

# Report of Baylor University Geology Department, Faculty and Student Research Accomplishments, 2007-2008 calendar years

## 2007 Faculty Publications (underline = Baylor Geology Faculty) (\* = peer-reviewed journal article)

- \*\* (1) Allen, P.M., 2007, Watershed configuration and simulation of landscape processes with the SWAT Model: MODSIM07 International Congress on Modeling and Simulation, Proceedings Paper and talk presented at the University of Canterbury, Christchurch, New Zealand.
- \*(2) \*Amidu, S.A. and Dunbar, J.A., 2007, Geoelectric studies of seasonal wetting and drying of a Texas Vertisol: *Vadose Zone Journal*, v. 6, p. 511-523.
- \*\* (3) Atchley, S.C., and Carrelli, G., 2007, Reserves and opportunity assessment of the Devonian Leduc Formation at Bigstone and Fir Fields: Sponsored by Auriga Energy, Inc.
- \*(4) Cleveland, D.M., Atchley, S.C., and Nordt, L.C., 2007, Allo- and Autocyclic origins of paleosol-bearing alluvial successions: the Triassic (Norian-Rhaetian) Chinle strata, northern New Mexico: *Journal of Sedimentary Research*, v. 77, p. 909-924.
- \*(5) Cook, G. and Dunbar, J., 2007, Mapping an 18<sup>th</sup> Century Wichita Village Site, Revised manuscript accepted for inclusion in: Land of Our Ancestors: Studies in Protohistoric and Historic Wichita Cultures: *Plains Anthropologists*.
- \*(6) Driese, S.G., Orvis, K.H., Horn, S.P., Li, Z.-H., and Jennings, D.S., 2007, Paleosol evidence for Quaternary uplift and for climate and ecosystem changes in the Cordillera de Talamanca, Costa Rica: *Palaeogeography, Palaeoclimatology, Palaeoecology*, v. 248, p. 1-23.
- \*(7) Driese, S.G., Medaris, L.G., Ren, M., Runkel, A.C., and Langford, R.P., 2007, Differentiating pedogenesis from diagenesis in early terrestrial paleoweathering surfaces formed on granitic composition parent materials: *Journal of Geology*, v. 115, p. 387-406.
- \*(8) Duke, J.R., White, Allen, P.M., and Muttiah, R.S., 2007, Riparian influence on hyporheic zone formation downstream of a small impounded stream: *Hydrological Processes*, v. 21, p. 141-150.
- \*(9) Duke, J.R., White, J.D., Prochnow, S.J., Zygo, L., Allen, P.M., and Muttiah, R.S., 2007, The use of remote sensing and modeling to detect small dam influences of land-use changes along downstream riparian zones: *International Journal of Ecohydrology and Hydrobiology*, v. 7, p. 23-35.
- \*(10) Feng, Z.-D., Tang, L.Y., Ma, Y.Z., Zhai, X.W., 2007. Vegetation and associated environmental changes during the marine isotope stage 3 in the western part of the Chinese Loess Plateau. *Paleogeography Paleoclimatology Paleoecology*, 246: 278-291.
- \*(11) Feng, Z.-D., Zhai, X.W., Wang, W.G., Zhang, H.C., Ma, Y.Z., 2007. Eolian climatic variations during the past 30,000 years in the northern Mongolian Plateau, as indicated by geophysical, geochemical and geobotanical proxy data. *Paleogeography Paleoclimatology Paleoecology*, 245: 505-517.
- \*(12) Guo, L.L., Feng, Z.-D., Liu, L.Y., Li, X.Q., Wang, L.X., 2007. Holocene climatic and environmental changes

recorded in Baahar Nuur lake core in the Erdos Plateau, Inner Mongolia. *Chinese Scientific Bulletin*, 52(7): 959-966.

- \*(13) Miller, D.L., Mora, C.I., and **Driese, S.G.**, 2007, Isotopically concentric growth in large carbonate nodules in Vertisols: implications for climate and ecosystem assessments: *Geoderma*, v. 142, p. 104-111.
- \*(14) **Nordt, L.**, von Fischer, J., and Tieszen, L., 2007, Late Quaternary temperature record from buried soils of the North American Great Plains: *Geology* 35:159-162.
- \*(15) Scott J.T., Doyle R.D., Back J.A., **Dworkin S.I.**, 2007, The role of N<sub>2</sub> fixation in alleviating N limitation in wetland metaphyton: Enzymatic, isotopic, and elemental evidence: *Biogeochemistry*, v. 84, p. 207-218
- \*(16) Sun, A.Z., Ma, Y.Z., **Feng, Z.-D.**, Li, F. and Wu, H.N., 2007. Pollen-recorded climate changes between 13.0 and 7.0 C-14 ka BP in southern Ningxia, China. *Chinese Scientific Bulletin*, 52(8): 1080-1088.
- \*(17) Vulava, V.M., McKay, L.D., **Driese, S.G.**, Menn, F.-M., and Saylor, G.S., 2007, Distribution and transport of coal tar-derived PAHs in fine-grained residuum: *Chemosphere*, v. 68, p. 554-563.

