

Water Research Survey Profiles

Name		Department	
Alan Schroeder		Agricultural & Applied Economics	
Phone			
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Email			
conrad@uwyo.edu			
Subspecialty			
Natural Resources Law			
Current Research Description			
I have worked with both law and agricultural law students on their research dealing with water transfers, waste, coalbed methane water, and limitations on diversions created by the Endangered Species Act.			
Publications			

<i>Name</i>		<i>Department</i>	
Alfred Rodi		Atmospheric Science	
<i>Phone</i>			
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rodi@uwyo.edu			
<i>Subspecialty</i>			
Cloud physics			
<i>Current Research Description</i>			
University of Wyoming King Air research aircraft observations of clouds, etc.			
<i>Publications</i>			
Lawson, R.P., and A.R. Rodi, 1993: A new airborne thermometer for atmospheric and cloud physics research: Part 1: Design and preliminary flight tests. J. Atmos. Oceanic Tech. 9, 556-574.			
Brenquier, J.L., A.R. Rodi, G. Gordon, and P. Wechsler, 1993: Real-time detection of performance degradation of the Forward Scattering Spectrometer Probe. J. Atmos. Oceanic Tech, 10, 27-33.			
Mahoney, W., and A. R. Rodi, 1987: Aircraft measurements on microburst development from hydrometeor evaporation. J. Atmos. Sci., 44, 3037-3051.			

<i>Name</i>	<i>Department</i>	
Anne MacKinnon	ENR - adjunct	
<i>Phone</i>		
307	472	4930 ext.
<i>Email</i>		
amack@coffey.com		
<i>Subspecialty</i>		
law; journalism		
<i>Current Research Description</i>		
<ol style="list-style-type: none"> 1. Water law and administration (Wyoming): decision-making processes and regulation at State Engineer's Office (SEO), Board of Control, Superintendents' office 2. Water law evolution 3. CBM produced water: authorities, responsibilities of SEO 4. Governance in Wyo water management: opportunity for expanded input for non-traditional groups 5. Compensation for environmental services: possible programs for Wyoming water users 6. Instream flow: expansion to private rights holders 		
<i>Publications</i>		
<ol style="list-style-type: none"> 1) Demanding Beneficial Use: Opportunities and Obligations for Wyoming Regulators in Coalbed Methane (co-authored with Kate Fox) (accepted for publication in June 2006 Wyoming Law Review) 2) Historic and Future Challenges in Western Water Law: the Case of Wyoming (accepted for publication in June 2006 Wyoming Law Review) 3) Built 1900-Litigated CA 1990: Lessons from some large dams built in the rural United States. 1997.(Conference proceedings, International Conference on Large Scale Water Resources Development in Developing Countries: New Dimensions of Prospects and Problems, Kathmandu, Nepal, October 1997) 		

<i>Name</i>		<i>Department</i>	
Bart Geerts		Atmospheric Sciences	
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geerts@uwyo.edu			
<i>Subspecialty</i>			
atmospheric science			
<i>Current Research Description</i>			
<p>Precipitation formation over mountains in Wyoming, using King Air and Wyoming Cloud Radar. It is well-accepted that a definitive test of the viability of cloud seeding to enhance snowfall by having seeded plumes scanned by cloud radar. Such test is feasible with our current equipment, but at this time we have no funding for it. We do have a WWDC/USGS grant to study orographic precipitation enhancement in natural (unseeded) conditions.</p>			
<i>Publications</i>			
None at this time. Another proposal is in preparation, so this is a new, long-term development.			

<i>Name</i>	<i>Department</i>	
Benito Chen	Math	
<i>Phone</i>		
307	766	2280
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bchen@uwo.edu		
<i>Subspecialty</i>		
Mathematical modeling of flow in porous media		
<i>Current Research Description</i>		
Models of use of bacteria to control pollution in groundwater.		
<i>Publications</i>		
B. CHEN and H. KOJOUHAROV, 2004, Nonstandard Eulerian-lagrangian Methods for Multi-dimensional Reactive Transport Problems, Applied Numerical Mathematics, accepted.		
B. CHEN, Multiphase Flow in Porous Media, Aportaciones Matematicas, accepted.		
B. CHEN and H. KOJOUHAROV, 2003, Numerical Simulation of Dual-species Biofilms in Porous Media, Applied Numerical Mathematics, Vol. 47, pp. 377-389.		

<i>Name</i>		<i>Department</i>	
Brent Ewers		Botany	
<i>Phone</i>			
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beewers@uwyo.edu			
<i>Subspecialty</i>			
Ecohydrology			
<i>Current Research Description</i>			
My research quantifies how plant physiological controls over ecosystem water fluxes change over temporal scales from hours to decades and spatial scales from centimeters to kilometers			
<i>Publications</i>			
BE Ewers, ST Gower, B Bond-Lamberty, CK Wang. 2005. Effects of Stand Age and Tree Species Composition on Transpiration and Canopy Conductance of Boreal Forest. <i>Plant, Cell Environment</i> 28, 66-0678			
Mackay, DS, DE Ahl, BE Ewers, S Samanta, SN Burrows, and ST Gower. 2003. Physiological tradeoffs in the parameterization of a model of canopy transpiration. <i>Advances in Water Resources</i> , 26(2), 179-194.			
Ewers, BE, DS Mackay, ST Gower, DE Ahl, SN Burrows, S Samanta. 2002. Tree species effects on stand transpiration in northern Wisconsin. <i>Water Resources Research</i> , 38(7), 10.1029/2001WR000830.			

<i>Name</i>	<i>Department</i>	
Carol Frost	Geology	
<i>Phone</i>		
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frost@uwyo.edu		
<i>Subspecialty</i>		
radiogenic isotope geology		
<i>Current Research Description</i>		
Sr isotopic tracing of CBM-produced water in the Powder River Basin and elsewhere in Wyoming		
Pb and Sr isotope characteristics of groundwater in Wyoming and in Great Plains (Dakota) aquifer of Nebraska		
<i>Publications</i>		
Frost, C.D., and Toner, R.N., 2004, Strontium isotopic identification of water-rock interaction and groundwater mixing. <i>Ground Water</i> , v. 42, 418-432.		
Frost, C.D., Pearson, B.N., Ogle, K.M., Heffern, E.L., Lyman, R.M., 2002, Sr isotopic tracing of aquifer interactions in an area of coal and methane production, Powder River Basin, Wyoming. <i>Geology</i> , v. 30, p. 923-926.		
Toner, R.N., Frost, C.D., Chamberlain, K.R., 2003, Isotopic identification of natural vs. anthropogenic sources of Pb in Laramie basin groundwaters, Wyoming, USA. <i>Environmental Geology</i> , v. 43, p. 580-591.		

