W. Jenkins, G. Paige, and S. Mooney, 2007. Rural Planning in East Africa Using a Participatory Spatial Decision Support System. Proceedings of the ESRI Eastern Africa User Conference, 13 – 14 September 2007, Kampala – Uganda.
6. * Kibichii, S., W.A. Shivoga, M. Muchiri, and **S.N. Miller**, 2006. Physico-chemical Characteristics of Streams Draining into Lake Nakuru in relation to their Watershed Landuse. Proceedings of the 11th International Conference on the Conservation and Management of Lakes, 31 October to 4 November 2005, Nairobi, Kenya. Volume II: 411-426
7. * Maina-Gichaba, C., W. A. Shivoga, E. M. Enanga, S. Kibichii and **S.N. Miller**, 2006. Sediment Loading on Inland Lakes/Wetlands: A Case Study of Lake Nakuru, Kenya. Proceedings of the 11th International Conference on the Conservation and Management of Lakes, 31 October to 4 November 2005, Nairobi, Kenya. Volume II: 389-392.
8. * Milkah, F.N., W. A. Shivoga, Mucai Muchiri and **S.N. Miller**, 2006. Effects of Land Use Changes on Birds Composition along River Njoro: A Watershed of Lake Nakuru. Proceedings of the 11th International Conference on the Conservation and Management of Lakes, 31 October to 4 November 2005, Nairobi, Kenya. Volume II: 540-544.

9. * Okelo, M.O., J.O. Onyando, W.A. Shivoga and **S.N. Miller**, 2006. Analysis of Surface Runoff and Soil Loss under different Land Use Types in River Njoro Watershed Using a mini Rainfall Simulator. Proceedings of the 11th International Conference on the Conservation and Management of Lakes, 31 October to 4 November 2005, Nairobi, Kenya. Volume II: 446-450.
10. * Shivoga, W.A., M. Muchiri, S. Kibichi, J.Odanga, **S.N. Miller**, T.J. Baldyga, C. Maina Gichaba, 2006. Impacts of upland land use on downstream water quality in River Njoro Watershed, Kenya. Proceedings of the 11th International Conference on the Conservation and Management of Lakes, 31 October to 4 November 2005, Nairobi, Kenya. Volume II: 472-476.
11. * Jenkins, M.W., G.F. Marques, F.K. Lelo, and **S.N. Miller**, 2005. WEAP as a participatory tool for shared vision planning in the River Njoro Watershed in Kenya. *Proceedings of the World Water and Environmental Resources Congress 2005: Impacts of Global Climate Change*. Anchorage, AK, May 15-19, 2005.
12. D.C. Goodrich, H.E. Canfield, I.S. Burns, D.J. Semmens, **S.N. Miller**, M. Hernandez, L.R. Levick, D.P. Guertin, and W.G. Kepner, 2005. Rapid Post-Fire Hydrologic Watershed Assessment using the AGWA GIS-based Hydrologic Modeling Tool. Proceedings of the ASCE Watershed Conference: Managing Watersheds for Human and Natural Impacts: Engineering, Ecological, and Economic Challenges. July 19-22, 2005, Williamsport, VA.
13. * Baldyga, T.J., **S.N. Miller**, K.L. Driese, R. Sivanpillai, and C. Maina Gichaba, 2005. Enhanced land cover classification in a tropical Kenya landscape. Proceedings of Pecora 16: "Global Priorities in land Remote Sensing". October 23-27, 2005, Sioux Falls, SD.
14. **Miller, S.N.**, D.P. Guertin, and D.C. Goodrich, 2004. Assessing uncertainty in hydrologic modeling resulting from remote sensing misclassification. *Proceedings of the 2004 American Society for Photogrammetry & Remote Sensing Annual Conference*, Denver, CO, May 23-28, 2004.
15. * **Miller, S.N.**, S.R. Shrestha, 2004. Semi-automated extraction and validation of channel morphology from LIDAR and IFSAR terrain data. *Proceedings of the 2004 American Society for Photogrammetry & Remote Sensing Annual Conference*, Denver, CO, May 23-28, 2004.
16. Jenkins, M.W., F.K. Lelo, L.W. Chiuri, W.A. Shivoga, and **S.N. Miller**, 2004. Community Perceptions and Priorities for Managing Water and Environmental Resources in the River Njoro Watershed in Kenya. World Water and Environmental Resources Congress 2004: Critical Transitions in Water & Environmental Resources Management: Understanding the Past - Shaping the Future!, Salt Lake City, UT, June 27-July 1, 2004
17. * Baldyga, T.J., **S.N. Miller**, W.A. Shivoga, and C. Maina-Gichaba, 2004. Assessing the impact of land cover change in Kenya using remote sensing and hydrologic modeling. *Proceedings of the 2004 American Society for Photogrammetry & Remote Sensing Annual Conference*, Denver, CO, May 23-28, 2004.
18. * Shrestha, S.R., M.B. Karkee, C.H. Cuadra, J.C. Tokeshi, and **S.N. Miller**, 2004. Preliminary Study for Evaluation of Earthquake Risk to the Historical Structures in Kathmandu Valley (Nepal). *Proceedings of the 13th World Conference on Earthquake Engineering*, Vancouver, BC, Canada, April 1-6, 2004.
19. **Miller, S.N.**, 2003. Estimating channel morphologic properties from a high resolution DEM. *In: Renard, K.G., McElroy, S.A., Gburek, W.J., Canfield, H.E., and Scott, R.L., eds. Proceedings of the First Interagency Conference on Research in the Watersheds*, Benson, AZ, October 27-30, 2003.
20. Hernandez, M., W.G. Kepner, D.J. Semmens, D.W. Ebert, D.C. Goodrich, and **S.N. Miller**, 2003. Integrating a landscape/hydrologic analysis for watershed assessment. *In: Renard, K.G., McElroy, S.A., Gburek, W.J., Canfield, H.E., and Scott, R.L., eds. Proceedings of the First Interagency Conference on Research in the Watersheds*, Benson, AZ, October 27-30, 2003.

21. Fox, D.H., and **S.N. Miller**, 2003. Walnut Gulch Experimental Watershed database support. *In: Renard, K.G., McElroy, S.A., Gburek, W.J., Canfield, H.E., and Scott, R.L., eds. Proceedings of the First Interagency Conference on Research in the Watersheds*, Benson, AZ, October 27-30, 2003.
22. Rhoton, F.E., W.E. Emmerich, D.C. Goodrich, D.S. McChesney, and **S.N. Miller**, 2003. Soil contributions to sediment properties in Walnut Gulch Experimental Watershed: influence of slope factors. *In: Renard, K.G., McElroy, S.A., Gburek, W.J., Canfield, H.E., and Scott, R.L., eds. Proceedings of the First Interagency Conference on Research in the Watersheds*, Benson, AZ, October 27-30, 2003.
23. Semmens, D.J., **S.N. Miller**, M. Hernandez, D.C. Goodrich, and R.C. Miller, 2001. Effects of model complexity on computed watershed runoff and erosion: an application of the new Automated Geospatial Watershed Assessment Tool. *Proceedings of the Arizona Hydrological Society Annual Symposium*. September 12-15, 2001, Tucson, AZ.
24. **Miller, S.N.**, W.G. Kepner, M.H. Mehaffey M. Hernandez, R.C. Miller, D.C. Goodrich, F. Kim Devonald, D.T. Heggem, and P. Miller, 2001. Landscape approach to watershed assessment and management: San Pedro and Catskill/Delaware Studies. *Proceedings of the Integrated Decision Making for Watershed Management Symposium: Processes and Tools*. January 7-9, 2001, Chevy Chase, MD.
25. **Miller, S.N.**, A. Youberg, D.P. Guertin, and D.C. Goodrich, 2000. Channel Morphology Investigations Using Geographic Information Systems and Field Research. *USDA Forest Service Proceedings RMRS-P-13: Proceedings of the Conference on Land Stewardship in the 21st Century: The Contributions of Watershed Management*, March 13-16, 2000, Tucson, AZ, pp. 415-419.
26. Guertin, D.P., **S.N. Miller**, and D.C. Goodrich, 2000. Emerging tools and technologies in watershed management. *USDA Forest Service Proceedings RMRS-P-13: Proceedings of the Conference on Land Stewardship in the 21st Century: The Contributions of Watershed Management*, March 13-16, 2000, Tucson, AZ, pp. 194-204.
27. Hernandez, M., and **S.N. Miller**, 2000. Integrated landscape/hydrologic modeling tool for semiarid watersheds. *USDA Forest Service Proceedings RMRS-P-13: Proceedings of the Conference on Land Stewardship in the 21st Century: The Contributions of Watershed Management*, March 13-16, 2000, Tucson, AZ, pp. 320-324.
28. **Miller, S.N.**, and D.P. Guertin, 1999. Teaching Spatial Analysis for Hydrology and Watershed Management. *Proceedings of the 19th Annual ESRI User Conference*, San Diego, July 26-30, 1999.
29. Heller, J., D.P. Guertin, **S.N. Miller**, and J.J. Stone, 1999. GIS for watershed assessment: integrating spatial and tabular data to derive parameters for a hydrologic simulation model (ARDBSN). *Proceedings of the 19th Annual ESRI User Conference*, San Diego, July 26-30, 1999.
30. **Miller, S.N.**, D.P. Guertin, and D.C. Goodrich, 1996. Investigating stream channel morphology using a geographic information system. *16th Annual ESRI User Conference Proceedings*, May 20-24, 1996, Palm Springs, CA.

Abstracts, Presentations, and Poster Sessions

~ denotes invited speaker

1. Ogden, F.L., W. Lai, C. Douglas, **S.N. Miller**, Y. Zhang, R.C. Steinke, 2012. CI-WATER HPC Model: Cyberinfrastructure to Advance High Performance Water Resources Modeling in the Intermountain Western U.S. Poster presentation to 2012 AGU Fall Meeting, San Francisco, CA, Dec 3-7, 2012.
2. * Hayes, M.H., **S.N. Miller**, and P. Caffrey, 2012. High Resolution Landcover Classification using National Agriculture Imagery Program Data and Random Forests. Abstract and poster presentation to 2012 Meeting of The Wildlife Society – Wyoming Chapter, Laramie, WY, Nov. 13-15, 2012.