### **2008-dated Geology Faculty Journal Publications as of Sept. 10, 2008**

- \*(1) **Allen, P.M.**, Arnold, J.G., and Skipwith, W., 2008, Prediction of channel degradation rates in urbanizing watersheds: *Hydrological Sciences Journal*, v. 53, p. 1013-1029.
- \*S(2) Amidu, S.A., and **Dunbar, J.A.**, 2008, An evaluation of the electrical resistivity method for water-reservoir salinity studies: *Geophysics*, v. 73, p. G39-G49.
- \*(3) **Atchley, S.C.**, Cleveland, D.M., and West, L.W., 2008, A case for renewed development of a mature gas field: the Devonian Swan Hills Formation at Kaybob South Field, Alberta, Canada: *Bulletin of Canadian Petroleum Geology*.
- \*S(4) Cleveland, D.M., **Nordt, L.C.**, and **Atchley, S.C.**, 2008, Paleosols, trace fossils, and precipitation estimates of the uppermost Triassic strata in northern New Mexico: *Palaeogeography Palaeoclimatology Palaeoecology*, v. 257, p. 421-444.
- \*S(5) Cleveland, D.M., **Nordt, L.C.**, **Dworkin, S.I.**, and **Atchley, S.C.**, in press, Pedogenic carbonate isotopes as evidence for extreme climate events and biotic crisis near the Triassic-Jurassic boundary: *Geological Society of America Bulletin*.
- \*(6) **Cronin, V.S.**, in press, Finding the mean and 95% confidence interval of a set of strike-and-dip or lineation data: *Environmental and Environmental and Engineering Geosciences*, v. 14, no. 3.
- \*(7) **Driese, S.G.**, Li, Z.-H., and McKay, L.D., 2008, Evidence for multiple, episodic, mid-Holocene Hypsithermal recorded in two soil profiles along an alluvial floodplain catena, southeastern Tennessee, USA: *Quaternary Research*, v. 69, p. 276-291.
- \*(8) **Driese, S.G.**, and Medaris, L.G., 2008, Evidence for biological and hydrological controls on the development of a Paleoproterozoic paleoweathering profile in the Baraboo Range, Wisconsin, USA: *Journal of Sedimentary Research*, v. 78, p. 443-457.