<i>Name</i>		<i>Department</i>	
Carrick M. Eggleston		Geology and Geophysics	
<i>Phone</i>			
307	766	6769	
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carrick@uwyo.edu			
<i>Subspecialty</i>			
Geochemistry, biogeoscience, nanogeoscience			
<i>Current Research Description</i>			
<p>My research group is heavily concentrated on the fundamental chemistry of mineral-water interaction, including mineral-microbe and mineral-protein interactions in aqueous media. The research applications include better understanding water quality (as opposed to water quantity!).</p>			
<i>Publications</i>			
<p>Eggleston C.M., Khare N., Lovelace D. (2006) Cytochrome c interaction with hematite (α-Fe₂O₃) surfaces. <i>Journal of Electron Spectroscopy and Related Phenomena</i> 150 220-227.</p> <p>Khare N., Eggleston C.M., Lovelace D.M. (2005) Sorption of mitochondrial cytochrome c to hematite surfaces: Implications for electron transfer. <i>Clays and Clay Minerals</i> 53, 564-571.</p> <p>Eggleston C.M., Stack A.G., Rosso K.M. and Bice A.M. (2004) Adatom Fe(III) on the hematite surface: Observation of a key reactive surface species. <i>Geochemical Transactions</i> 5(2), 33-40.</p>			

<i>Name</i>		<i>Department</i>	
David Bagley		Civil and Architectural Engineering	
<i>Phone</i>			
307	766	5591	ext.
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bagley@uwyo.edu			
<i>Subspecialty</i>			
Sustainable wastewater treatment			
<i>Current Research Description</i>			
<p>Wastewater is more than 99% water and should be considered an important water resource. My research has been developing technology to convert the organic constituents in wastewater into hydrogen and methane to provide renewable energy and also looking at applying technology to produce high quality water for reuse.</p>			
<i>Publications</i>			
<p>Comerton, A.M., Andrews, R.C., Bagley, D.M. 2005. Evaluation of an MBR-RO System to Produce High Quality Reuse Water: Microbial Control, DBP Formation and Nitrate. <i>Water Research</i>. 39:3982-3990.</p> <p>Kraemer, J.T. and D.M. Bagley. 2005. Continuous Fermentative Hydrogen Production Using a Two-Phase Reactor System with Recycle. <i>Environmental Science and Technology</i>, 39:3819-3825.</p> <p>Monteith, H., H.R. Sahely, H.L. MacLean, and D.M. Bagley. 2005. A Rational Procedure for Estimation of Greenhouse Gas Emissions from Municipal Wastewater Treatment Plants, <i>Water Environment Research</i>. 77:390-403</p>			

<i>Name</i>		<i>Department</i>	
David Williams		Renewable Resources	
<i>Phone</i>			
307	766	2494	ext.
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dgw@uwyo.edu			
<i>Subspecialty</i>			
Ecohydrology, plant water relations, isotope hydrology, climate change ecology			
<i>Current Research Description</i>			
Interactions and feedbacks between vegetation dynamics and hydrological processes in riparian and upland systems. Plant response to precipitation variability and change. Interactions between water and carbon cycles in arid and semiarid terrestrial ecosystems.			
<i>Publications</i>			
Williams, D.G. and R. Scott. Vegetation-hydrology interactions: Dynamics of riparian plant water use along the San Pedro River, Arizona. In Stromberg, J. and B. Tellman (eds) Riparian area conservation and ecology in a semi-arid Region: the San Pedro River example. (in press).			
Williams, D.G., J. Coltrain, M. Lott, *N. English, and J.R. Ehleringer. 2005. Oxygen isotopes in cellulose identify source water for archeological maize in the American Southwest. Journal of Archaeological Science 32:931-939.			
Williams, D.G., *W. Cable, *K. Hultine, J.C.B. Hoedjes, *E. Yopez, V. Simonneaux, S. Er-Raki, G. Boulet, H.A.R. de Bruin, A. Chehbouni, O.K. Hartogensis and F. Timouk. 2004. Components of evapotranspiration determined by stable isotope, sap flow and eddy covariance techniques. Agricultural and Forest Meteorology 125:241-258.			

<i>Name</i>		<i>Department</i>	
Diana Hulme		Ruckelshaus Institute - ENR	
<i>Phone</i>			
307	766	5354	ext.
<i>Email</i>			
dhulme@uwyo.edu			
<i>Subspecialty</i>			
Water policy			
<i>Current Research Description</i>			
<p>Recently produced a report for the Wyoming Governor's Office regarding management, treatment and use alternatives for water produced from coalbed natural gas production. Continuing to provide assistance to the Governor's Office related to water management and treatment issues in the Powder River Basin of Wyoming.</p> <p>The Wyoming Water Development Commission has provided funding to determine the impacts of water development projects on increased sprawl and/or economic development for two water development projects in northern Wyoming. (On-going)</p>			
<i>Publications</i>			
<p>Water Production from Coalbed Methane Development in Wyoming: A Summary of Quantity, Quality, and Management Options, Final Report for the Wyoming Governor's Office, December 2005.</p> <p>"Coalbed Methane Development in Wyoming's Powder River Basin," from Coalbed Methane Development in the Intermountain West, Natural Resources Law Center, University of Colorado School of Law, July 2002.</p>			

<i>Name</i>		<i>Department</i>	
Donald M. McLeod		AGEC	
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307	766	3116	ext.
<i>Email</i>			
dmcleod@uwyo.edu			
<i>Subspecialty</i>			
Economics, Policy, Planning			
<i>Current Research Description</i>			
Least Cost Water Conservation/Development Water Planning and Environmental Damage Mitigation Alternative Water Use Benefits Re-allocating Water with Temporary Leases			
<i>Publications</i>			
Peck, D., D. McLeod, J. Lovvorn and J. Hewlett. 2005. "Opportunity Costs of Water Leasing: Irrigation, Instream Flow, And Wetland Considerations in the Laramie Basin, Wyoming." Environmental Management. 34(6): 842-855.			
McLeod, D. "Confronting Land Fragmentation: Opportunities for Federal Research and Outreach Programming Partnerships" Solicited Article, December 2004, Western Economic Forum of the Western Agricultural Economics Association. 3(2): 12-18.			
Waller, A., D. McLeod and D. Taylor. 2004. "Conservation Opportunities for Securing			

<i>Name</i>		<i>Department</i>	
Dr. John F. Schabron		WRI	
<i>Phone</i>			
307	766	ext.	
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JFSchabr@uwyo.edu			
<i>Subspecialty</i>			
Analytical Chemistry			
<i>Current Research Description</i>			
<ol style="list-style-type: none"> 1. Development of new (patent pending) X-Wand device and ASTM method for measuring halogenated volatile organic compounds (HVOC) such as trichloroethylene (TCE) in water (or soil) down to 1 part per billion. 2. Developing new methods for measuring well tracers in water for EORI projects. 			
<i>Publications</i>			
<p>"Field Validation of the X-Wand Sensor Device for Screening Halogenated Volatile Organic Compound (HVOC) Contamination in Water, J.F. Schabron, S.S. Sorini, J.F. Rovani, Jr., and T.M. Bomstad, Report to U.S. Department of Defense, Concurrent Technologies Corp., 2005.</p> <p>"Development of a Standard Test Method for Screening Trichloroethylene (TCE)-Contaminated Soil Using a Heated Diode Sensor" S.S. Sorini, J.F. Schabron, J.F. Rovani, Jr., and T.M. Bomstad, ASTM International Research Report RR:D34-1017, November 2005.</p> <p>"Field Screening for Halogenated Volatile Organic Compounds: The New X-Wand™ HVOC Screening Device", J.F. Schabron, S.S. Sorini, and J.F. Rovani, Jr., WRI Final Report to DOE under Cooperative Agreement DE-FC21-98FT40322, 2005.</p>			