3. * Hayes, M.H., **S.N. Miller**, and P. Caffrey, 2012. Alterations to riparian vegetation associated with beaver ponds: Pole Mountain Recreation Area, SE Wyoming. Abstract and oral presentation to 2012 Meeting of The Wildlife Society – Wyoming Chapter, Laramie, WY, Nov. 13-15, 2012.
4. ~ Holbrook, W.S, and **S.N. Miller**, 2012. Water in a Changing West: Wyoming Center for Environmental Hydrology and Geophysics. Oral presentation to Ecosystem Science and Management Research Across Disciplines Seminar, Laramie, WY, Oct. 12, 2012.
5. Ogden, F.L., C. Douglas, **S.N. Miller**, 2012. Petascale Hydrologic Modeling: Needs & Challenges. Abstract and oral presentation to CUAHSI 3rd Biennial Colloquium on Hydrologic Science and Engineering, Boulder, CO, July 16-18, 2012
6. * **Miller, S.N.**, A. Klatt, and G. Paige, 2012. Water in a Changing West. Oral presentation to 2012 WWA Stakeholder Meeting, Boulder, CO, Oct. 2, 2012.
7. Ogden, F.L., C.C. Douglas, **S.N. Miller**, 2012. Petascale Hydrologic Modeling: Needs & Challenges. Abstract and oral presentation to AGU Hydrology Days, Logan, UT, March 21-23, 2012.
8. ~Ogden, F.L., C. Douglas, and **S.N. Miller**, 2012. Petascale Hydrologic Modeling - Needs and Challenges. Oral presentation to 2012 Spring Runoff Conference: Multidisciplinary water science: linking social, physical, computational and ecological approaches to sustainable water resources. Utah State University, Logan, UT, April 3-4, 2012.
9. **Miller, S.N.**, P. A. Caffrey, and M. Berendsen, 2011. Spatially explicit predictive hydrologic modeling in advance of oil and gas development. Oral presentation and abstract to AWRA's 2012 Spring Specialty Conference Geographic Information Systems (GIS) and Water Resources VII, New Orleans, LA, March 26-28, 2012.
10. * Hayes, M., **S.N. Miller**, and P. Caffrey, 2011. Relationships among beavers, ecology and geomorphology in southeastern Wyoming. Oral presentation and abstract to AWRA's 2012 Spring Specialty Conference Geographic Information Systems (GIS) and Water Resources VII, New Orleans, LA, March 26-28, 2012.
11. * Chitrakar, S., **S.N. Miller**, P.A. Caffrey, and J.R. Stern, 2011. Modeling salt mobilization and movement in areas affected by oil and gas development. Oral presentation and abstract to AWRA's 2012 Spring Specialty Conference Geographic Information Systems (GIS) and Water Resources VII, New Orleans, LA, March 26-28, 2012.
12. Guertin, D.P., D.C. Goodrich, S. Burns, L. Levick, M. Hernandez, W. Kepner, **S.N. Miller**, D.J. Semmens, and C. Unkrich, 2011. Automated geospatial watershed assessment tool (AGWA): A GIS-based hydrologic modeling tool for watershed assessment and analysis. Oral presentation and abstract to AWRA's 2012 Spring Specialty Conference Geographic Information Systems (GIS) and Water Resources VII, New Orleans, LA, March 26-28, 2012.
13. Caffrey, P., M. Berendsen, and **S.N. Miller**, 2011. Hydrologic Modeling Toolkit for Mitigating the Impacts of Energy Build Out in Semiarid Wyoming. Oral presentation and abstract to AWRA's 2012 Spring Specialty Conference Geographic Information Systems (GIS) and Water Resources VII, New Orleans, LA, March 26-28, 2012.
14. Guertin, D.P., D.C. Goodrich, I.S. Burns, L. Levick, M. Hernandez, W. Kepner, S.N. Miller, D.J. Semmens, C. Unkrich, 2011. Automated Geospatial Watershed Assessment Tool (AGWA): A GIS-based hydrologic modeling tool for watershed assessment and analysis. Poster presentation at AWRA's 2012 Spring Specialty Conference Geographic Information Systems (GIS) and Water Resources VII, New Orleans, LA, March 26-28, 2012.
15. ~ **Miller, S.N.**, 2011. Sustainable development and linked impacts in ecology and human health. Invited guest lecturer in AGRI 1010: Critter and Communities, Oct. 25, 2011.

16. ~ Konrad, S.K., and **S.N. Miller**, 2011. The Hot Zone: Predicting where and when Rift Valley Fever virus will reach the US. Invited presentation to the WyGISc Geospatial Forum, October 7th, 2011, Laramie, WY.
17. * **Miller**, S.N., G.B. Paige, A. Perlinski, and J. Vithanage, 2011. Crow Creek Watershed: Instrumentation for short- and long-term hydrologic studies. Abstract and oral presentation to the 4th Interagency Conference on Research in the watersheds: Observing, Studying and managing for Change, Sept. 26-30, 2011, Fairbanks, AK
18. * **Miller, S.N.**, K. Anderson, S. Chitrakar, S.K. Konrad, P. Caffrey and G.B. Paige, 2011. Monitoring and modeling hydrologic and water quality responses to disturbance resulting from natural gas development in Muddy Creek, WY. Abstract and oral presentation to the 4th Interagency Conference on Research in the watersheds: Observing, Studying and managing for Change, Sept. 26-30, 2011, Fairbanks, AK
19. * A.N. Swallow, G. B. Paige, **S.N. Miller**, and W.S. Irwin, 2011. Quantifying Hydrologic Impacts of Vegetation Treatments in the Bates Creek Watersheds. Abstract and oral presentation to the 4th Interagency Conference on Research in the watersheds: Observing, Studying and managing for Change, Sept. 26-30, 2011, Fairbanks, AK
20. * Jessup, B.S., W.J. Hahm, **S.N. Miller**, J.W. Kirchner, C. S. Riebe. 2011. Landscape Response to Tipping Points in Granite Weathering: Exploring the Stepped Topography of the Southern Sierra Critical Zone Observatory .Abstract and oral presentation to the 9th International Symposium on Geochemistry of the Earth's Surface (GES-9), June 3-7, 2011, Boulder, CO.
21. ~ **Miller, S.N.**, 2011. Future Water Resources in the Colorado River. Invited guest lecture in ENR 4890: Western Water Issues, Feb 22, 2011.
22. * Jessup, B.S., **S.N. Miller**, J.W. Kirchner, and C.S. Riebe, 2010. Erosion, Weathering and Stepped Topography in the Sierra Nevada, California; Quantifying the Dynamics of Hybrid (Soil-Bedrock) Landscapes. Abstract and poster presentation at American Geophysical Union 2010 Fall Meeting, San Francisco, CA, 13–17 December 2010
23. * **Miller, S.N.**, and T.J. Baker, 2010. Investigating the Role of Land Cover Change on the Hydrology of the River Njoro Watershed. Abstract and Oral Presentation: AWRA 2010 Annual Water Resources Conference. Philadelphia, PA, November 1-4, 2010.
24. * Vithanage, J., R. Geerken, P.S. Thankabail, **S.N. Miller**, C.M. Birader, A. Platinov, M. Herath, 2010. Mapping Irrigated Areas for Environmental Modeling with Discrete Fourier Transformation of MODIS Time Series Data. Abstract and Poster Presentation: AWRA 2010 Annual Water Resources Conference. Philadelphia, PA, November 1-4, 2010.
25. * Paige, G.B., A. Perlinski, **S.N. Miller**, J. Vithanage, 2010. Methods to Parameterize a Hydrologic Simulation Model in a Geospatial Rangeland Watershed Assessment Tool using Ecological Sites. Abstract and Oral Presentation: AWRA 2010 Annual Water Resources Conference. Philadelphia, PA, November 1-4, 2010.
26. * Beough, C., G.B. Paige, **S.N. Miller**, C. Legleiter, S. Jones, 2010. E. coli Distribution & Streambed Processes of the Greybull River. Abstract and Oral Presentation: AWRA 2010 Annual Water Resources Conference. Philadelphia, PA, November 1-4, 2010.
27. **Miller, S.N.** and M.H. Benson, 2010. Assessment of Coalbed Natural Gas Active Well Migration in Wyoming's Powder River Basin: Implications for Adaptive Management. Abstract and oral presentation at the 2010 Energy Resources Produced Water Conference, Laramie, WY May 25-26, 2010.
28. Sivanpillai, R., and **S.N. Miller**, 2010. Mapping Small Water Bodies in the Powder River Basin using Satellite Images. Abstract and oral presentation at the 2010 Energy Resources Produced Water Conference, Laramie, WY May 25-26, 2010.

29. * Perlinski, A., G.B. Paige, J.J. Stone, **S.N. Miller**, J. Vithanage, 2010. Using ecological sites to parameterize a hydrologic simulation model in geospatial rangeland watershed assessment tool. Abstract and oral presentation at the 2010 AWRA Spring Specialty Conference: GIS in Water Resources. Orlando, FL March 29-31, 2010.
30. * Bigelow, P., W.A. Hubert, **S.N. Miller**, and R.E. Gresswell, 2010. A conceptual model for predicting areas with high potential for lake trout spawning habitat in Yellowstone Lake. Abstract and oral presentation at the Montana Chapter Of The American Fisheries Society 2010 Meeting, Bozeman, MT Feb 8-12, 2010.
31. Guertin, D.P. G.B. Paige, D. Goodrich, M. Nearing, **S.N. Miller**, P. Heilman, G. Ruyle, J. Stone, I. Burns, M. Hernandez, M. McClaran. 2010. Automated Geospatial Watershed Assessment Tool for Rangelands. Society for Range Management Annual Meeting Feb. 7-11. Denver Co.
32. Konrad, S., and **S.N. Miller**, 2010. Turning up the Heat: Mosquitoes, Viruses, Cows & People. Research Across Disciplines Seminar, Laramie, WY, Sept. 22, 2010.
33. ~ **Miller, S.N.**, 2010. Integrated Problems: Land Cover Change, Human Health and Ecological Effects in Kenya. Invited guest lecturer in AGRI 1010: Critter and Communities, Nov. 2, 2010.
34. ~ **Miller, S.N.**, P. Caffrey, and M. Berendsen, 2010. GIS and Modeling Tools for Evaluating Impacts of CBM Development in Wyoming. 2-day Training Session to BLM field staff at Rawlins F.O., April 20-22, 2010.
35. * Vithanage, J., S.N. Miller, A. Perlinski, and G.B Paige, 2009. Land Cover Characterization of Remotely Sensed Data using Fourier Algorithms for Hydrologic Modeling. Oral presentation at GIS in the Rockies conference, Loveland, CO, Sept. 25-28, 2009.
36. * Bigelow, P.E., **S.N. Miller**, and W.A. Hubert, 2009. Predicting areas of lake trout spawning habitat within Yellowstone Lake, Wyoming. Oral presentation at GIS in the Rockies conference, Loveland, CO, Sept. 25-28, 2009.
37. ~ (Keynote address) **Miller, S.N.**, 2009. Together We Will Restore the Mau Complex Forest: Conference Opening. Oral presentation at the SUMAWA Mau Forest Complex Conference, Njoro, Kenya, April 27-29, 2009
38. ~* Baker, T.J., **S.N. Miller**, and G.B Paige, 2009. The Spatial Environmental and Agricultural Decision Support System (SEADS). Oral presentation at the SUMAWA Mau Forest Complex Conference, Njoro, Kenya, April 27-29, 2009.
39. * Chitty, C., and **S.N. Miller**, 2009. Community Level 3-Dimensional Mapping and Gender-Based Analysis in the Njoro Watershed. Oral presentation at the SUMAWA Mau Forest Complex Conference, Njoro, Kenya, April 27-29, 2009.
40. * Hockett, S., D. Layne Coppock, and **S. N. Miller**, 2009. Evaluating Constraints to Adoption: Small Small-hold Farm Soil and Water Conservation Practice in River Njoro, Kenya. Oral presentation at the SUMAWA Mau Forest Complex Conference, Njoro, Kenya, April 27-29, 2009
41. * Vithanage, J.C., A. Perlinski, **S.N. Miller**, and G.B. Paige, 2009. Land cover characterization of remotely sensed data using Fourier algorithms for hydrologic modeling of ungaged basins. Poster presentation to the 1st Forest and Plains Research Symposium: Building collaboration between researchers and forest and grassland scientists and managers through increased sharing of research findings. Laramie, WY, March 10, 2009.