- \* (9) **Feng Z.D.**, Wang L.X., Ji Y.H., Guo L.L., and **Dworkin S.I.**, 2008, Climatic dependency of soil organic carbon isotopic composition along the S-N transect from 34N to 52N in central-east Asia, *Paleogeography, Paleoclimatology, Paleoecology*, v. 257, p. 335-343.
- \*S(10) Kahmann, J.A., and **Driese, S.G.**, 2008, Paleopedology and geochemistry of Late Mississippian (Chesterian) Pennington Formation paleosols at Pound Gap, Kentucky, USA: Implications for high-frequency climate variations: *Palaeogeography, Palaeoclimatology, Palaeoecology*, v. 259, p. 357-381.
- \*S(11) Kahmann, J.A., Seaman, J., III, and **Driese, S.G.**, 2008, Evaluating trace elements as paleoclimate indicators: multivariate statistical analysis of Late Mississippian Pennington Formation paleosols, Kentucky, USA: *Journal of Geology*, v. 116, p. 254-268.
- \* (12) Ma, Y.Z., Liu, K.-b., **Feng, Z.-D.**, Sun, A.Z., Wu, H.N. and Li, F., (in press), A survey of modern pollen assemblages and the association with the present bioclimatic zones in the Mongolian Plateau: *Journal of Biogeography* (in press).
- \* (13) **Nordt, L.C.**, (in press), Late Quaternary fluvial landscape evolution of the Rio Casas Grandes and San Pedro: Implications for the archaeological record, *In Late Archaic Cerros de Trincheras Sites of Chihuahua, Mexico*, R. Hard and R. Roney (eds.), University of Utah Press.
- \* (14) **Nordt, L.**, Von Fischer, J., Tieszen, L., and Tubbs, J., 2008, Coherent changes in relative C4 plant productivity and climate during the late Quaternary in the North American Great Plains: *Quaternary Science Reviews* (in press, available online).
- \* (15) **Nordt, L.C.**, and Wilding, L.P., (in press), Organic carbon sequestration potential of cultivated Vertisols in the Coast Prairie Major Land Resource Area of Texas: *Soil Science Society of America Special Publication*, Madison, WI.
- \* (16) \***Parker, D.F.**, and White, J.C., 2008, Large-scale silicic alkalic magmatism associated with the Buckhorn caldera, Trans-Pecos Texas, U.S.A.: Comparison with Pantelleria, Italy: *Bulletin of Volcanology*, v. 70, p. 403-415.
- \* (17) Shanti, C., **Allen, P.M.**, Muttiah, R.S., and Arnold, J., 2008, Regional estimation of base flow for the conterminous United States by hydrologic landscape regions: *Journal of Hydrology*, v. 351, p. 139-153.
- \*S(18) Shunk, A.J., **Driese, S.G.**, and **Dunbar, J.A.**, 2008, Late Tertiary paleoclimatic interpretation from lacustrine rhythmites in the Gray Fossil Site, northeastern Tennessee, USA: *Journal of Paleolimnology*, DOI 10.1007/s10933-008-9244-0.
- \* (19) Wang, H.B., Liu, L.Y., and **Feng, Z.-D.**, 2008, Spatio-temporal variations of Zr/Rb ratio in three last interglacial paleosol sections across Chinese Loess Plateau and their implications for climatic interpretations: *Chinese Science Bulletin*, v. 3, p. 1413-1422.

**Note: \* = peer-reviewed journal article; S = student-authored paper; underline = Geology Faculty members**

## Faculty and Student Presentations in 2007 (underline = Baylor Geology Faculty)

- (1) **Allen, P.M.**, 2007, 4th SWAT International Conference in DELFT, Holland at UNESCO, IHE. oral presentation. (Conference attended by 150 people from 34 nations). "Rapid Geomorphic Assessment of Erosion Volumes for SWAT Calibration in Large Watersheds"
- (2) **Allen, P.M.**, 2007, TRRMS Invited Speaker at Symposium on Urban Hydrology (abs) with Program "Anatomy of an Urban Stream" Stephen F. Austin University, Nacagdoches, Texas
- (3) Amidu, S.A., and **Dunbar, J.A.**, 2007, Integrating continuous resistivity profiling (CPR) into water-reservoir salinity studies – Numerical and field evaluation, (expanded abstract) SEG Technical Program Expanded Abstracts, p. 1172-1176, SEG Annual Meeting, San Antonio, Texas, September 23-28, 2007.
- (4) Amidu, S.A., and **Dunbar, J.A.**, 2007, Integrating continuous resistivity profiling (CPR) into water-reservoir salinity studies – Numerical and field evaluation, (abstract) Presentation at the Annual Meeting of the Association of Environmental and Engineering Geologists, Los Angeles, CA, September 27-30, 2007.
- (5) Amidu, S.A., and **Dunbar, J.A.**, 2007, Geophysical assessment of seasonal moisture dynamics in a Texas Vertisol (abstract): Annual Meeting of the GSA, Denver Co., October, 28-31, 2007.
- (6) **Bonem, R.M.**, 2007, Presentation for Geological Society of America Annual Meeting Workshop in Denver, CO, on undergraduate recruitment and retention: Cultivating a relationship.
- (7) Capello, S.V., and **Allen, P.M.**, 2007, Stream bank erosion assessment using cumulative tractive force and a submerged jet test device in urban clay streams, Texas: 2007 GSA Annual Meeting Abstracts with Programs in Denver, CO.
- (8) Cleveland, D.M., **Nordt, L.C.**, and **Atchley, S.C.**, 2007, Paleosols and pedogenic isotopes as evidence for extreme Late Triassic climatic events, Chinle Formation, northern New Mexico: 2007 GSA Annual Meeting Abstracts with Programs.
- (9) Crawford, S., Pylant, B., and **Allen, P.M.**, 2007, The three A's of stream restoration: Texas Section American Society of Civil Engineers, Abstracts and Proceedings.
- (10) **Cronin, V.S.**, Cleveland, D.M., and Prochnow, S.J., 2007, Preliminary use of the Seismo-Lineament Analysis Method (SLAM) to investigate seismogenic faulting in the Grand Canyon area, northern Arizona: EOS Transactions, American Geophysical Union, v. 88.
- (11) **Cronin, V.S.**, Millard, M.A., Seidman, L.E., and Bayliss, B.G., 2007, SLAM -- A method for finding seismogenic faults and its application to the central Santa Monica Mountains and northeastern Santa Monica Bay, California: Geological Society of America, Abstracts with Programs, v. 39, no. 6, p. 239.
- (12) **Cronin, V.S.**, 2007, A new method for recognizing seismogenic faults: AEG News, v. 50, no. 2.
- (13) Dixon, A.H., **Driese, S.G.**, and Jennings, D.S., 2007, Provenance and the early diagenetic alteration of volcanoclastic material incorporated in fluvial channel sandstone deposits, Morrison Fm. near Capitol Reef National Park, Utah: GSA Annual Meeting in Denver, CO.