<i>Name</i>		<i>Department</i>	
E. Barbier		Economics & Finance	
<i>Phone</i>			
307	766	2358	ext.
<i>Email</i>			
ebarbier@uwyo.edu			
<i>Subspecialty</i>			
Economics			
<i>Current Research Description</i>			
<p>WWDC/USGS funded project, 2002-04, Water and Economic Growth in Wyoming: The persistence of drought conditions over much or all of the state of Wyoming in recent years has raised concern as to whether water availability relative to use may be limiting economic growth and development opportunities in certain regions or even state-wide. This research aims to address this issue by analyzing the relationship between relative water availability and economic growth across the counties and key water-using sectors in Wyoming, irrigated agriculture and other productive uses (municipal and industrial). Three broad results are anticipated: 1) An empirical analysis over time (i.e. annually) of a water-growth relationship for two key water-using sectors in Wyoming's economy: irrigated agriculture (i.e. the annual crop sector and fodder) and municipal and industrial users (for production). 2) Identification of possible future trade-offs and conflicts over water use by these two key production sectors in Wyoming. 3) Identification of those counties and sectors whose economic development is especially at risk from chronic water scarcity, as measured in terms of moderate and/or extreme hydrological stress conditions.</p>			
<i>Publications</i>			
<p>Barbier, E.B. 2004. "Water and Economic Growth." Economic Record 80: 1-16.</p> <p>Barbier, E.B. 2003. "Upstream Dams and Downstream Water Allocation - The Case of the Hadejia-Jama'are Floodplain, Northern Nigeria," Water Resources Research 39(11):1311-1319.</p> <p>Acharya, G. and Barbier, E.B. 2002. "Using Domestic Water Analysis to Value Groundwater Recharge in the Hadejia-Jama'are Floodplain, Northern Nigeria," American Journal of Agricultural Economics, 84(2):415-426.</p>			

<i>Name</i>		<i>Department</i>	
Eli J. Rodemaker		WyGISC	
<i>Phone</i>			
307	766	2794	ext.
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eli@uwyo.edu			
<i>Subspecialty</i>			
Remote Sensing, Vegetation and Landscape Ecology			
<i>Current Research Description</i>			
<p>Current: 1) Wyoming basins land cover, change detection and snow cover modeling, 2) Bighorn river geomorphic change analysis, 3) Peatlands type mapping/modeling, 4) Use of remotely sensed data; such as passive remote sensing (multispectral and thermal) and active remote sensing (Laser altimetry), to map and model terrain element distributions.</p> <p>Previous: Participated in modeling of urban climate and watershed characteristics, such as Soil-Vegetation-Atmosphere-Transfer models (NASA Project ATLANTA-Atlanta Land use ANalysis:Temperature and Air quality) and CITYgreen (created by AmericanForests) model for quantifying costs and benefits of urban ecological scenarios (eg urban forest benefits) including; stormwater runoff, air quality, summer energy savings, carbon storage and avoidance, and tree growth. Watershed change analyses quantifying land use and land cover change as derived from remotely sensed imagery to fecundity of bio-indicator species. Calibration of remotely sensed imagery with a 'bio-optical buoy' (in-situ sensor array) and derivation of sea surface temperatures and Chlorophyll(a) estimation in Willard Bay and Sequim Bay, Washington. Near-shore/littoral zone habitat/cover type mapping with remotely sensed imagery at sites, such as; Sequim Bay Washington, Great Salt Lake Utah, Ciudad del Carmen/Gulf of Mexico Mexico.</p>			
<i>Publications</i>			
<p>Gillies, R.R., J. Brim Box, J. Symanzik, and E. J. Rodemaker. Effects of Urbanization on the Aquatic Fauna of the Line Creek Watershed, Atlanta – A Satellite Perspective. Remote Sensing of Environment, Vol. 86 No. 3 Pgs. 411-422, 2003.</p> <p>Rodemaker, E.J., L.F. Hibler, M.C. Miller, and D.L. Woodruff. Remotely Sensed Boundary Initialization of a 3-dimensional Coastal Circulation Model. FY01 Laboratory Directed Research and Development Program Poster Session, September 19, 2001, USDOE Pacific Northwest National Laboratory, Richland, WA.</p> <p>Steinmaus, K.L., D.L. Woodruff, and E.J. Rodemaker. Littoral Warfare Data Extraction Using U.S. Department of Energy's Multispectral Thermal Imager (MTI). NIMA Final Project Report, PNNL-13468, Pacific Northwest National Laboratory, Marine Sciences Laboratory, March 2001, Sequim, WA.</p>			

<i>Name</i>		<i>Department</i>	
Frank J. Rahel		Zoology & Physiology	
<i>Phone</i>			
307	766	4212	ext.
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frahel@uwyo.edu			
<i>Subspecialty</i>			
Aquatic biology, fish ecology, fisheries management			
<i>Current Research Description</i>			
Habitat requirements of fish, especially as related to human alteration of aquatic environments. Sources and consequences on nonnative fish introductions.			
<i>Publications</i>			
Rahel, F.J. 2006. Biogeographic barriers, connectivity, and biotic homogenization: it's a small world after all. <i>Freshwater Biology</i> , In Press.			
Schrack, A.J. and F.J. Rahel. 2004. Movement patterns in inland cutthroat trout: management and conservation implications. <i>Canadian Journal of Fisheries and Aquatic Sciences</i> 61:1528-1537.			
Quist, M., F.J. Rahel, and W.A. Hubert. 2004. Hierarchical faunal filters: an approach to assessing effects of habitat and nonnative species on native fishes. <i>Ecology of Freshwater Fish</i> 14:1-16.			

<i>Name</i>		<i>Department</i>	
Fred L. Ogden		Civil & Arch. Engr., & Ruckelshaus Inst. Envir. and Nat. Resources	
<i>Phone</i>			
307	766	6171	ext.
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fogden@uwyo.edu			
<i>Subspecialty</i>			
Hydrologic model research, development, testing including field data collection and hydrologic applications of remote sensing.			
<i>Current Research Description</i>			
I am working with the U.S. Army Corps of Engineers, Engineering Research and Development Center to develop a two-dimensional distributed parameter hydrologic model. Together with my students I am collecting field data from diverse hydrologic settings, including Panama, Arizona, California, Colorado, Texas, Indiana, and Illinois to assist in model testing and refinement.			
<i>Publications</i>			
Niedzialek, J.M., and F.L. Ogden, 2004, Numerical Investigation of Saturated Source Area Behavior at the Small Catchment Scale, Adv. Water Resour., 27:925-936.			
Downer, C.W., and F.L. Ogden, 2004, Appropriate Vertical Discretization of Richards' Equation for Two-Dimensional Watershed-Scale Modelling, Hydrological Processes, 18:1-22.			
Sharif, H.O., F.L. Ogden, W.F. Krajewski, and M. Xue, 2004, Statistical analysis of radar-rainfall error propagation, J. Hydrometeorology, 5(1):199-212.			