42. * Perlinski, A.T., J. Vithanage, G.B. Paige, and **S.N. Miller**, 2009. Utilization of the Automated Geospatial Watershed Assessment Tool to Estimate Runoff and Sediment Yield from a Small Watershed in Southeastern Wyoming. Oral presentation to the 1st Forest and Plains Research Symposium: Building collaboration between researchers and forest and grassland scientists and managers through increased sharing of research findings. Laramie, WY, March 10, 2009.
43. ~ **Miller, S.N.**, Hydrologic modeling in GIS. Invited speaker to BOT 5710 (Digital Image Processing for Natural Resource Management). Laramie, WY, March 9, 2009.
44. ~ **Miller, S.N.**, 2009. LiDAR in Hydrology: Improving Accuracy or Just Cost? Invited speaker to the Colorado State University Water Center Interdisciplinary Water Resources Seminar. Fort Collins, CO, March 5, 2009.
45. ~ **Miller, S.N.**, 2009. Rapid assessment of stream channel morphology using LiDAR . Invited speaker to BOT 4211 (Advanced Remote Sensing of the Environment). Laramie, WY Feb. 26, 2009.
46. * Paige, G.B., **S.N. Miller**, A. Perlinski, J. Vithanage, D.P. Guertin, D. Goodrich, M. Nearing, P. Heilman, J. Stone, and G. Ruyle, 2009. Rangeland Automated Geospatial Watershed Assessment Tool. Poster presentation to 2009 USDA-CSREES National Water Conference, St. Louis, MS, USA, Feb. 8, 2009.
47. G.B. Paige, **S.N. Miller**, T.J. Kelleners, and S.T. Gray. 2008. Hydrologic Instrumentation and Data Collection in Wyoming. Abstract and Poster Presentation at the Third Interagency Conference on Research in the Watersheds. Planning for an Uncertain Future: Monitoring, Integration, and Adaptation. Estes Park, Colorado September 8 - 11, 2008.
48. * **Miller, S.N.**, T.B. Wyckoff, and E. Bishop, 2008. Spatial and temporal analyses of coalbed natural gas and co-produced water in the Powder River Basin, Wyoming. Oral presentation and abstract Published in Proceedings of the AWRA 2008 Spring Specialty Conference: GIS in Water Resources, San Mateo, CA, March 17-19, 2008.
49. **Miller, S.N.**, and R. Sivanpillai, 2008. Identification of coalbed natural gas discharge reservoirs with ASTER data and GIS in Powder River Basin, Wyoming. Abstract and Poster Presentation Published in Proceedings of the AWRA 2008 Spring Specialty Conference: GIS in Water Resources, San Mateo, CA, March 17-19, 2008.
50. * Paige, G.B., **S.N. Miller**, and M. Sharma, 2008. Using high resolution ground based LiDAR to assess affects of digital elevation model resolution and storm size on hydrologic modeling. Abstract and Oral Presentation Published in Proceedings of the AWRA 2008 Spring Specialty Conference: GIS in Water Resources, San Mateo, CA, March 17-19, 2008.
52. * Baldyga, T.J, **S.N. Miller**, W.A. Shivoga, L.W. Chiuri, G. Paige, 2008. Development and use of a multiple objective spatial decision support system in east African rural watershed management. Oral presentation of the AWRA 2008 Spring Specialty Conference: GIS in Water Resources, San Mateo, CA, March 17-19, 2008. CD-ROM publication; 6 pp.
54. ~* Carrie J. Chitty, **S.N. Miller**, and Wanjiku Chiuri, 2008. Gender based community resource and development mapping on a watershed scale utilizing a 3-dimensional model and geographic information science. Abstract and oral presentation at the 2008 Annual Meeting of the AAG, Boston, MA, April 15-19, 2008.
55. ~ **Miller, S.N.**, 2008. Hydrologic modeling with GIS for watershed assessment. Invited speaker to: Watershed 101. Wyoming Water Quality Monitoring Training, Module I. October 10-14, 2008. Laramie, WY.
56. Konrad, S.K., **S.N. Miller**, W.K. Reeves, and N.S. Tietze. 2008. Spatially Explicit West Nile Virus Risk Modeling in Santa Clara County, CA. 39th Annual meeting of the Society for Vector Ecology (SOVE). Fort Collins, CO. Sept. 28-Oct. 2, 2008.

58. ~* Baldyga, T.J, G. Bundotich, **S.N. Miller**, and J.L. Beck, 2008. Waterbuck (*Kobus ellipsiprymnus defassa*) as an Ecosystem Change Indicator in Lake Nakuru National Park, Kenya. Poster Presentation to 14th Annual Front Range Student Ecology Symposium: "Ecology: A Matter of Scales". Colorado State University, Fort Collins, Colorado, USA *~ C. Chitty, and **S.N. Miller**. 2008. Experiences in GIS-Based Community Mapping. WyGIS Seminar Series, Univ. of Wyoming, WyGIS Geospatial Forum, February 29th, 2008.
61. ~ **S.N. Miller**, 2008. Economic and ecological development in Kenya. Invited lecturer to ECON 4700: Economic Development, Feb. 28, 2008. ~ **S.N. Miller**, 2008. Uncertainty and error in hydrologic modeling with GIS. Invited lecturer to GEOG 4210: Advanced GIS, May 1, 2008.
64. Guertin, D.P., D.C. Goodrich, W.G. Kepner, D.J. Semmens, M. Hernandez, S. Burns, A. Cate, L. Levick, and **S.N. Miller**. 2007 Automated Geospatial Watershed Assessment (AGWA): A Gis-Based Hydrologic Modeling Tool for Watershed Assessment and Analysis. Abstract and Oral Presentation at American Water Resources Association 2007 National Conference, Albuquerque, New Mexico, November 12-15, 2007.
65. ~ **Miller, S.N.**, 2007. Geospatial sciences / technology: A boon or a bane for watershed hydrology? Invited oral presentation to Wyoming GIS Center Geospatial Forum, Oct 5., 2007, Laramie, WY.
66. ~ **Miller, S.N.**, and S. Konrad,. 2007. Degree-day modeling relative to infections in livestock. Invited oral presentation to Interagency Rift Valley Fever Working Group Summer Meeting, Fort Collins, CO, July 31 – August 1, 2007.
67. * Martin, C., **S.N. Miller**, and L. Chiuri, 2007. Split Sex Community Based Mapping Using a 3–Dimensional Model of the River Njoro Watershed. Poster presentation at Society for Conservation GIS, 1st Conservation-GIS Conference, Nairobi, Kenya, July 18-20, 2007.
68. ~**Miller, S.N.**, 2007. Hydrologic Measurements – Snowy Range. Invited presentation to USFS hydrology group, Medicine Bow – Routt National Forest. Saratoga, WY, March 28, 2007.
69. ~ **Miller, S.N.**, 2007. Rapid assessment of stream channel morphology using LiDAR. Invited speaker to University of Wyoming Department of Geology and Geophysics Distinguished Lecturer Series, Spring 2007. Laramie, WY. March 19, 2007.
70. ~ **Miller, S.N.**, 2007. Scientific ethics of GIS and spatial analysis. Invited speaker to Wyoming GIS Center Geospatial Forum, Laramie, WY. March 2, 2007.
71. ~ **Miller, S.N.**, 2007. Multidisciplinary research in Kenya: geospatial modeling, economics, and human health. Invited speaker to AGECE 3860: Economics of World Food and Agriculture, Univ. of Wyoming, Laramie, WY. March 1, 2007.
72. **Miller, S.N.**, and P. Caffrey. The BLM / APD Modeling Toolkit. Presentation to BLM Rawlins Field Office, Rawlins, WY. Feb. 6, 2007.
73. ~ **Miller, S.N.**, 2006. Land Cover Change, Human Health and Ecological Effects: Integrated Research in Kenya and South Africa. Invited speaker to University of Wyoming Geography Department Speaker Series for "Geography Awareness Week" Nov. 14, 2006
74. ~ **Miller, S.N.**, 2006. Uncertainty and environmental modeling in GIS. Invited Speaker to Wyoming GIS Center Geospatial Forum, Laramie, WY. November 10, 2006.
75. ~ **Miller, S.N.**, 2006. Managing Uncertainty in GIS-Based Environmental Modeling. Invited speaker to University of Wyoming Statistics Departmental Seminar Series. Nov. 3, 2006.

76. ~* **Miller, S.N.**, and H.R. Griscom, 2006. Watershed and River Management in Africa: Njoro Watershed, Kenya and the Luvuvhu River, South Africa. Invited speaker to Geography 4080: Management of Major River Basins, Univ. of Wyoming, Laramie, WY, March 28, 2006.
77. * **Miller, S.N.**, T.J. Baldyga, C. Maina Gichaba, 2006. Hydrological modeling in the Njoro watershed, Kenya: assessing the impacts of land cover change on watershed hydrology. Abstract and oral presentation at AWRA Conference on Geographic Information Systems (GIS) and Water Resources IV, Houston, Texas, May 8-10, 2006.
78. ~ **Miller, S.N.**, and P. Caffrey, 2006. APD/NEPA Predictive Modeling Toolkit. Abstract and Invited Speaker at 2006 National Soil, Water, and Air Conference of the US Bureau of Land Management, National Training Center, Phoenix, AZ, Feb. 27 – March 3, 2006.
79. ~ **Miller, S.N.**, and P. Caffrey, 2006. Software Demonstration of the APD/NEPA Predictive Modeling Toolkit. Invited Speaker at 2006 National Soil, Water, and Air Conference of the US Bureau of Land Management, National Training Center, Phoenix, AZ, Feb. 27 – March 3, 2006.
80. * **Miller, S.N.**, Zou, L., D. Semmens, A. Vekatasamy and D.P. Guertin, 2006. GIS-based statistical modeling of channel morphology using LIDAR cross-section profiles and watershed characteristics. Abstract and oral presentation at AWRA Conference on Geographic Information Systems (GIS) and Water Resources IV, Houston, Texas, May 8-10, 2006.
81. * **Miller, S.N.**, S.R. Shrestha, D.J. Semmens, and A. Tilaye, 2006. Channel Morphology Extraction and Validation using Ground-Based LiDAR. Abstract and oral presentation at AWRA Conference on Geographic Information Systems (GIS) and Water Resources IV, Houston, Texas, May 8-10, 2006.
82. ~ **Miller, S.N.**, 2006. LiDAR Applications. Invited speaker to GEOG 4140: Remote Sensing and Natural Resources Management, Laramie, WY, April 25, 2006.
83. * Caffrey, P., **S.N. Miller**, M. Berendsen, R. Schuler, and K. Anderson, 2006. GIS and Modeling Tools for Evaluating Impacts of CBNG Development in Wyoming. Poster Presentation to GIS Days, November 20-24, 2006, Laramie, WY.
84. Burns, S., S. Scott, D. Goodrich, M. Hernandez, L. Levick, A. Cate, W. Kepner, D. Semmens, **S. Miller** and P. Guertin, 2006. Automated Geospatial Watershed Assessment (AGWA): A GIS-based hydrologic modeling tool for watershed Management and Landscape Assessment. Poster presentation at: 3rd Research Insights in Semiarid Ecosystems (RISE) Symposium, October 7, 2006, Tucson, AZ.
85. * Kibichii, S., W.A. Shivoga, M. Muchiri, T.J. Baldyga, and **S.N. Miller**, 2006. Impact of landuse on the physicochemical characteristics and the structure of benthic macroinvertebrates of the upper River Njoro, Kenya. Poster presentation to Environ06: 16th Irish Environmental Researchers Colloquium, Dublin, University College Dublin, January 2-8, 2006.
86. * Baldyga, T.J. and **S.N. Miller.**, 2006. Estimating the effects of land cover misclassification derived from remotely sensed imagery on distributed hydrologic models. University of Wyoming Graduate Student Symposium, 3 – 4 April, 2006.
87. * S.R. Shrestha, **S.N. Miller**, and D. Gabriels, 2006. Soil Erosion Assessment in Middle Mountains of Nepal using GIS based Model. Oral presentation at AWRA Conference on Geographic Information Systems (GIS) and Water Resources IV, Houston, Texas, May 8-10, 2006.
88. * H.R. Griscom, **S.N. Miller**, and T. Gyedu-Ababio, 2006. Drying of the Luvuvhu River, South Africa: examining the roles of land cover change and water extraction with GIS-based hydrologic modeling and remote sensing. Abstract and poster presentation at AWRA Conference on Geographic Information Systems (GIS) and Water Resources IV, Houston, Texas, May 8-10, 2006.