- (14) **Driese, S.G.**, Multi-proxy approaches to interpreting time in the geologic record using soils: (talk presented at 44<sup>th</sup> Annual Soil Survey and Land Resource Workshop in College Station, TX, February 1, 2007).
- (15) **Driese, S.G.**, Medaris, L.G., Ren, M., Runkel, A.C., and Langford, R.P., 2007, Differentiating pedogenesis from diagenesis in early terrestrial paleoweathering surfaces formed on granitic composition parent materials: Geological Society of America (GSA) GSA Annual Meeting in Denver, CO.
- (16) **Dunbar, J.**, and **Cronin, V.S.**, 2007, Teaching geophysics using gizmos to give students hands-on experiences in introductory geoscience lab courses: Workshop on Teaching Geophysics in the 21st Century, University of Michigan field station, Jackson, Wyoming, August 2007.
- (17) **Dunbar, J. A.**, Electrical resistivity investigation of gas hydrate distribution in Mississippi Canyon Block 118, Gulf of Mexico: USDOE Project Kickoff Meeting, Morgantown, WV, January 9-11, 2007.
- (18) **Dunbar, J. A.**, Electrical resistivity investigation of gas hydrate distribution in Mississippi Canyon Block 118, Gulf of Mexico: US Department of Energy Project Review Meeting, Golden Co., September 18-21, 2007.
- (19) **Feng, Z.-D.**, Zhai, X.W., Wang, W., Ma, Y.Z. and Guo, L.L., 2007, Holocene climatic changes in the Mongolian Plateau: American Geophysical Union Fall Meeting, San Francisco, December 10-14.
- (20) **Feng, Z.-D.**, 2007, Late Quaternary Gobi dynamics and the relation to the East Asian monsoon: An International Symposium on Asian Monsoon under Global Warming, New Deli, India, December 20-24.
- (21) **Feng, Z.-D.**, 2007. Geographic differentiation of the last interglacial paleo-pedocomplex in the Chinese Loess Plateau: An International Symposium on Paleopedology and Landscape Evolution, Ladakh, India. September 11-14.
- (22) **Feng, Z.-D.**, 2007. Gobi Dynamics during the past 50,000 years in east-central Asia: Geological Society of America (GSA) Abstract and Presentation, Denver, Colorado, October 10-13.
- (23) **Feng, Z.-D.**, 2007. Holocene climate changes recorded in Baahar Nuur lake core in the Erdos Plateau of the Inner Mongolian Plateau. AAG Abstract and Presentation. San Francisco, California. April 17-21.
- (24) Geary, J.R., and **Atchley, S.C.**, 2007, Controls on hydrocarbon entrapment and reservoir distribution: the Pennsylvanian Oswego and Big Lime limestones in the Putnam Field area, Anadarko Basin, Oklahoma: Tulsa Geological Society, March 27<sup>th</sup> meeting.
- (25) Gotcher, C., **Atchley, S.C.**, and **Nordt, L.C.**, 2007, The Mid-Norian paleolandscape of the Newspaper Interval within the Blue Mesa Member of the Chinle Formation in Petrified Forest National Park, Arizona: 2007 GSA Annual Meeting Abstracts with Programs.
- (26) Jennings, D.S., and **Driese, S.G.**, 2007, Using comparative micromorphology and geochemistry to distinguish paleocatena relationships in barite-bearing paleosols: GSA Annual Meeting in Denver, CO.
- (27) Kahmann, J.A., Seaman, J., III, and **Driese, S.G.**, 2007, Multivariate statistical analysis of Late Mississippian paleosol trace element chemistry and application to interpreting pedogenic processes and climate through time: American Geophysical Union Meeting, San Francisco, CA.