<i>Name</i>		<i>Department</i>	
Frederico Furtado		Mathematics	
<i>Phone</i>			
307	766	4321	ext.
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furtado@uwyo.edu			
<i>Subspecialty</i>			
Hydrology, with emphasis on multiphase subsurface flow and transport.			
<i>Current Research Description</i>			
Investigation of large scale aspects of flow and transport which result from the interaction between the nonlinear physics of multiphase flow and geological heterogeneities.			
<i>Publications</i>			
(1) (with E. Abreu, J. Douglas Jr., D. Marchesin, and F. Pereira) "Transitional waves in three-phase flows in heterogeneous formations", in Computational Methods for Water Resources, W.G. Gray & G.F. Pinder eds., vol 1, 609-620, Elsevier, 2004.			
(2) (with V. Artus, B. Noetinger, and F. Pereira) "Stochastic analysis of two-phase immiscible flow in stratified porous media", Computational and Applied Mathematics, vol. 23, 153-172, 2004.			
(3) (with F. Pereira) "Crossover from nonlinearity controlled to heterogeneity controlled mixing in two-phase porous media flows", Computational Geosciences 7, 115-135, 2003.			

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Ginger Paige		Renewable Resources	
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307	766	2200	ext.
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gpaige@uwyo.edu			
<i>Subspecialty</i>			
Watershed Hydrology, watershed management, soil moisture measurement			
<i>Current Research Description</i>			
Using LiDAR technology for evaluating influence of scale and topography on watershed hydrology and modeling; measurement and modeling spatial variability of infiltration; the effects of fire, land use, and management practices on rangeland hydrologic and erosion processes; and measurement of soil moisture and hydraulic properties.			
<i>Publications</i>			
Paige, G.B., J.J. Stone, D.P. Guertin, and L.J. Lane. 2002. A strip model approach to parameterize a coupled Green-Ampt kinematic wave model. JAWRA 38(5): 1363-1378.			
Paige, G.B., J. J. Stone, and D. P. Guertin. 2005 Evaluation of post-wildfire runoff and erosion on semiarid ecological sites. Biodiversity and Management of the Madrean Archipelago II: Connecting Mountain Islands and Desert Seas, May 11-14, 2004, Tucson, AZ.			
Paige, G.B. and J.J. Stone. 2003. Infiltration and runoff: Point and plot scale. Renard, K.G., McElroy, S.A., Gburek, W.J., Canfield, H. E. and Scott, R. L., eds. First Interagency Conference on Research in the Watersheds, October 27-30, 2003. U.S. Department of Agriculture, Agricultural Research Service. pp. 186-191.			

<i>Name</i>		<i>Department</i>	
Glenn Tootle		Civil Eng	
<i>Phone</i>			
307	766	3299	ext.
<i>Email</i>			
tootleg@uwyo.edu			
<i>Subspecialty</i>			
Hydrology Climate			
<i>Current Research Description</i>			
Climatic (oceanic-atmospheric) influences on hydrology (streamflow, snow). Drought frequency, duration, magnitude. Reconstructing streamflow using tree-rings.			
<i>Publications</i>			
Tootle, G.A., and T.C. Piechota, 2006. Climate Variability, Water Supply, and Drought in Upper Colorado River Basin. In Climate Variability, Climate Change and Water Resources Engineering. Editors: J.D. Garbrecht and T.C. Piechota, American Society of Civil Engineers, pp. 132-142. ISBN 0-7844-0824-6.			
Tootle, G.A., T.C. Piechota, and A.K. Singh, 2005. Coupled Interdecadal and Interannual Oceanic / Atmospheric Variability and United States Streamflow. Water Resources Research, 41(W12408).			
Tootle, G.A., and T.C. Piechota, 2004. Suwannee River Long-Range Streamflow Forecasts based on Seasonal Climate Predictors. Journal of American Water Resources Association, 40(2), 523-532.			

<i>Name</i>		<i>Department</i>	
Greg Kerr		Office of Water Programs	
<i>Phone</i>			
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rrek@uwyo.edu			
<i>Subspecialty</i>			
Director/Office of Water Program's Advisor to the Wyoming Water Development Commission Advisor to the Wyoming Water Association			
<i>Current Research Description</i>			
Work directly with the Wyoming Water Development Commission to identify research needs of state and federal agencies regarding Wyoming's water resources, including funding under the National Institute of Water Resources (NIWR). Serve as a point of coordination for and to encourage water-related research activities by the University of Wyoming to address research needs.			
<i>Publications</i>			
See Office of Water Program's web site at: http://wweng.uwyo.edu/civil/research/wwrp/			

<i>Name</i>		<i>Department</i>	
J. Michael Daniels		Geography	
<i>Phone</i>			
307	766	2142	
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jmd@uwyo.edu			
<i>Subspecialty</i>			
fluvial geomorphology			
<i>Current Research Description</i>			
I study hydrologic variability and related geomorphic processes over time scales ranging from decades to several millennia using stratigraphic records from floodplains and measurements of overbank sedimentation rates.			
<i>Publications</i>			
Daniels, J.M. and J.C. Knox. 2005. Alluvial stratigraphic evidence for channel incision during the Medieval Warm Period on the central Great Plains, USA. <i>The Holocene</i> 15:736-747.			
Daniels, J.M. 2003. Floodplain aggradation and pedogenesis in a semiarid environment. <i>Geomorphology</i> , 56:225-242.			
Knox, J.C., and J.M. Daniels. 2002. Watershed scale and the stratigraphic record of large floods. In House, P.K., Webb, R.H., Baker, V.R., and Levish, D.R., eds. <i>Ancient Floods, Modern Hazards: Principles and Applications of Paleoflood Hydrology</i> . Water Science and Application Series, Vol.5. American Geophysical Union. 237-255.			

<i>Name</i>		<i>Department</i>	
J.J. Shinker		Geography	
<i>Phone</i>			
307	766	3320	ext.
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jshinker@uwyo.edu			
<i>Subspecialty</i>			
climatology, modern climate variability, paleoclimatology			
<i>Current Research Description</i>			
My current research focuses on understanding the temporal and spatial variability of surface feedbacks and atmospheric mechanisms associated with precipitation anomalies (e.g. drought). As well as understanding the variability in the timing of precipitation in the intermountain west.			
<i>Publications</i>			
Shinker, J. J., P. J. Bartlein, and B. N. Shuman, 2006. In Press. Synoptic and dynamic controls of North American mid-continental aridity. Quaternary Science Reviews.			
Minckley, T. A., P. J. Bartlein, and J. J. Shinker, 2004. Paleoecological response to climate change in the Great Basin since the last glacial maximum. In D.L. Jenkins, T.J. Connolly, and C.M. Aikens (Eds.) Early and Middle Holocene Archaeology of the Northern Great Basin, pp. 21-30. University of Oregon Anthropological Papers 62. Eugene.			
Birkland, K. W., C. J. Mock, and J. J. Shinker. 2001. Avalanche extremes and atmospheric circulation patterns, Annals of Glaciology, 32, p. 135-140.			