89. D. J. Semmens, **S.N. Miller**, and D.C. Goodrich, 2006. Towards an Automated Tool for Channel Network Characterization, Modeling, and Assessment. Abstract and oral presentation to Third Federal Interagency Hydrologic Modeling Conference, Reno, NV, April 2-6, 2006.
90. * H. Griscom, **S.N. Miller**, and T. Gyedu-Ababio, 2006. Kruger National Park, South Africa: Using GIS-based Hydrologic Modeling & Remote Sensing to Assess Human Impacts on the Luvuvhu River. Abstract and oral presentation to University of Wyoming Graduate Student Symposium, Laramie, WY, April 3, 2006.
91. * Baldyga, T.J., **S.N. Miller**, K.L. Driese, R. Sivanpillai, and C. Maina Gichaba, 2005. Enhanced land cover classification in a tropical Kenya landscape. Oral Presentation at Pecora 16: "Global Priorities in land Remote Sensing". October 23-27, 2005, Sioux Falls, SD.
92. * Kibichii, S., W.A. Shivoga, M. Muchiri, and **S.N. Miller**, 2005. Physico-chemical Characteristics of Streams Draining into Lake Nakuru in relation to their Watershed Landuse. Oral Presentation at the 11th International Conference on the Conservation and Management of Lakes, 31 October to 4 November 2005, Nairobi, Kenya.
93. * Maina-Gichaba, C. W. A. Shivoga, E. M. Enanga, S. Kibichii and S. N. Miller, 2005. Sediment Loading on Inland Lakes/Wetlands: A Case Study of Lake Nakuru, Kenya. Oral Presentation at the 11th International Conference on the Conservation and Management of Lakes, 31 October to 4 November 2005, Nairobi, Kenya.
94. * Milkah, F.N., W. A. Shivoga, Mucai Muchiri and S. N. Miller, 2005. Effects of Land Use Changes on Birds Composition along River Njoro: A Watershed of Lake Nakuru. Oral Presentation at the 11th International Conference on the Conservation and Management of Lakes, 31 October to 4 November 2005, Nairobi, Kenya.
95. Okelo, M.O., J.O. Onyando, W.A. Shivoga and S. N. Miller, 2005. Analysis of Surface Runoff and Soil Loss under different Land Use Types in River Njoro Watershed Using a mini Rainfall Simulator. Oral Presentation at the 11th International Conference on the Conservation and Management of Lakes, 31 October to 4 November 2005, Nairobi, Kenya.
96. * Shivoga, W.A., M. Muchiri, S. Kibichi, J.Odanga, **S.N. Miller**, T.J. Baldyga, C. Maina Gichaba, 2005. Impacts of upland land use on downstream water quality in River Njoro Watershed, Kenya. Oral Presentation at the 11th International Conference on the Conservation and Management of Lakes, 31 October to 4 November 2005, Nairobi, Kenya.
97. **Miller, S.N.**, and M. Tischler, 2005. Army Remote Moisture System: A GIS Enabled Land-Surface Model for Estimating Soil Moisture. Abstract and oral presentation at 2005 ASA-CSSA-SSSA International Annual Meetings Salt Lake City, UT - November 6 - 10, 2005.
98. **Miller, S.N.**, W.A. Shivoga, F.K. Lelo, C. Maina-Gichaba, S. Ouma, M. Muchiri, and M.W. Jenkins, 2005. The Sustainable management of watersheds project. Oral presentation at Global Livestock CRSP Retreat, Dublin, Ireland, June 24, 2005.
99. * Baldyga, T.J., **S.N. Miller**, K.L. Driese, and C. Maina-Gichaba, 2005. Using Landsat Imagery to Analyze Land Cover Change in the Njoro Watershed, Kenya. Poster presentation to XX International Grasslands Congress, University College Dublin, Ireland June 26 – July 1, 2005.
100. * Shivoga, W. A., M. Muchiri, S. Kibichi, J. Odanga, **S.N. Miller**, and T.J. Baldyga, 2005. The impact of land use on water quality in River Njoro watershed, Kenya. Poster presentation to XX International Grasslands Congress, University College Dublin, Ireland June 26 – July 1, 2005.
101. Onyando, J.E., M.O. Okelo C.M. Gichaba, W.A. Shivoga, and **S.N. Miller**, 2005. Micro-field assessment of soil erosion and surface runoff using mini rainfall simulator in upper River Njoro watershed. Poster presentation to XX International Grasslands Congress, University College Dublin, Ireland June 26 – July 1, 2005.

102. Chiuri, L.W., F.K. Lelo, M.W. Jenkins, and **S.N. Miller**, 2005. Development of a Toolkit for Participatory Management of Rural Watersheds in Kenya. Poster presentation to XX International Grasslands Congress, University College Dublin, Ireland June 26 – July 1, 2005.
103. ~ **Miller, S.N.**, 2005. Watershed Management. Invited speaker to ENR 2000, October 25, 2005.
104. * E.J. Wald, **S.N. Miller**, and R.A. Olson, 2005. Predicting Winter Moose Habitat in Southeastern Wyoming—A Preliminary Model. Poster presentation at The 41st Annual North American Moose Conference And Workshop, Whitefish, MT, May 22-26, 2005.
105. * **Miller, S.N.**, H.R. Griscom, T. Gyedu-Ababio, N.M. Korfanta, and W.A. Shivoga, 2005. A Multidisciplinary Research and Outreach Framework For The Sustainable Management Of Watersheds. Abstract and oral presentation at The 3rd KNP Science Networking Meeting. Skukuza, Mpumalanga, South Africa, April 4-8, 2005.
106. * Korfanta, N.M., **S.N. Miller**, and H. Bergman, 2005. Beyond the fence: linking on- and off-park land uses with biodiversity conservation in Kruger National Park. Abstract and oral presentation at The 3rd KNP Science Networking Meeting. Skukuza, Mpumalanga, South Africa, April 4-8, 2005.
107. * Griscom, H.R., T. Gyedu-Ababio, and **S.N. Miller**, 2005. Designing land use and hydrologic assessments for the Upper Luvuvhu and Shingwedzi Rivers: A step towards Integrated Catchment Management. Abstract and oral presentation at The 3rd KNP Science Networking Meeting. Skukuza, Mpumalanga, South Africa, April 4-8, 2005.
108. ~ **Miller, S.N.**, 2005. Controlled chaos: merging concepts, models, and people for multidisciplinary watershed research in Kenya. Invited speaker at Department of Renewable Resources Seminar Series RAD – Research Across Disciplines. Laramie, WY Feb. 18, 2005.
109. ~ Bagby, L., **S.N. Miller**, H. Bergman, and H. Harlow, 2005. South Africa's Kruger National Park: Travelogue and UW Research Plan. Invited speaker to School of Environment and Natural Resources Student-Faculty Forum. Laramie, WY, Feb. 10, 2005.
110. * Thel, L., S. Mooney, D. Ouma and **S.N. Miller**, 2005. Applying integrated modeling of economics and natural resources to a Kenyan watershed. Poster presentation to UW Graduate School Symposium, May 2005.
111. ~ **Miller, S.N.**, 2004. Sustainable Management of a Rapidly Changing Kenya Watershed. Invited speaker to Annual Board Meeting of the International Programs Office, University of Wyoming. Laramie, WY, Nov. 5, 2004.
112. **Miller, S.N.**, W.A. Shivoga, F.K. Lelo, C. Maina-Gichaba, S. Ouma, M. Muchiri, and M.W. Jenkins, 2004. Sustainable Management of Watersheds – A Spatially Explicit Multidisciplinary Project. Abstract and oral presentation at GIS in the Rockies 2004 Conference: "Worlds of Opportunity". Denver, CO October 6-8, 2004.
113. * Dwivedi, M., M. Rayda, and **S.N. Miller**, 2004. Internet Map Server for Invasive Weeds in Wyoming. Abstract and oral presentation at GIS in the Rockies 2004 Conference: "Worlds of Opportunity". Denver, CO October 6-8, 2004.
114. * Baldyga, T.J., **S.N. Miller**, L. Thel, W.A. Shivoga, and C. Maina-Gichaba, 2004. Improving livelihoods through with Remote Sensing and GIS. Abstract and oral presentation at GIS in the Rockies 2004 Conference: "Worlds of Opportunity". Denver, CO October 6-8, 2004.

115. * Thel, L., T.J. Baldyga, A.J. Cockrell, **S.N. Miller**, F.K. Lelo, C. Maina-Gichaba, S. Ouma, W.A. Shivoga, M. Muchiri, and M.W. Jenkins, 2004. Integration and management of hydrologic, ecologic, socio-economic and stakeholder data for watershed management in Kenya. Abstract and oral presentation at GIS in the Rockies 2004 Conference: "Worlds of Opportunity". Denver, CO October 6-8, 2004.
116. ~ **Miller, S.N.**, 2004. Application of remote sensing, GIS and modeling in integrated hydrologic / geomorphic research. Invited speaker to Egerton University Geography Department. Njoro, Kenya, July 13, 2004.
117. ~* **Miller, S.N.**, L. Thel, 2004. Integrating and managing data for a multidisciplinary research project. Invited speaker to Department of Environmental Science, Egerton University. Njoro, Kenya, July 9, 2004.
118. * Baldyga, T.J., **S.N. Miller**, W.A. Shivoga, C. Maina-Gichaba, 2004. Land cover change detection in the River Njoro watershed: a landscape in transition. Poster presented at 57th Annual Meeting of Society for Range Management, Salt Lake City, UT, January 24-30, 2004.
119. * Baldyga, T.J., **S.N. Miller**, W.A. Shivoga, and C. Maina-Gichaba, 2004. Assessing the impact of land cover change in Kenya using remote sensing and hydrologic modeling. Oral presentation at the 2004 American Society for Photogrammetry & Remote Sensing Annual Conference, Denver, CO, May 23-28, 2004.
120. **Miller, S.N.**, 2004. Landscape ecology applications. Presentation to Casper Community College students as part of the annual "Introduction to Range Management" class. April, 2004, Casper, WY.
121. * Shrestha, S.R., and **S.N. Miller**, 2004. High Resolution Terrain Mapping for Geomorphic and Hydrologic Study. Poster presentation to UW Graduate School Symposium, May 2004.
122. Levick, L.R., R.L. Scott, **S.N. Miller**, D.J. Semmens, D.P. Guertin, and D.C. Goodrich, 2003. Application of a land cover modification tool and the Automated Geospatial Watershed Assessment tool (AGWA) at Fort Huachuca, AZ. Oral presentation to Society for Conservation GIS (SCGIS) Annual Conference, July 3-5, 2003, Pacific Grove, CA.
123. Miller, R.C., D.P. Guertin, P. Heilman, and **S.N. Miller**, 2003. A spatial decision support system for rangeland watershed management. Poster presentation to the 56th Annual Meeting of the Society for Range Management: Rangelands: Diversity Through Time. Feb. 2-6, 2003, Casper, WY.
124. Goodrich, D.C, A. Farid, **S.N. Miller**, D. Semmens, D. Williams, S. Moran, and C.L. Unkrich, 2003 (invited) Airborne Laser Swath Mapping (ALSM) for Enhanced Riparian Water Use Estimates, Basin Sediment Budgets, and Terrain Characterization. *Eos Trans. AGU*, 84(46), Fall Meet. Supplement, Abstract G12A-04.
125. ~ **Miller, S.N.**, 2003. Habitat analysis in a changing world: the value of landscape metrics. Invited speaker to the Department of Geography's Annual Geography Days. Nov. 18, 2003, University of Wyoming, Laramie, WY.
126. ~ **Miller, S.N.**, 2003. Distributed hydrologic modeling at multiple scales. Invited speaker to the Wyoming Geographic Information Science Center Seminar Series. Oct. 17, 2003, University of Wyoming, Laramie, WY.
127. ~ **Miller, S.N.**, 2003. Sustainable management of a rapidly changing Kenya watershed. Invited speaker to School of Environment and Natural Resources Student-Faculty Forum, Oct. 1, 2003, University of Wyoming, Laramie, WY.