- (28) Lindsay, R.D., Secrest, S.H., Campbell, R., Millard, M.A., and **Cronin, V.S.**, 2007, Can the Seismo-Lineament Analysis Method [SLAM] find the surface trace of faults known to have ruptured during large (and small) earthquakes? Geological Society of America, Abstracts with Programs, v. 39, no. 6, p. 239.
- (29) Millard, M.A., Campbell, R., Lindsay, R.D., Secrest, S.H., and **Cronin, V.S.**, 2007, Further tests of the seismo-lineament method for recognizing seismogenic faults at the ground surface: EOS Transactions, American Geophysical Union, v. 88, no. 23, abstract T41B-04.
- (30) **Nordt, L.C.**, 2007, Grassland evolution of the southern Great Plains of the U.S.A.: Society of American Archaeologists, Austin, TX (April) (invited).
- (31) **Parker, D.F.**, 2007, Laccoliths of the Musquiz Canyon area, Davis Mountains, West Texas (given at the Texas Academy of Science meeting in Waco, TX).
- (32) **Parker, D.F.**, and McMillan, N., 2007, Early onset of Rio Grande Rift magmatism in West Texas: Geological Society of America, Abstracts with programs, v. 39, no. 6, p. 511 (given at the National meeting in Denver, CO).
- (33) **Parker, D.F.**, and Ren, Minghua, 2007, Volcanic geology of the Cerro Castellan area, Big Bend National Park, Texas: Geological Society of America, Abstracts with Programs, v. 39, no.3, p. 2 (given in Lawrence, KS at the combined North-Central and South-Central sectional meeting).
- (34) Perry, A.F., **Parker, D.F.**, Hodges, F.N., and Ren, Minghua, 2007, Petrogenesis of the Cascade Head Basalt series, central Oregon Coast Range: Geological Society of America, Abstracts with Programs, v. 39, no.3, p. 2 (given in Lawrence, KS at the combined North-Central and South-Central sectional meeting).
- (35) Pfluger, S.L.M., **Yelderman, J.C., Jr.**, and Massengale, R.D., 2007, A Comparison of wastewater treatment methods: Effective removal of enteric bacteria: Poster, American Society of Microbiologists General Meeting.
- (36) Pfluger, S.L.M., **Yelderman, J.C., Jr.**, and Massengale, R.D., 2007, Bacterial removal effectiveness of onsite wastewater treatment systems: Presentation, American Society of Microbiologists Spring Meeting, Texas A & M University.
- (37) Sankey, J.T., **Atchley, S.**, **Nordt, L.**, **Dworkin, S.**, and **Driese, S.**, 2007, Dinosaurs and dirt: dinosaur paleoecology, paleosol stratigraphy, and isotope geochemistry from the upper Aguja Formation (Late Cretaceous: late Campanian - early Maastrichtian), Big Bend National Park, Texas: submitted to 67<sup>th</sup> Annual Meeting, Society of Vertebrate Paleontology, Austin, Texas. Journal of Vertebrate Paleontology Abstracts of Papers.
- (38) Seidman, L.E., Millard, M.A., Bayliss, B.G., and **Cronin, V.S.**, 2007, Earthquakes, geomorphic analysis and field work yield previously unmapped faults and a new understanding of active tectonics, Santa Monica Mountains, California: American Association of Petroleum Geologists Annual Meeting.
- (39) Shunk, A.J., Dunbar, J., and **Driese, S.G.**, 2007, Solar periodicities and a monsoon climate phase recorded at the latest Miocene to earliest Pliocene Gray Fossil Site, northeastern TN, USA: American Geophysical Union Meeting, Acapulco, Mexico.
- (40) Shunk, A.J., **Driese, S.G.**, Farlow, J.O., and Fluegeman, R., 2007, A rare Early Pliocene record of paleoclimate from north-central Indiana, USA: American Geophysical Union Meeting, San Francisco, CA.

(41) Weckbacher, J., Belden, J., and **Yelderman, J.C., Jr.**, 2007, Effects of recharge on groundwater below on-site wastewater drain fields as related to soil type: 44th Annual Soil Survey and Land Resource Workshop , A&M University, College Station, TX Abstracts, p. 4.