<i>Name</i>		<i>Department</i>	
Jeffrey D. Hamerlinck		WyGISC / Geography	
<i>Phone</i>			
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itasca@uwyo.edu			
<i>Subspecialty</i>			
water resource planning and management GIS applications in water resources			
<i>Current Research Description</i>			
None currently as an individual, but WyGISC has a large water-related research program that is doing work with watershed delineation mapping, the National Hydrography Dataset, and the Homeland Security/FEMA Flood Insurance Rate Map Modernization Program.			
<i>Publications</i>			
Berelson, W.L., P.A. Caffrey, and J.D. Hamerlinck. 2004. Mapping hydrologic units for the National Watershed Boundary Dataset. <i>Journal of the American Water Resources Association</i> , 40 (5): 1231-1246.			
Hamerlinck, J.D. and C.S. Arneson, eds. 1998. Wyoming ground water vulnerability assessment handbook, Vol. I, Background, model development, and aquifer sensitivity analysis. Laramie, Wyoming: Spatial Data and Visualization Center, University of Wyoming. SDVC Report 98-01-1			
Hamerlinck, J.D. 1998. Wyoming statewide water resources data inventory, Vol. XIV, Socioeconomic data sources – statewide by agency. Laramie, Wyoming: Wyoming Water Resources Center.			

Name		Department	
John E. Lloyd		Renewable Resources	
Phone			
307	766	2234	ext.
Email			
Subspecialty			
Entomology			
Current Research Description			
Ecology of mosquito vectors of West Nile Virus			
Publications			
<p>Denke, Patricia M. 2000. The distribution of Aedes (Diptera: Culicidae) species with regard to selected environmental variables, in the Northern Greater Yellowstone Ecosystem. Ph.D. Dissertation</p> <p>Gregory D. Johnson. 1978. Pre-Adult Development and Survival of Aedes mosquitoes Indigenous to Albany County, Wyoming, and other Selected Mosquitoes in Temperature Controlled Chambers and Semi-Natural Habitats. Ph.D. Dissertation</p> <p>Denke, P. M., J. E. Lloyd, and J. L. Littlefield. 1996. Elevational distribution of mosquitoes in a mountainous area of southeastern Wyoming. Journal of the American Mosquito Control Association. 12(1):8-16.</p> <p>Lloyd JE, Pennington RG. 1976. Mosquitoes collected in a CO2-baited CDC miniature light trap and a bovine-baited trap in Wyoming. Mosq News 36:457-459.</p> <p>Pennington RG, Lloyd JE. 1975. Mosquitoes captured in a bovine-baited trap in a Wyoming pasture subject to river and irrigation flooding. Mosq News 35:402-408.</p>			

<i>Name</i>		<i>Department</i>	
John T Tschirhart		Economics, 162 Ross Hall	
<i>Phone</i>			
307	766	2356	ext.
<i>Email</i>			
jtsch@uwyo.edu			
<i>Subspecialty</i>			
natural resource economics			
<i>Current Research Description</i>			
<p>1) ag pollution of estuaries and its effects on fisheries and other species</p> <p>2) harvesting of commercial fish species and its effects on other economic industries besides fishery</p>			
<i>Publications</i>			
<p>"Harvesting in an Eight Species Ecosystem," (with David Finnoff) Journal of Environmental Economics and Management, May 2003, 45 (3), 589-611.</p> <p>"Protecting an Endangered Species while Harvesting its Prey in a General Equilibrium Ecosystem Model," (with David Finnoff) Land Economics, May 2003, v. 79, 160-180.</p> <p>A Micro Optimization Framework for Evaluating the Tradeoffs between Nutrient Loading of Estuaries and Ecosystem Productivity, (with David Finnoff) forthcoming.</p>			

<i>Name</i>		<i>Department</i>	
Joseph S. Meyer		Zoology & Physiology	
<i>Phone</i>			
307	766	2017	ext.
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meyerj@uwyo.edu			
<i>Subspecialty</i>			
Aquatic biogeochemistry, aquatic toxicology			
<i>Current Research Description</i>			
Bioavailability of metals to aquatic organisms; influence of biofilm on diel cycling of metals in streams; effects of coalbed natural gas product water on aquatic organisms			
<i>Publications</i>			
Meyer, J.S., W.J. Adams, K.V. Brix, S.N. Luoma, D.R. Mount, W.A. Stubblefield and C.M. Wood (eds.). 2005. Toxicity of Dietborne Metals to Aquatic Organisms. SETAC Press, Pensacola, Florida, USA; Morris, J.M., A.M. Farag, D.M. Nimick and J.S. Meyer. 2005. Does biofilm contribute to diel cycling of Zn in High Ore Creek, Montana? Biogeochemistry 76:233-259; Clearwater, S.J., B.A. Morris and J.S. Meyer. 2005. Potential effects of coalbed natural gas product waters on surface waters in the Powder River Basin, Wyoming. Wyoming State Geological Survey Public Information Circular 43:14-15.			

Name		Department	
K.J. Reddy		Renewable Resources	
Phone			
307	766	6658	ext.
Email			
katta@uwyo.edu			
Subspecialty			
Water Quality			
Current Research Description			
<p>Research program features both basic and applied aspects of natural resource and environmental quality and water quality issues. Current research investigations include: flue gas carbon dioxide (CO₂) sequestration process; arsenic removal technology for drinking water; evaluation of Best Management Practices (BMPs) to protect groundwater quality from non-point source pollution; development of beneficial uses for coalbed methane natural gas produced water; and assessment of water quality protocols to address TMDL (total maximum daily load) process.</p>			
Publications			
<p>1). Peel, J.W., K.J. Reddy, B.P. Sullivan, and J. Bowen. 2003. Electrocatlytic reduction of nitrate in water, Research Note. Water Research Journal. 37:2512-2519.</p> <p>2). Reddy, K.J., M.M. Patterson, J.D. Rodgers, R.E. Jackson, and B.L. Perryman. 2003. (Invited) Solubility of fluoride in semi arid environments. Book Chapter 13. In W.L. Kingery and H.M. Selim (eds) Geochemical and Hydrological Reactivity of Heavy Metals in Soils, CRC Press, Florida, pp329-347.</p> <p>3). Reddy, K.J., and Viswatej, A. 2005. A novel method to remove arsenate and arsenite from water. In Proceedings of 8th International Conference on Biogeochemistry of Trace Elements, Symposium on Arsenic in the Environment: Biology and Chemistry, April 3-7, 2005, Adelaide, Australia.</p>			