128. **Miller, S.N.**, 2003. Landscape ecology applications. Presentation to Casper Community College students as part of the annual "Introduction to Range Management" class. April 17, 2003, Casper, WY.
129. Hockett, S., D.L. Coppock, W.A. Shivoga, F.K. Lelo, and **S.N. Miller**, 2003. Comparing processes of stakeholder participation in community-based watershed programs: the Little Bear River, Utah, USA, and River Njoro, Rift Valley Province, Kenya. Poster presentation at VII International Rangeland Congress. July 26th-Aug. 1, 2003, Durbin, South Africa.
130. Shivoga, W., F. Lelo, C. maina-Gichaba, F. Lusenaka, M.W. Jenkins, and **S.N. Miller**, 2002. Integrated stakeholder participation and watershed assessment in the River Njoro watershed, Kenya. Poster presentation at GL-CRSP meeting, September 2002, Washington, DC.
131. ~ **Miller, S.N.**, 2002. Overview of landscape science tools and use for environmental assessment/decision making. Invited Speaker to Working Group Meeting of NATC/CCMS Pilot Study on Environmental Decision-Making for Sustainable Development in Central Asia: "Use of Landscape Sciences as Tools for Environmental decision making". September 22, 2002, Almaty, Kazakhstan.
132. ~ **Miller, S.N.**, 2002. Demonstration of landscape science software packages: ATtILA and AGWA. Invited Speaker to Working Group Meeting of NATC/CCMS Pilot Study on Environmental Decision-Making for Sustainable Development in Central Asia: "Use of Landscape Sciences as Tools for Environmental decision making". September 22, 2002, Almaty, Kazakhstan.
133. **Miller, S.N.**, 2002. Successfully managing multiple uses of water: practical aspects and case studies. Oral presentation to NATO Advanced Research Workshop: Risk Assessment as a Tool for water Resources Decision making in Central Asia. September 23-25, 2002, Almaty, Kazakhstan.
134. **Miller, S.N.**, 2002. Landscape models. Oral presentation to NATO/CCMS Pilot Study Workshop on the Use of landscape Sciences for Environmental Assessment. April 3-5, 2002, Las Vegas, NV.
135. **Miller, S.N.**, 2002. Demonstration: Automated Geospatial Watershed Assessment – A GIS-based hydrologic modeling tool. Oral and software presentation to NATO/CCMS Pilot Study Workshop on the Use of landscape Sciences for Environmental Assessment. April 3-5, 2002, Las Vegas, NV.
136. **Miller, S.N.**, Semmens, D.J., Goodrich, D.C., and M. Hernandez, 2002. Automated Geospatial Watershed Assessment (AGWA) tool. Presentation & Software Demonstration at Changes & Choices: Collaborative Land Use Planning in the Southwest. November 20-21, 2002, Tucson, AZ
137. **Miller, S.N.**, R.C. Miller, D.J. Semmens, M. Hernandez, W.P. Miller, D.C. Goodrich, W.G. Kepner, D. Ebert, 2002. AGWA - Automated hydrologic modeling for landscape assessment. Poster Session for Second Federal Interagency Hydrologic Modeling Conference, July 28 - August 1, 2002, Las Vegas, Nevada.
138. **Miller, S.N.**, D.J. Semmens, M. Hernandez, D.C. Goodrich, W.G. Kepner, and W.P. Miller, 2002. Demonstration of the Automated Geospatial Watershed Assessment tool and its application in watershed analysis: Oral and Software Presentation to Southwest Landscape Change Workshop, February 20-21, 2002, Las Cruces, NM.
139. **Miller, S.N.**, D.C. Goodrich, R.C. Miller, D.J. Semmens, M. Hernandez, W.G. Kepner, D. Ebert, and W.P. Miller, 2001. Automated Geospatial Watershed Assessment (AGWA): A GIS-based hydrologic modeling tool. Poster Presentation at Water Resources for the 21st Century: A National Hydrology and Hydraulics Engineering Workshop, Nov. 26-30, 2001, Tucson, AZ.

140. Osterkamp, W.R., and **S.N. Miller**, 2001. Seasons of drought and flood: what does the future hold? Oral presentation at Hot Topics, Cool Solutions 2001; "The Sustainable Desert: Building Livable Futures, A Conference on Greenbuilding and Livable Communities", September 10-12, 2001, Tucson, AZ.
141. Guertin, D.P., **S.N. Miller**, and D.C. Goodrich, 2001. Impact of urbanization of runoff and erosion. Oral presentation at Hot Topics, Cool Solutions 2001; "The Sustainable Desert: Building Livable Futures, A Conference on Greenbuilding and Livable Communities", September 10-12, 2001, Tucson, AZ.
142. Guertin, D.P., and **S.N. Miller**, 2001. Application of the fuzzy logic approach for watershed assessment. American Water Resources Association and Universities Council on Water Resources; Annual Summer Specialty Conference: "Decision Support Systems for Water Resources Management", June 27 – 30, 2001, Snowbird, UT.
143. **Miller, S.N.**, R.C. Miller, M. Hernandez, D. Semmens, D. C. Goodrich, and P. Miller, 2001. Two-Day Training Seminar and Workshop for the Automated Geospatial Watershed Assessment (AGWA) tool. May 30-31, 2001, Las Vegas, Nevada.
144. **Miller, S.N.**, D.C. Goodrich, R.C. Miller, M. Hernandez, and D. Semmens, 2001. Modeling plant assemblages. USGS Workshop: "Predicting hydrologic, geologic, and biologic responses to a drier and warmer climate in the desert Southwest", April 23-25, 2001, Tucson, AZ., *Eos* 82 (41): 475
145. ~ **Miller, S.N.**, and R.C. Miller, 2001. Land Cover Impacts on Hydrology. Invited Lecture for University of Arizona's WSM 462/562: Watershed Management, February 22, 2001, Tucson, AZ.
146. ~ **Miller, S.N.**, R.C. Miller, and D. Semmens, 2001. Modeling the Hydrologic Effects of Land Cover Change Using Remote Sensing and GIS: A Demonstration of AGWA - the Automated Geospatial Watershed Assessment tool. Invited Speaker for the Agricultural and Biosystems Engineering Department's Annual Seminar Series, February 19, 2001, Tucson, AZ.
147. **Miller, S.N.**, R.C. Miller, and D. Semmens, 2001. AGWA - the Automated Geospatial Watershed Assessment Tool. USDA - ARS SWRC Seminar Series January 31, 2001, Tucson, AZ.
148. ~ **Miller, S.N.**, 2001. The use of High Technology in Hydrology and Watershed Management. Invited Speaker, St. Gregory College Preparatory School Annual Humanities Day January 10, 2001, Tucson, AZ.
149. **Miller, S.N.**, M. Hernandez, R.C. Miller, D.C. Goodrich, W.G. Kepner, D.L. Heggem, M.L. Mehaffey, F. Kim Devonald, P. Miller, 2001. Land Cover Change and Large Scale Hydrologic Modeling of the San Pedro River and Catskill/Delaware Basins. Integrated Decision Making for Watershed Management: Processes and Tool Symposium. January 7-9, 2001, Chevy Chase, MD.
150. ~ **Miller, S.N.**, Goodrich, D.C., Miller, R.C., Hernandez, M., 2000. Land Cover Change and Hydrologic Response. Invited Speaker to the Joint USDA Agricultural Research Service – Natural Resources Conservation Service Technology Retreat Nov. 1, 2000, Tucson, AZ.
151. ~ **Miller, S.N.**, 2000. Susceptibility of Alluvial Stream Channels to Degradation: A Case for Conservation Planning. Invited Presenter to Upper San Pedro Partnership Committee. October 11, 2000, Tombstone, AZ.
152. ~ **Miller, S.N.**, 2000. Modeling the Impacts of Land Cover Change on Hydrology and Erosion. Invited Speaker to the School of Renewable Natural Resources Advisory Council's Annual Meeting. October 6, 2000, Tucson, AZ.

154. ~ **Miller, S.N.**, Miller, R.C., Hernandez, M., Goodrich, D.C., 2000. Land Cover Change and Large Scale Hydrologic Modeling of the San Pedro River and Catskill/Delaware Basins. Invited Speaker, US-EPA Landscape Sciences Branch Retreat, Mt. Charleston, NV, September 25-28, 2000.
156. ~ **Miller, S.N.**, 2000. Improved landscape assessment through spatial analysis. Invited Lecturer for University of Arizona's WSM 462/562: Watershed Management.
157. ~ **Miller, S.N.**, 2000. Integrating GIS, remote sensing, and hydrologic models for landscape indicator assessment. Invited Lecturer for University of Arizona's WSM 696: Application of Remote Sensing and GIS Technologies in Environmental Quality Analysis.
158. **Miller, S.N.**, J.J. Stone, J.G. Martinez, and D.P. Guertin, 1999. Influence of geographical information system watershed characterization for hydrologic modeling. AGIC '99: Arizona Geographic Information Conference: Sharing Knowledge and Data in the 21st Century, August 8-10, 1999, Tucson, AZ.
159. Masterson, J., **S.N. Miller**, and D. Yakowitz, 1996. Software enhancements to the USDA multi-objective decision support tool. Presentation at the Malama 'Aina 1995: Multiple Objective Decision Making for Land, Water, and Environmental Management, Honolulu, HI, July 23-28, 1995.
160. Goodrich, D.C., L.J. Lane, D.A. Woolhiser, R. Shillito, and **S.N. Miller**, 1996. Linearity of basin response as a function of scale in a semi-arid watershed. Abstract and poster presentation, Conference and Workshop on Basin Response, Vienna Austria, June 17-20, 1996.
161. Potter, T., D.P. Guertin, and **S.N. Miller**, 1996. Hydrologic modeling of an urban watershed using GIS and remote sensing. American Water Resources Association's 32nd Annual Conference and Symposium: "GIS and Water Resources", Sept. 22-26, 1996, Ft. Lauderdale, FL.