<i>Name</i>		<i>Department</i>	
Marjorie L. Brooks		Zoology and Physiology	
<i>Phone</i>			
307	766	4837	ext.
<i>Email</i>			
brook@uwyo.edu			
<i>Subspecialty</i>			
Biogeochemistry of aquatic ecosystems			
<i>Current Research Description</i>			
<p>I am interested in the synergistic effects of multiple environmental stressors such as trace metal contaminants, increased UV radiation, and climate warming that affect aquatic ecosystems. propagate through all organizational levels of aquatic ecosystems. Such effects propagate through all levels of ecosystem organization, providing opportunities to develop the integrative models needed to assess and predict important interactive effects of multiple stressors. For example, when invertebrates bioaccumulate metals above thresholds beyond which some species cannot regulate metal intake, it leads to impaired growth, reproduction, and survival that alter the structure of invertebrate communities in ways that should be predictable. In my work, I investigate the mechanisms by which multiple stressors alter stream ecosystems to develop models that consider the implications of human impacts for regulatory policy as well as ecological theory.</p>			
<i>Publications</i>			
<p>Brooks M. L., W. C. Clements, D. M. McKnight. 2006. Photochemical control of copper complexation by natural dissolved organic matter in the Colorado Rocky Mountains, USA. In review by Limnol. Oceanogr.</p> <p>Brooks, M. L., D. M. McKnight, and J. S. Meyer. 2006. Changes in copper-organic complexation during photooxidation of wetland and riverine dissolved organic matter. In review by Hydrobiologia.</p> <p>Brooks M. L., J. S. Meyer, and C. J. Boese. 2006. Toxicity of copper to larval Pimephales promelas in the presence of photodegraded natural dissolved organic matter. In review by Can. J. Fish. Aquat. Sci.</p>			

Name	Department	
Michael Urynowicz	Civil & Arch. Eng.	
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murynowi@uwyo.edu		
Subspecialty		
In situ remediation of contaminated soil and ground water systems, chemical oxidation processes for the degradation of chlorinated solvents in ground water, onsite and alternative wastewater treatment systems, polymer aided infiltration control, mitigation of coal bed methane produced water		
Current Research Description		
<p>Synthetic organic polymers are commonly used in water treatment applications to coagulate colloids and improve sedimentation and filtration performance. This same type of process may be useful to reduce seepage losses during water conveyance by sealing the unlined canal bottom. The study utilizes acrylamide, a widely used and generally safe polymer. Experiments include (1) Laboratory jar tests to determine the optimum coagulation/flocculation conditions including dosage, turbidity, pH, rapid mix and flocculation speeds, and particle genesis time (2) Column studies to determine seepage loss as a function of dosage, turbidity, mixing, sediment characteristics and time, and (3) Falling head permeameter field tests to determine the effectiveness of a polymer application to a real conveyance system.</p> <p>Dealing with large volumes of produced water in a cost effective manner is a challenge for the CBM industry. Currently, produced water is directly discharged into existing surface waters. The effect on watersheds has caused concern as surface disposal practices sometimes result in erosion or drowning of drainage draws and associated vegetation. In addition, this water also has high sodium absorption ratios (SAR) and the water is not suitable for irrigation. Because of problems associated with dewatering operations, an alternative membrane vacuum degassing method to recover the trapped methane is being investigated. This approach does not require dewatering the coal seam. In application, membrane curtains would be placed in contact with CBM fields.</p>		
Publications		
<p>Siegrist, R.L., K.S. Lowe, M.L. Crimi, and M.A. Urynowicz (2005). Quantifying PCE and TCE in DNAPL Source Zones: Effects of Sampling Methods Used for Intact Cores at Varied Contaminant Levels and Media Temperatures. J. Ground Water Monitoring and Remediation. Accepted for Publication: Spring 2006.</p> <p>Michael A. Urynowicz and Robert L. Siegrist. 2005. Interphase Mass Transfer during Chemical Oxidation of TCE DNAPL in an Aqueous System. Journal of Contaminant Hydrology, Volume 80, Issues 3-4, 93-106</p> <p>Urynowicz, M.A., W.C. Boyle, M.E. Bedessem, and S. Jin. Submitted January, 2006. The Effect of Recycle Ratio and Temperature on Nitrogen Removal in Recirculating Sand Filter-Upflow Anaerobic Systems. Journal of Environmental Quality.</p>		

<i>Name</i>		<i>Department</i>	
Neil Humphrey		GEOL	
<i>Phone</i>			
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<i>Email</i>			
neil@uwo.edu			
<i>Subspecialty</i>			
Hydrology, Fluvial systems, dynamics of cold regions water flow systems			
<i>Current Research Description</i>			
<ul style="list-style-type: none"> -glacial hydrology and the interaction between snow melt, climate and glacier motion -snow pack change under conditions of changing climate and the relation between changing climate and the runoff from the Greenland Ice sheet -geomorphic impacts of coal bed methane discharge waters on low order stream channels -anchor ice/sediment interactions in cold regions rivers -river erosion in the Himalaya 			
<i>Publications</i>			
<p>Harper, J. T., and Humphrey, N.F., 2003, High altitude Himalayan climate inferred from glacial ice flux: Geophysical Research Letters, 30, n. 14., HLS 3 1-4.</p> <p>Humphrey, N. F., and Konrad, S. K., 2000, River incision or diversion in response to bedrock uplift: Geology, 28, 43-46.</p> <p>Pfeffer, W.T., and Humphrey, N.F., 1998, Formation of ice layers by infiltration and refreezing of meltwater, Annals of Glac., V. 26, p 83-91.</p>			

<i>Name</i>		<i>Department</i>	
Patricia J. S. Colberg		Zoology and Physiology	
<i>Phone</i>			
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pczoo@uwyo.edu			
<i>Subspecialty</i>			
environmental microbiology, microbial ecology, biogeochemistry, geomicrobiology			
<i>Current Research Description</i>			
biogeochemical cycling of iron in alpine lakes, geomicrobial immobilization of heavy metals in sediments/groundwater, mineral-microbe and mineral-protein interactions in aqueous media			
<i>Publications</i>			
Colberg, P. J. S., N. G. Swoboda-Colberg, B. Sulzberger, and K. W. Hanselmann. Geomicrobiology: Linking photochemical and microbial processes in cold alpine lakes with an emphasis on iron cycling (in preparation).			
Jin, S., J. I. Drever, and P. J. S. Colberg. Effects of copper on bacterial sulfate reduction in metal-contaminated and metal-free sediments (under review).			
Markwiese, J. T., and P. J. S. Colberg. 2000. Bacterial reduction of copper-contaminated sediments: Copper toxicity and the interaction between fermentative and Fe(III)-reducing bacteria. Archiv. Environ. Toxicol. Chem. 38:139-146.			

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Paul Caffrey			
Phone			
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caffrey@uwyo.edu			
Subspecialty			
Geographic Information Systems (Geo-hydro)			
Current Research Description			
<p>(1) GIS data creation for high resolution National seamless datasets, the 1:24,000 scale Watershed Boundary Dataset (WBD) and 1:24,000 National Hydrography Dataset (NHD). This work also involves the update, maintenance, and enhancement of these datasets.</p> <p>(2) Map Modernization Management Support (3MS) for the Wyoming Office of Homeland Security (WOHS) in support of the FEMA Multi-Hazard Flood Modernization Program to update and convert the paper Flood Insurance Rate Maps (FIRMs) to updated Digital Flood Insurance Rate Maps (DFIRMs) for Wyoming. Roles and activities involved are to perform mapping needs assessment, community level outreach and coordination on scoping activities and mapping projects between the WOSH, FEMA, and private contractors. FEMA Map Modernization program</p> <p>(3) APD NEPA Analysis Toolkit project to assist the BLM in utilizing spatially distributed models to better manage for the cumulative impacts of CBM development in Wyoming. This 3-phase is a collaborative research and development project with WyGIS and the Department of Renewable Resources, Scott Miller, to develop and enhance modeling tools to assist in streamlining the coal bed methane (CBM) gas Application for Permit to Drill (APD) process. Coordination and technological transfer through extension are ongoing and needed to train and solicit feedback from resource managers.</p>			
Publications			
<p>McKinstry, M. C., P. Caffrey, and S. H. Anderson. 2000. The Importance of Beaver to Wetland Habitats and Waterfowl in Wyoming. Pages 95-100 in P. J. Wiggington and R. Beschta (eds.) Riparian Ecology and Management in Multi-Land Use Watersheds. American Water Resources Association. Middleburg, VA.</p> <p>Berelson, Wendy L., P.A Caffrey and J.D. Hamerlinck. 2004. Developing the national Watershed Boundary Dataset: The Wyoming case study. Journal of the American Water Resources Association, (refereed)</p> <p>Berelson, W.L., P.A. Caffrey and J.D. Hamerlinck, 2001. Delineating Watersheds in Wyoming: A Semi-automated Approach. In Proceedings of the Twenty-First Annual ESRI User Conference, San Diego, CA, August 2001.</p>			

<i>Name</i>		<i>Department</i>	
Quentin Skinner		Renewable Resources	
<i>Phone</i>			
307	766	4139	ext.
<i>Email</i>			
<i>Subspecialty</i>			
Watershed Management, Range Management, Riparian Zone Ecology, Water Quality			
<i>Current Research Description</i>			
Long term assessment of riparian zone condition Education of range and watershed grasses Assessment and interpretation of Wyoming's water quality			
<i>Publications</i>			
Thorne, M.S., P.J. Meiman, Q.D. Skinner, M.A. Smith, and J.D. Dodd. 2005. Clipping frequency affects canopy volume and biomass production in Planeleaf willow (<i>Salix planifolia</i> var. <i>planifolia</i> Pursh) Rangeland Ecology and Management 58:1:41-50.			
Ellison, C.A., Skinner, Q.D., Retty, K.J. (In press February 2006.). Patterns of Discharge and Suspended Sediment Concentration in a Cold-Desert Stream. Journal of the American Water Resources Association: Special Riparian Issue.			
Patz, M.J., K.J. Reedy, and Q.D. Skinner. In press: 2006. Trace elements in coalbed methane produced water interacting with semi-arid ephemeral stream channels, Journal of Air, Soil, and Water Pollution.			
Skinner, Q.D., K.K. Crane, J.G. Hiller, and J.D. Rodgers. 2000. Wyoming Watersheds and Riparian Zones, B-1085, Cooperative Extension Service, Agriculture Resource Center, University of Wyoming, Laramie, Wyoming. 82071. 112pp.			

<i>Name</i>		<i>Department</i>	
Reed D. Benson		College of Law	
<i>Phone</i>			
307	766	6107	ext.
<i>Email</i>			
rdbenson@uwyo.edu			
<i>Subspecialty</i>			
Water rights and environmental law--especially the relationship of these two areas			
<i>Current Research Description</i>			
I research legal and policy issues relating to the management of water resources, especially in the West, with a major focus on the environmental dimensions of water use			
<i>Publications</i>			
Pollution Without Solution: Flow Impairment Problems under Clean Water Act Section 303, 24 Stanford Environmental Law Journal 199 (2005)			
"The Supreme Court of Science" Speaks on Water Rights: The National Academy of Sciences' Columbia River Report and its Water Policy Implications, 35 Environmental Law 85 (2005)			
So Much Conflict, Yet So Much in Common: Considering the Similarities between Western Water Law and the Endangered Species Act, 44 Natural Resources Journal 29 (2004)			

<i>Name</i>	<i>Department</i>	
Robert	Hall	
<i>Phone</i>		
307	766	2877 ext.
<i>Email</i>		
bhall@uwyo.edu		
<i>Subspecialty</i>		
Stream and river ecology		
<i>Current Research Description</i>		
<p>My research focuses on three areas addressing ecosystem function of streams and rivers</p> <ol style="list-style-type: none"> 1. Physical and biological controls on nitrogen cycling and transport in streams 2. Linking activities of animals to stream ecosystem function, with emphasis on non-native species. 3. Energy flow through stream food webs, ranging from small streams to a new project on the Colorado River 		
<i>Publications</i>		
<p>Hall, R. O., M. F. Dybdahl, and M. C. VanderLoop. In press. Extremely high secondary production of introduced snails in rivers. <i>Ecological Applications</i>.</p> <p>Hall, R. O., J. L. Tank, and M. F. Dybdahl. 2003. Exotic snails dominate nitrogen cycling in a highly productive stream. <i>Frontiers in Ecology and the Environment</i>. 1:407-411.</p> <p>Hall, R. O., and J. L. Tank. 2003. Ecosystem metabolism controls nitrogen uptake in streams in Grand Teton National Park, Wyoming. <i>Limnology and Oceanography</i> 48: 1120-1128.</p>		

<i>Name</i>		<i>Department</i>	
Sarah Strauss		Anthropology	
<i>Phone</i>			
307	766	5310	ext.
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strauss@uwyo.edu			
<i>Subspecialty</i>			
cultural anthropology and public health			
please note that I am in Switzerland on sabbatical during academic year 2005-06.			
<i>Current Research Description</i>			
<p>I have been engaged in an ethnographic study of the "Social Life of Water" in a Swiss alpine village; I have also conducted some pilot comparative research in Steamboat Springs, CO. My goals are to understand the ways that people have historically used and currently do use the various water resources that they have access to (in the case of my research site, these include glaciers, a variety of surface waters, thermal springs, and non-thermal springs), and how they have perceived and understood the relative value of these different resources. I am also focused on climate related concerns, in order to explore the potential impacts of climate change on these resources, so that appropriate decisions for the future can be made.</p>			
<i>Publications</i>			
<p>Strauss, S. and B.S. Orlove, Eds. (2003) Weather, Climate, and Culture. Edited volume on the Anthropology of Weather and Climate.</p> <p>Strauss, S. and C.M. Eggleston. Water Quality and the Qualities of Water in Leukerbad. To be submitted 2006.</p>			

<i>Name</i>		<i>Department</i>	
Scott N. Miller		Renewable Resources	
<i>Phone</i>			
307	766	4274	
<i>Email</i>			
snmiller@uwyo.edu			
<i>Subspecialty</i>			
Watershed Hydrology			
<i>Current Research Description</i>			
<ol style="list-style-type: none"> 1. Impact of coal bed methane product water discharge on stream hydrology to support BLM permitting 2. Risk of West Nile Virus resulting from the establishment of ponds from CBM development. Larval habitat assessment through remote sensing and GIS. 3. Watershed management of the Njoro watershed in Kenya. This is a rapidly changing watershed that feeds into a RAMSAR wetlands and national park and we are studying the impacts of change on surface and groundwater hydrology with links to ecological services. 4. Impact of land cover change and dam management on rivers contributing to Kruger National Park, South Africa. These rivers originate from outside the park and flow through a changing landscape. Concerns are centered on low flow times, including long-term drought and potential risk to riparian and other ecological services. 5. Use of ground-based LiDAR for channel morphology and determining better inputs to physically-based hydrologic models for simulation of runoff and erosion. 			
<i>Publications</i>			
Miller, S.N., D.J. Semmens, D.C., Goodrich, R, Miller, M. Hernandez, and W.G. Kepner, 2006. The Automated Geospatial Watershed Assessment Tool. Accepted by Journal of Environmental Modelling and Software.			
Zou, L., S.N. Miller, and E.T. Schmidtman, 2005. Mosquito larval habitat mapping using remote sensing and GIS: implications of coalbed methane development and the West Nile virus. Submitted to Journal of Medical Entomology.			
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 the American Water Resources Association 38(4): 1-15.			