Popular Press, Either Authored or About my Activities

1. Miller, S., Team receives ARS Technology Transfer Award. Agademics, January 2009.
2. Waggener, R., 2009. Ag college staff, faculty members receive honors. Agademics, January 2009.
3. Waggener, R., 2007. Scott Miller Earns NACTA Teaching Award of Merit. Agademics, June 2007, 2 pp.
4. Chatterjee, A., 2005. GIS: Sustaining watershed. Frontiers VXIII(1): 20-23
5. S. Mooney, **S.N. Miller**, and M. Jenkins, 2005. Improving the quality of lives in Africa. Reflections, May 2005: 31-33
6. Uhlman, K., D.P. Guertin, and **S.N. Miller**, 2005. Water & Wastewater Products 4(3): 7 pp.
7. S. Bopp, 2004. Into Africa. AlumNews 53(4): 5 pp.
8. V. Hamende, 2004. Out of Africa: US, Kenya unite to improve watershed life. Agademics December 2004: 3-4.
9. V. Hamende, 2003. UW helping Kenya solve water problems. Ag News 12(2): 2-3.

Dissertation

- **Miller, S.N.**, 2002. Scale effects of geometric complexity, misclassification error and land cover change in distributed hydrologic modeling. Ph.D. Dissertation, University of Arizona. Available from UMI Dissertation Services. 170 pp.

Thesis

- **Miller, S.N.**, 1995. An analysis of channel morphology at Walnut Gulch: linking GIS and field research at Walnut Gulch. Master's Thesis, University of Arizona. Available from UMI Dissertation Services. 169 pp.

External Research Support

Currently Funded Projects (Total = \$26,165,776; \$22,535,580 at Univ. of Wyoming)

1. Water in a Changing West: The Wyoming Center for Environmental Hydrology and Geophysics. PI's: Sylvester, A.S., W.S. Holbrook, and S.N. Miller. Proposal accepted by NSF-EPSCoR RII Track I for \$20,000,000 (100% at Wyoming) for 2012-2017
2. Collaborative Research: CI-WATER, Cyberinfrastructure to Advance High Performance Water Resource Modeling. PI: Multiple PIs at BYU, Univ. of Utah, Utah State. PI (Wyoming): Ogden, F.L. Co-PI: C, Douglas, K. Hansen, **S.N.** Miller, Y. Zhang. Proposal funded by NSF-EPSCoR for \$5,000,000 (\$2,465,005 at Wyoming).
3. Imaging of Shallow Subsurface Flow in Saprolitic Soils using Electrical Resistivity Tomography. PI: Ogden, F.L. Co-PI: S.N. Miller. Proposal accepted by U.S. Army Research Office, CFDA No. 12.431. Amount requested: \$69,698 (100% at Wyoming) for 2011-2012.
4. Building partnerships, infrastructure and knowledge for sustainable resource management. PI: **Miller, S.N.** Proposal funded by the University of Colorado – Boulder / Western Water Assessment for \$49,887 (100% at Wyoming) for 2011-2012.
5. Climate Assessment in Wyoming. PI: **Miller, S.N.** Proposal funded by the University of Colorado – Boulder / Western Water Assessment for \$49,887 (100% at Wyoming) for 2011-2012.
6. Relationships between beaver ponds and woody vegetation dynamics on the Pole Unit of the Medicine Bow National Forest. PI: **Miller, S.N.** Co-PI: P. Caffrey and C. Barrineau. Proposal accepted by Wyoming Game and Fish Department. Total budget = \$171,951 (all at UW).
7. Multi-agency Collaborative Effort to Model Salt Loading in Energy Development Areas. PI: **Miller, S.N.** Co-PI: Paul Caffrey. Proposal accepted and funded by three agencies: USDI Bureau of Reclamation Colorado River Basin Salinity Control Program (\$82,000); USDI Bureau of Land Management (\$8,000); and the Univ. of Wyoming School of Energy Resources Matching Grant Fund (\$42,000) and Graduate Students Support (\$48,000). Total budget = \$180,000 for 2009-20011.
8. PLACE [Place Learning And Civic Engagement]. PI: Welsh, K. Co-PIs (many, including **S.N. Miller**), 2010. Proposal accepted by the Wyoming Department of Education. Award amount \$208,793.
9. Evaluation and Expansion of a Geographic Information System (GIS) Degree Day Model to Predict Rift Valley Fever Virus Risk in North America. PI: **Miller, S.N.** Co-PI: S. Konrad. Proposal accepted by USDA-ARS. Award amount \$150,781 (all at UW).
10. Development of a Rangeland Decision Support Tool to Improve Rangeland Watershed Management. PI: Guertin, D.P. Co-PIs: G.B. Paige, **S.N. Miller**, D.C. Goodrich, P. Heilman, M. Naerhing, J.J. Stone, G. Ruyle. Proposal accepted by the U.S. Department of Agriculture (USDA) Cooperative State Research, Education, and Extension Service (CSREES) Rangeland Research program. Award amount: \$384,554 (\$165,862 at Univ. of Wyoming) for 2008-2010.

Previously Funded Projects (Total = \$4,016,918)

1. Development of a New Graduate Class: Spatial Hydrology. PI; **Miller, S.N.** Proposal accepted by Wyoming NASA Space Grant. Award amount: \$5,000

2. Water distribution system and floodplain configuration of an anastomosed river basin in a semi-arid watershed: Little Laramie River basin, Wyoming. PI: Miller, S.N. Co-PIs: P.L. Heller and N. Humphrey. Proposal accepted by Univ. of Wyoming Agricultural Experiment Station. Award amount: \$60,000 for 2006-2009.
3. Sustainable Management of Watersheds: Biophysical, Livestock and Human Interactions in the River Njoro Watershed. PI: Miller, S.N. Co-PIs: W.A. Shivoga, F. Lelo, C.M. Gichaba, L. Chiuri, M. Njeri, D. Liti, and M. Jenkins. Proposal accepted by USAID Global Livestock CRSP. Award amount: \$450,000 (\$163,308 at Univ. of Wyoming) for 2006-2008.
4. Enhanced watershed management and sustainability through gender analyses and interventions, Njoro River watershed, Kenya. PI: Miller, S.N. Proposal accepted by USAID Bureau for Economic Growth, Agriculture, and Trade. Award amount: \$255,000 (\$70,798 at Univ. of Wyoming) for 2006-2009.
5. APD NEPA Analysis Toolkit Phase III. PI: Miller, S.N. and P. Caffrey. Proposal accepted by USDI-BLM, Wyoming State Office. Award amount: \$62,000 for 2006-2007.
6. APD NEPA Analysis Toolkit Phase IV. PI: Miller, S.N. and P. Caffrey. Proposal accepted by USDI-BLM, Wyoming State Office. Award amount: \$75,000 for 2006-2007.
7. Spatial CBNG Science and Management: Lessons Learned and Ways Forward. PI: Miller, S.N. Co-PI: F. Ogden. Proposal accepted by University of Wyoming Institute of Environment and Natural Resources for the US Department of Energy. Award Amount: \$175,000 for 2006-2008.
8. Enhanced risk assessment of West Nile Virus resulting from coalbed natural gas product waters. PI: Miller, S.N. Co-PIs: L. Zou, E. Schmidtman, R. Sivanpillai. Proposal accepted by University of Wyoming Institute of Environment and Natural Resources for the US Department of Energy. Award Amount: \$100,200 for 2006-2008.
9. Rift Valley Fever Risk Assessment. PI: Miller, S.N.. Proposal accepted by the USDA-ARS Arthropod-Borne Animal Disease Research Lab. Award Amount: \$88,000 for 2006-2007.
10. Operational Soil Moisture Estimation at Local and Regional Scales. PI: Moran, M.S; Co-PI's: Goodrich, D.C., C. Peters-Lidard, S.N. Miller. Proposal Accepted by the US-Army Topographic Engineering Center, January, 2003. Award amount: \$1,079,100 (\$233,400 for U. Wyoming subcontract) for March 2003 – March 2008. Contract to Wyoming is run as a specific agreement with the USDA-ARS SWRC.
11. Internet Map Server for Invasive Weeds in Wyoming. PI: Miller, S.N. Non-competitive proposal accepted by the Wyoming Cooperative Agricultural Pest Survey. \$43,000 for 2003-2007.
12. Multidisciplinary Research for Sustainable Management of Rural Watersheds: the River Njoro, Kenya. PI: **Miller, S.N.** Co-PIs: W.A. Shivoga, F. Lelo, C.M. Gichaba, L. Chiuri, M. Njeri, D. Liti, and M. Jenkins. Proposal accepted by the USAID Global Livestock Collaborative Research Support Program. Award amount: \$1,056,793 for October 2003 - September 2007. Averages approximately \$265,000 annually for 2003-2006.
13. Instrumentation of a local watershed for enhancement of REWM4285: Wildland Hydrology. PI: **Miller, S.N.** Proposal accepted by Univ. of WY College of Agriculture Augmentation Program. Award amount: \$11,308 for 2006.
14. Advancing the tri-lateral research program: Kruger-Yellowstone-Fraser. PI: **Miller, S.N.** Proposal accepted by University of Wyoming Agricultural Experiment Station Global Perspectives Program. Award amount: \$2,000 for 2006.
15. Spatial Analysis of Watershed in a Rapidly Developing Changing Landscape: Inside and Outside the Fence at Kruger National Park, South Africa. PI: **Miller, S.N.** Proposal accepted by Wyoming NASA Space Grant Consortium. Award amount: \$10,300 for 2005-2006