<i>Name</i>		<i>Department</i>	
Song Jin		Zoology and Physiology	
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307	721	2404	ext.
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sjin@uwo.edu			
<i>Subspecialty</i>			
Environmental Biology and Biogeochemistry			
<i>Current Research Description</i>			
In situ and enhanced bioremediation of groundwater contaminants; Biological source treatment of acid mine drainage; Beneficial use of CBM produced water; Synthetic material in sorbing bioagents from water systems			
<i>Publications</i>			

<i>Name</i>	<i>Department</i>	
Stephen Earl Williams	Renewable Resources	
<i>Phone</i>		
307	766	2683 ext.
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sewms@uwoyo.edu		
<i>Subspecialty</i>		
Soil Science		
<i>Current Research Description</i>		
Examination of nitrogen in rainwater and soil water at high (at 3500 meters and above) elevations. Evaluation also includes impacts on soil microorganisms, plants and herbivores.		
<i>Publications</i>		
Stahl, P. D., G. E. Schuman, S. M. Frost and S. E. Williams. 1998. Interaction of arbuscular mycorrhiza and seedling age on water stress tolerance of <i>Artemisia tridentata</i> ssp. <i>wyomingensis</i> . SSSAJ 62:1309-1313.		
Busby, F.E., T.W. Box, J.C. Buckhouse, D.C. Clanton, B.C. Coggins, G.R. Evans, K.L. Gadzia, C.M. Jarecki, L.A. Joyce, D. Loper, D.L. Merkel, G.B. Ruyle, J.W. Thomas, J.H. Wald and S.E. Williams. 1994. Rangeland Health. National Research Council, Board on Agriculture. 180 pages.		
Palmer, K. M., N. L. Stanton, M. Ben-David, J. Mionczynski, and S. E. Williams. 2006. Pika (<i>Ochatona princeps</i>) decline: A Proposed Micronutrient Deficiency of Selenium. <i>Journal of Wildlife Diseases</i> (Submitted).		

<i>Name</i>		<i>Department</i>	
Stephen T Jackson		Botany	
<i>Phone</i>			
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jackson@uwyo.edu			
<i>Subspecialty</i>			
ecology, paleoecology, paleoclimatology, paleohydrology			
<i>Current Research Description</i>			
<p>Reconstruction of precipitation variability at annual to millennial scales in the central Rockies region and the Great Lakes-St. Lawrence region using a variety of methods (tree rings; studies of biomarkers, fossils, stable isotopes, etc. from bogs and lakes)</p> <p>Studies of vegetational responses to moisture variability at decadal to millennial scales using dendroecological and paleoecological approaches</p>			
<i>Publications</i>			
<p>Booth, R.K., M. Notaro, S.T. Jackson, & J.E. Kutzbach. 2006. Widespread drought episodes in the western Great Lakes region during the past 2000 years: geographic extent and potential mechanisms. Earth and Planetary Science Letters (in press).</p> <p>Booth, R.K., S.T. Jackson, S.L. Forman, J.E. Kutzbach, E.A. Bettis III, J. Kreig, & D.K. Wright. 2005. A severe centennial-scale drought in mid-continental North America 4200 years ago and apparent global linkages. The Holocene 15:321-328.</p> <p>Gray, S.T., C.L. Fastie, S.T. Jackson, and J.L. Betancourt. 2004. Tree-ring based reconstructions of precipitation in the Bighorn Basin, Wyoming since 1260 A.D. Journal of Climate 17:3855-3865.</p>			

<i>Name</i>		<i>Department</i>	
Sue Niezgoda		Civil and Architectural Engineering	
<i>Phone</i>			
307	766	3120	ext.
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<i>Subspecialty</i>			
Fluid dynamics, hydraulic engineering, water resources engineering, open channel flow, river engineering, bridge scour, sediment transport, stream restoration, hydrology, alluvial channel modeling, geomorphology, uncertainty, risk assessment			
<i>Current Research Description</i>			
<ol style="list-style-type: none"> 1) Laboratory investigations into bridge scour 2) Improving urban stream restoration: identifying critical form and processes relationships 3) Investigating the implication of using rigid channel structures in stream restoration 4) Cost-based risk assessment for selecting design alternatives for stream restoration 5) Monitoring the impacts of rigid structures in stream channel stability 6) Identifying an appropriate design discharge for stream restoration 7) Quantifying runoff from glacier melt 			
<i>Publications</i>			
<p>Niezgoda, S.L., and Johnson, P.A. 2005. A cost based risk assessment method for selecting stream restoration design alternatives. <i>Journal of Hydraulic Engineering</i>, ASCE, (in press).</p> <p>Niezgoda, S.L., and Johnson, P.A. 2005. Rigid structures in stream channel design: a case for alluvial channel modeling. <i>Journal of the American Water Resources Association</i> (tentatively accepted, under second review, 2005).</p> <p>Niezgoda, S.L., and Johnson, P.A. 2005. Improving the urban stream restoration effort: identifying critical relationships between form and processes. <i>Environmental Management</i>, 35(5): 579-592.</p>			

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307	766	2781	ext.
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tthurow@uwyo.edu			
<i>Subspecialty</i>			
ecohydrology			
<i>Current Research Description</i>			
Water yield and water quality associated with land management.			
<i>Publications</i>			
<p>Wilcox, B.P. and T.L. Thurow. 2006. Linkages between vegetation and water yield: Emerging issues in rangeland ecophysiology. <i>Rangeland Ecology and Management</i> 59:in press.</p> <p>Perotto-Baldivieso, H.L., T.L. Thurow, C.T. Smith, R.F. Fisher and X.B. Wu. 2004. GIS-based spatial analysis and modeling for landslide hazard assessment in steepplands, southern Honduras. <i>Agriculture, Ecosystems and Environment</i>. 103:165-174.</p> <p>Thurow, T.L. and C.A. Taylor 1999. The role of drought in range management. <i>Journal of Range Management</i> 52:413-419.</p> <p>Wu, X.B., T.L. Thurow and S.G. Whisenant. 2000. Fragmentation and changes in hydrologic function of tiger bush landscapes, south-west Niger. <i>Journal of Ecology</i>. 88:790-800</p>			

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<i>Publications</i>			
Quist, M. C., W. A. Hubert, M. Fowden, S. W. Wolff, and M. R. Bower. 2006. The Wyoming Habitat Assessment Methodology (WHAM): A systematic approach to evaluating watershed conditions and stream habitat. <i>Fisheries</i> 31(2):23-29.			
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