16. Estimating the effects of land cover misclassification derived from remotely sensed imagery on distributed hydrologic models. PI: **Miller, S.N.** Co-PI: T.J. Baldyga. Proposal accepted by Wyoming NASA Space Grant Consortium. Award amount: \$20,500 for 2005-2006.
17. Land Cover and Hydrologic Assessments of the Upper Luvuvhu and Shingwedzi Watersheds, South Africa: Steps Towards Integrated Catchment Management. PI: **S.N. Miller**. Co-PI: H. Griscom. Proposal accepted by Wyoming NASA Space Grant Consortium. Award amount: \$15,000 for 2005-2006.
18. Field Validation of an Improved Method For Landscape Assessment Using Remote Sensing And GIS. PI: **Miller, S.N.** Co-PI, T.J. Baldyga. Proposal Accepted by Jim Ellis Mentorship Program for Graduate Students, Global Livestock Collaborative Research Support Program. Award Amount: \$3,000 for Summer, 2004.
19. Using GIS methods to assess bio-geographic and climatic effects on the vector capacity of *Culex tarsalis* for West Nile virus transmission in Powder River Basin. PI: **Miller, S.N.** Proposal accepted by USDA-ARS Arthropod-Borne Animal Disease Research Lab (ABADRL). Award amount: \$100,000 for 2004-2006.
20. APD NEPA Analysis Toolkit Phases I and II. PI: **Miller, S.N.** and P. Caffrey. Proposal accepted by BLM, Wyoming State Office. Award amount: \$61,000 for 2004-2006.
21. Integrating Hydrologic, Geomorphic, and Ecological Assessment at the Watershed Scale. PI: **Miller, S.N.** Proposal accepted by the US-EPA Landscape Ecology Branch, July 2004. Award amount: \$36,417 for 2004-2005. Contract to Wyoming is funded as supplemental funding through the USDA-ARS specific agreement generated for "Operational soil moisture estimation...".
22. Watershed hydrology in Kenya. PI: **Miller, S.N.** Proposal accepted by Univ. of Wyoming International Programs Office. Award amount: \$1,500 for travel to Kenya in 2003.
23. CCMS Travel Grant. PI: **Miller, S.N.** Proposal accepted by NATO-CCMS. Award amount 1800 EUR for travel in 2003.
24. Problem Model Assessment And Initial Capacity Building For The Rehabilitation Of The River Njoro Watershed, Kenya. PI: **Miller, S.N.** Co-PIs: W.A. Shivoga, F. Lelo, C.M. Gichaba, and M. Jenkins. Global Livestock Collaborative Research Support Program Grant. Award amount: \$207,000 for September 2002 – September 2003.
25. Spatial Analysis for Watershed Resources in Kenya. PI: **Miller, S.N.** Global Perspectives Program, University of Wyoming. Award amount: \$2,000 for January 2002 – September 2003.
26. NATO Travel Grant for Advanced Research Workshop, Almaty, Kazakhstan. PI: **Miller, S.N.** Award amount: \$2,800 for September 2002.
27. Landscape Indicator Interface with Hydrologic and Ecological Models Phase II. D.C. Goodrich and W.G. Kepner, Principal Investigators with M. Hernandez, **S.N., Miller**, D.J. Semmens (USDA-ARS, SWRC, Tucson, AZ), K.B. Jones, and C. Edmonds (EPA-NERL, Las Vegas, NV) 2001-2004. Award amount: ~\$120,000 annually.
28. Interferometric Synthetic Aperture Radar Mapping of Upper San Pedro River Basin and Walnut Gulch Experimental Watershed. NASA-ESE Scientific Data Buy. D.C. Goodrich and **S.N. Miller**. 1999.
29. Interferometric Synthetic Aperture Radar Mapping of Upper San Pedro River Basin and Walnut Gulch Experimental Watershed. NASA-ESE Scientific Data Buy. D.C. Goodrich and **S.N. Miller**. 1998.

Graduate Student Advising

Committee Chair / Thesis Director – total = 18, 10 completed, 8 in progress

Completed

1. Matthew Hayes, MS student. Department of Ecosystem Science and Management / WARE, University of Wyoming. Thesis topic: Alterations to riparian vegetation resulting from beaver pond life histories. **Completion Date: December, 2012.**
2. Chris Kirol (Co-chair). MS student. Department of Ecosystem Science and Management, University of Wyoming. Thesis topic: Quantifying habitat importance for greater sage-grouse (*Centrocercus urophasianus*) population persistence in an energy development landscape. **Completion Date: December, 2012.**
3. Kelsha Anderson, MS student, Department of Renewable Resources, University of Wyoming. Thesis topic: Salinity Loading and Coal Bed Natural Gas Disturbance in Muddy Creek, WY. **Completion Date: August, 2010**
4. Tracy J. Baker. PhD student, Department of Renewable Resources, University of Wyoming. Dissertation Title: Spatially Explicit Multiple Objective Decision Support for Rural Watersheds. **Completion Date: December 2008.**
5. Laura Jungst. MS student, Department of Renewable Resources, University of Wyoming. Thesis topic: Soil quality and stream channel characteristics of montane and subalpine riparian meadows, Sierra Nevada, California. **Completion Date: December 2008.**
6. Philip Baigas. MS student, Department of Renewable Resources, University of Wyoming. Thesis Title: Moose habitat selection, winter diet, and seasonal distribution mapping of moose in Southeastern Wyoming. **Completion Date: December 2008.**
7. Hannah R. Griscom, MS student, Department of Renewable Resources / WARE, University of Wyoming. Thesis topic: Land cover and hydrologic assessments of the upper Luvuvhu and Shingwedzi watersheds, South Africa: steps towards integrated catchment management. **Completion date: May, 2007.**
8. Sudhir Raj Shrestha, MS student, Department of Renewable Resources, University of Wyoming. Dissertation topic: Remote mapping of soil characteristics using heuristic rules and fuzzy logic. **Completion date: May. 2007.**
9. Tracy J. Baldyga. MS student, Department of Renewable Resources / WARE, University of Wyoming. Thesis Title: assessing land cover change impacts using remote sensing and hydrologic modeling. **Completion date: August, 2005.**
10. Mona Dwivedi. MS student, Department of Electrical Engineering, University of Wyoming. Thesis title: internet map server for invasive weeds in Wyoming. Completion date: **June 2004.**

In Progress

1. Jagath Vithanage, PhD student, Department of Ecosystem Science and Management / WRESE PhD Program in Hydrologic Sciences, University of Wyoming. Dissertation research: Improved spatially distributed hydrologic modeling: parameter estimation, uncertainty and determination.
2. Anthony Perlinski (Co-chair). PhD student, Department of Ecosystem Science and Management, University of Wyoming. Dissertation research: Ecological site descriptions and their use in improved hydrological modeling.

3. Justin Stern, MS student, Department of Ecosystem Science and Management / WARE, University of Wyoming. Thesis topic: Controls on erosion in a semi-arid rangeland undergoing natural gas development.
4. Juan Carlos Bricenos, MS student, Department of Ecosystem Science and Management / WARE, University of Wyoming. Thesis topic: Fate and transport of water in Panama
5. Alan Klatt, MS student, Department of Ecosystem Science and Management / WARE, University of Wyoming. Thesis topic: Fate and transport of water in mountainous environments
6. Suman Chitrakar, PhD student, Ecosystem Science and Management / WRESE PhD Program in Hydrologic Sciences, University of Wyoming. Dissertation Research: Salinity modeling in Wyoming.
7. Abhishek Tilaye, MS student, Department of Renewable Resources, University of Wyoming. MS topic: ground- and airborne LiDAR for channel morphologic assessment.

Committee Appointment – total = 49, 34 completed, 15 in Progress

Completed

1. Austin Andrus, MS student, Department of Geology & Geophysics, University of Wyoming. Thesis topic: Controls on Anastomosis of the Little Laramie River. **Completion Date: December, 2012**
2. Corey Beaugh, MS student, Department of Ecosystem Science and Management / WARE, University of Wyoming. Thesis topic: *E. coli* Distribution and Streambed Processes of the Greybull River. **Completion Date: December, 2012**
3. Timothy Matthews, MS student, Department of Geology & Geophysics, University of Wyoming. Thesis topic: Understanding Sources and Timescales of Melt in Continental Rear Arcs using High-Precision Measurements of Uranium and Thorium in Lavas from Reventador Volcano, Ecuador.. **Completion Date: December, 2012**
4. Erica Bishop, MA student, Department of Geography / WARE, University of Wyoming. Thesis topic: The Influence of Large Wood on Sediment Transport and Storage in Two Headwater Mountain Streams, Fraser Experimental Forest, Colorado. **Completion Date: May, 2012**
5. Liberty Blain, MS student, Department of Ecosystem Science and Management / WARE, University of Wyoming. Thesis topic: Assessing the Effectiveness of Best Management Practices for Nonpoint Sources of *E. coli* Bacteria. **Completion Date: May, 2012**
6. Trey Crouch, MS student, Department of Civil and Architectural Engineering, University of Wyoming. Thesis topic: Quantifying Hydrological Ecosystem Services of Various Land Covers and within the Panamá Canal Watershed. **Completion Date: May, 2012**
7. Claire Landowski, MS student, Department of Geology & Geophysics, University of Wyoming. Thesis topic: Geochemistry and Subglacial Hydrology of the West Greenland Ice Sheet. **Completion Date: May, 2012**
8. Josh Fredrickson, MA student, Department of Geography / WARE, University of Wyoming. Thesis topic: Hydroclimatic Variability in Wyoming Headwaters **Completion Date: May, 2012**
9. Chad LeBeau, MS student, Department of Ecosystem Science and Management, University of Wyoming. Thesis topic: Evaluation of greater Sage-Grouse reproductive habitat and response to wind energy development in south-central Wyoming. **Completion Date: September, 2012**

10. Reinaldo Garcia, PhD student, Department of Civil and Architectural Engineering, University of Wyoming. Dissertation topic: River hydraulics and bridge scour: modeling flow fields and uncertainty. **Completion Date: May, 2012**
11. Nibret Abebe, MS student, Department of Civil and Architectural Engineering, University of Wyoming. Thesis topic: Soil moisture modeling and links to hydrologic modeling. **Completion Date: May, 2012**
12. Mary Williams, PhD student, Department of Renewable Resources, University of Wyoming. Thesis topic: Spatial analysis of landscape disturbance and relationships to hydrologic and landscape characteristics. **Completion Date: May, 2010**
13. Stephen Hockett, PhD candidate, Department of Environment and Society, Utah State University. Dissertation topic: Comparison of participatory practices in the Little Bear watershed, Utah and the Njoro River watershed, Kenya. **Completion Date: May, 2010**
14. Hall Sawyer, PhD student, Botany Department, University of Wyoming. Thesis topic: Mule Deer habitat use, migration, and population performance in developing gas fields of western Wyoming. **Completion Date: May, 2010**
15. Mark Williams, PhD student, Botany Department, University of Wyoming. Thesis topic: Reconstruction of historical vegetation assemblages in the Rocky Mountain region. **Completion Date: May, 2010**
16. Wei Sun, PhD student, Department of Renewable Resources, University of Wyoming. Dissertation topic: Velvet mesquite (*Prosopis velutina*) encroachment and ecosystem CO₂ exchange in semiarid grassland: insights from stable isotope measurements. **Completion Date: December 2009**
17. Genevive Mathers, MS student, Geology and Geophysics Department, University of Wyoming. Thesis topic: The relative roles of tectonics and climate in the deposition of five widespread conglomerates in the central and southern Rocky Mountains at the Cretaceous/Paleogene boundary: An application of detrital zircon geochronology to basin analysis. **Completion Date: December 2009**
18. Adam Liebman, MA student, International Studies Department, University of Wyoming. Thesis topic: Opposing hydropower development on the Nu River: A disconnect between urban activists and local residents. **Completion Date: December 2009**
19. Patricia Bigelow, PhD student, Zoology and Physiology, University of Wyoming. Dissertation topic: Identification and control of Lake Trout spawning habitat in Yellowstone Lake using field research and GIS. **Completion Date: May 2009**
20. Steve Hunter. MS student, Department of Civil and Architectural Engineering, University of Wyoming. Thesis topic: Desert river geomorphology the use high resolution digital elevation models to accurately measure river channel morphology. **Completion Date: May 2009**
21. Kerri Puckett, MS student, Department of Civil and Architectural Engineering, University of Wyoming. Thesis topic: Uncertainty quantification in predicting deep aquifer recharge rates, with applicability in the Powder River Basin, Wyoming. **Completion Date: May 2008.**
22. Stuart Geiger, MA student, Geography Department, University of Wyoming. Thesis topic: Influence of rock glaciers on stream hydrology, La Sal Mountains, Utah, USA. **Completion Date: May 2008.**
23. F. Anthony Barnett, MS student, Department of Civil and Architectural Engineering, University of Wyoming. Thesis topic: Upper Green River Basin streamflow reconstructions and drought variability. **Completion Date: December, 2007**

24. Maneesh Sharma, MS student, Department of Renewable Resources, University of Wyoming. MS Thesis: Assessing effect of resolution and rainfall at plot and watershed scales in hydrologic modeling. **Completion Date: May, 2007**
25. Tyrel West, MS Student, Civil and Architectural Engineering. Thesis title: Relationships among watershed characteristics and dominant discharge in Wyoming rivers and streams. **Completion Date: May, 2007**
26. Jonathan Adelman, MS student, Botany Department, University of Wyoming. MS thesis: Quantifying spatial variability of transpiration in a subalpine forest. **Completion Date: May, 2007**
27. Laura Hudson, PhD student, Botany Department, University of Wyoming. Dissertation topic: Dendroclimatic reconstruction and stable isotopic analysis using limber pine (*Pinus flexilis*) to assess drought. **Completion Date: May, 2007**
28. Meagan Bayless, PhD student, Botany Department, University of Wyoming. Dissertation topic: Microclimate and boundary layer modeling – interactions among plant soil and atmosphere. **Completion Date: May, 2007**
29. Nick Dornak, MS student, Department of Renewable Resources, University of Wyoming. Thesis topic: Evaluation of Best Management Practices for Protecting Groundwater Quality. **Completion date: August, 2006**
30. Travis Roth, MS student, Department of Renewable Resources, University of Wyoming. Thesis topic: Water quality monitoring and modeling. Expected completion date: **Completion date: May 2006.**
31. Prashant Patil, MS student, Department of Electrical and Computer Engineering. **Completion date: May, 2005.**
32. Elizabeth Hajek, MS student, Department of Geology and Geophysics, University of Wyoming. Thesis title: Analysis Of Fluvial Stacking Patterns In The Lower Castlegate Sandstone (Campanian, Helper, Utah) Using LiDAR Imaging. **Completion Date: Dec, 2005**
33. Alex McKiernan. MS student, Department of Geology and Geophysics, University of Wyoming. Thesis title: Evaluation of Smectite Dehydration as the Sole Pore Water Freshening Mechanism in the Nankai Trough, Offshore Southwest Japan: Implications for Lateral Fluid Flow in Subduction Zones. **Completion date: Dec, 2005.**
34. Curtis Bradley, MS student, Department of Renewable Natural Resources, University of Arizona. Thesis title: effects of soil data resolution on modeling results using a physically based rainfall-runoff model. **Completion date: May, 2003.**

In Progress

1. Wendy Irwin, MS student, Department of Ecosystem Science and Management / WARE, University of Wyoming. Thesis topic: Effects of vegetation manipulation on hydrologic response in a Wyoming watershed
2. Khodabakhsh Zabihi Afratakhti, PhD student, Ecosystem Science and Management, University of Wyoming. Dissertation topic: Assessing structure of Wyoming sage-steppe communities with high resolution LiDAR,
3. Tegenu Engda, PhD student, Ecosystem Science and Management / WRESE PhD Program in Hydrologic Sciences, University of Wyoming. Dissertation topic: Soil moisture monitoring and modeling in Wyoming
4. Clay Buchanan, PhD student, Ecosystem Science and Management / PIE, University of Wyoming. Dissertation topic: Elk response to land management changes in NE Wyoming

5. Eric Wald, PhD student, Ecosystem Science and Management, University of Wyoming. Dissertation topic: Ungulate management in Alaska.
6. Victoria Zero, MS student, Ecosystem Science and Management, University of Wyoming. Thesis topic: Amphibian habitat and relationship to beaver pond management
7. Erin Bast, MS student, Ecosystem Science and Management, University of Wyoming. Thesis topic: Relationship of beavers to nutrient cycling
8. Eben Johnson, MS student. Zoology and Physiology, University of Wyoming. Thesis topic: Understanding androgynous fish in a Wyoming stream.
9. Jennifer McHarge, MS student, Geology and Geophysics Department, University of Wyoming. Thesis topic: Stream channel morphology and evolution in ancient basins.
10. James Stafford, MA student, Department of Geography, University of Wyoming. Thesis topic: Channel morphology and response to large flows
11. John Stanek, MS student, Zoology and Physiology Department, University of Wyoming. Thesis topic: Habitat requirements for mountain birds in Colorado.
12. Barbara Jessup, MS student, Department of Geology & Geophysics. Thesis topic: Using isotopes to quantify soil production and erosion rates in the Sierra Nevada Range.
13. Joseph Graly, PhD student, Department of Geology & Geophysics. Dissertation topic: Fate of water under the Greenland ice sheet
14. Tae J Song, PhD student, Department of Civil and Architectural Engineering, University of Wyoming / WRESE PhD Program in Hydrology. Dissertation topic: Impact of climate change on hydrologic response in the Green River basin.
15. Daniel Gibson-Reinemer, PhD student, Program in Ecology. Thesis topic: Forecasting impacts of climate change on water temperatures: implications for fish habitat stability and change.
16. Leticia Varelas, PhD student, Ecosystem Science and Management, University of Wyoming. Thesis topic: Economic modeling of livestock management
17. Justin Clapp, MS student, Ecosystem Science and Management, University of Wyoming. Thesis topic: Resource selection of bighorn sheep
18. Heather Rogers, PhD student, Geology & Geophysics, University of Wyoming. Thesis topic: erosion rates and controls in the Sierra Nevada Mountains.

Service

Manuscript Referee

1. Water Management (2010)
2. Journal of Land Degradation and Development (2010)
3. North American Journal of Fisheries Management (2010)
4. Journal of the American Water Resources Association (2003-2004, 2006-2008)
5. Lakes and Reservoirs: Research and Management (2008-2010)
6. Journal of Hydrology (2007)
7. Journal of Environmental Management (2007, 2010)

8. Journal of Advanced Science and Technology (2007)
9. International Journal of Health Geographics (2007)
10. Science of the Total Environment (2006)
11. Forest Biometry, Modelling and Information Sciences (2006)
12. Photogrammetry and Remote Sensing (2003 – 2005)
13. USDA ARS internal review (2002 – 2005)
14. Journal of Environmental Modeling and Software (2003)
15. WHO Guidelines for Drinking Water Quality (2003)

Grants Review

1. US EPA Advancing Public Health Protection through Water Infrastructure Sustainability (G09F1 & F2) (2010)
2. NASA Space Grant – Wyoming grants review (2010)
3. Wyoming Agriculture Experiment Station International Travel Grants (2010)
4. Wyoming Agriculture Experiment Station Lang Fellowship (2010)
5. US Department of Defense Strategic Environmental Research and Development Program (SERDP) competitive grants program (2006)
6. National Science Foundation, Geomorphology and Land-use Dynamics Division (2006)
7. Wellstone Trust (2006)
8. Agricultural Experiment Station Competitive Grants review Board (2004-2005, 2007)

University and State Committees

1. Chair, PhD Program in Water Resources Science and Engineering (2009-)
2. Chair, MS Program in Water Resources (2010 -)
3. Ecosystem Science & Management Graduate Student Committee (2011-)
4. Ecosystem Science & Management Graduate Student Assessment ad hoc Committee (2011)
5. Ecosystem Science & Management Assessment Committee (2011 -)
6. Search Committee Chair: Ecosystem Science & Management Post-Doct Research Scientist (2012)
7. Search Committee Chair: Ecosystem Science and Management Lab Technician III to run the Surface and Subsurface Hydrology Lab (2012)
8. Search Committee Member: Civil & Architectural Engineering. Asst Professor, Hydrology (2012)
9. Search Committee Member: Civil & Architectural Engineering. Assoc Professor, Hydrology (2012)
10. Search Committee Member: Civil & Architectural Engineering. Post-Doc Research Scientist (2012)
11. Search Committee Member: Civil & Architectural Engineering. Research Scientist (2012)
12. Search Committee Member: WyCEHG Research Grant - Post Doctoral Research Scientists (2012)
13. Search Committee Member: Geology & Geophysics APRS hire in geophysics (2012)
14. Search committee member. Atmospheric Sciences Professor in Climate Change and Downscaling (2011-2012)
15. Advisory Board, Haub School of Environment and Natural Resources (2007-)

16. Member representing Ag Experiment Station, Stakeholder Input Working Group (2010)
17. Chair, Name Change Committee for Department of Renewable Resources (2010-2011)
18. Panelist, Task Force to Review Graduate Research Education at UW (2010)
19. Panelist, Task Force to Review Policies for Promotion from Associate to Full Professor (2010)
20. Department Communicator / Liaison, Department of Renewable Resources (2008-2009)
21. Advisory Board, Ellbogen Center for Teaching and Learning (2006-2009)
22. Department Head faculty search committee, Department of Renewable Resources (2008)
23. Spicer Distinguished Chair in Environmental Mediation, Haub School and Ruckelshaus Institute for Environment and Natural Resources (2008-2009)
24. Review committee of the COACHE (The Collaborative on Academic Careers in Higher Education) survey of pre-tenure faculty satisfaction at University of Wyoming, Office of Academic Affairs (2008)
25. Fulbright Review Committee, Office of International Programs, Univ. of Wyoming (2007-2008)
26. Hydraulic engineer faculty search committee, Department of Civil and Architectural Engineering (2007)
27. University of Wyoming Faculty Development Committee (2003-2006)
28. Geohydrologist search committee, Department of Geology and Geophysics (2005-2006)
29. Assoc Dean/Director, Agric. Experiment Station search committee, College of Agriculture (2005)
30. Action 8 committee on realignment of College of Agriculture Departments (2005)
31. Ecosystem modeler search committee, Botany Department (2005)
32. Ecoinformatics research associate search committee, Wyoming GIS Center (2005)
33. Water resources extension faculty search committee, Department of Renewable Resources (2004)
34. Hydraulic engineer faculty search committee, Department of Civil and Architectural Engineering (2004)
35. State of Wyoming GIS soils committee (2003-2004)
36. GIS faculty search committee, Department of Geography (2003)

Awards and Memberships

1. Nominated for the Lawrence Meeboer Teaching Award, Fall 2008
2. Awarded the USDA-ARS Technology Transfer Award for GIS-based hydrologic modeling, 2008
3. Kasumigaura Prize, The 12th World Lake Conference for the paper "Use of benthic macroinvertebrates as indicators of water quality in River Njoro, Kenya by Makoba et al."
4. North American Colleges and Teachers of Agriculture (NACTA) Teaching Award of Merit, 2007
5. UW College of Arts & Sciences Student Council "Thumbs Up Award" in recognition of outstanding positive contributions to the Univ. of Wyoming, 2007
6. Member, University of Wyoming Graduate Faculty
7. Member, American Water Resources Association
8. Member, American Geophysical Union
9. Member, The Geological Society of America

10. Member, American Society of Photogrammetry and Remote Sensing
11. USDA - ARS SWRC award for meritorious service, August, 2001
12. Certificate of Appreciation, USDA - ARS SWRC, August, 2001
13. USDA Secretary's Group Honor Award for Maintaining and Enhancing the Nation's Natural Resources and Environment as member of the Semi-Arid Land-Surface Atmosphere Team, June, 2001.
14. USDA - ARS SWRC award for meritorious service, February 2000
15. USDA - ARS SWRC award for meritorious service, October 1999
16. Outstanding Graduate Student Award for 1995, University of Arizona, School of Renewable Natural Resources, Watershed Management Program.