**Grants and Contracts AWARDED and in force in 2007 (note: these are not prorated on an annual basis) (underline = Baylor Geology Faculty)**

- (1) **Allen, P.M.**, and **Dunbar, J.A.**, 2005-2007, Contract with Federal Government on Lake Whitney salinity assessment (\$400,000).
- (2) **Atchley, S.M.**, 2007, General support towards sequence stratigraphic research, Auriga Energy Inc. (committed for 1Q 2007) \$25,000.
- (3) **Atchley, S.M.**, and **Nordt, L.C.**, 2006-2008, The interrelationship of sequence stratigraphy, paleoclimatology, and terrestrial ichnology in Triassic paleosol-bearing alluvial successions, Moenkopi and Chinle Formations, southwestern United States: American Chemical Society, Petroleum Research Fund, May 2006, \$79,707.
- (4) **Driese, S.G.**, 2007-2010, Co-PI with 4 University of Kansas (KU) Geology faculty members (Ludvigsen, G., Fowle, D.A., González, L.A., and Roberts, J.A., KU as lead institution), Collaborative Research: Actualistic calibration of the sphaerosiderite paleoclimate proxy: National Science Foundation, Geobiology and Low-temperature Geochemistry program (\$118,967 awarded to Baylor University for three years, commencing June 1, 2007).
- (5) **Dworkin, S.I.**, 2007-2008, The organic geochemistry of the Barnett shale: EnCana Oil and Gas (USA) Inc., December, 2007, \$120,000.
- (6) **Dworkin, S.I.**, 2007-2008, URC grant, \$3,000.
- (7) **Dunbar, J. A.**, 2006-2009, Electrical resistivity investigation of gas hydrate distribution in Mississippi Canyon Block 118, Gulf of Mexico: US Department of Energy, \$278,166 (October, 2006 to September 2009).
- (8) **Dunbar, J.A.**, and **Allen, P.M.**, 2006-2008, Sediment prevention through the repair of floodwater-retarding structures in McCulloch County, Texas: Texas State Soil and Water Conservation Board, \$28,573, June 2006 to May 2008.
- (9) **Dunbar, J.A.**, 2007-2008, Evaluation of sediment survey accuracy, Lake LBJ, Texas: Texas Water Development Board, \$30,000, April 2007 to March 2008.
- (10) **Dunbar, J.A.** and **Allen, P.M.**, 2007, Extension to sediment prevention through the repair of floodwater-retarding structures in McCulloch County, Texas: Texas State Soil and Water Conservation Board, \$30,000.
- (11) **Feng, Z.-D.**, 2006-2009, (Lead PI): Collaborative research (with Dr. K.-B Liu at LSU): Bioclimatic reconstruction of the past 50,000 years from eolian sequences in the westerlies-dominated Central Asia: National Science Foundation, Geography and Regional Sciences Program, (Feng's portion = \$150,000).
- (12) **Feng, Z.-D.**, 2007, Summer Faculty Research Incentive Program (FRIP) grant from Office of the Vice Provost for Research as 'seed' money to develop a new NSF grant for research in Kazakhstan, \$25,000.
- (13) **Yelderman, J.C., Jr.**, 2007, Passive nutrient reduction in subsurface wetlands (with Dr. Margaret Forbes), as an extension to Yelderman's previous grant: Texas Commission on Environmental Quality, \$159,000. (July 2007 to December 2008).

- (14) **Yelderman, J.C., Jr.**, 2007, Participated in a successful funding proposal to TCEQ entitled; Freshwater Wetland Functional Assessment Study (with Dr. Margaret Forbes): Texas Commission on Environmental Quality (Yelderman's share is \$10,000). (July 2007 to July 31, 2009).
- (15) **Yelderman, J.C., Jr.**, 2007, Analysis and Comparison of Microbial Reduction of Onsite Wastewater Treatment Systems (with Dr. Rene Massengale and Stacy Pfluger): Texas Commission on Environmental Quality, \$95,000. (September, 2007 to December, 2008).
- (16) **Yelderman, J.C., Jr.**, 2007, Texas Commission on Environmental Quality extension of the Standard 40 wetland study, \$10,000. (April –May of 2007).
- (17) **Yelderman, J.C., Jr.**, 2007, Extension of Phase II of the nutrient reduction study for OSSF aerobic systems: Murphy Cormier, Inc., \$19,800. (June 2007 to January 8, 2008).

**Grants, Contracts and Software Patents SUBMITTED in 2007, but not funded or pending (underline = Baylor Geology Faculty)**

- (1) **Atchley, S.C.**, 2007, Sequence stratigraphic controls on reservoir continuity and distribution within the Doe Creek Member at Valhalla Field: flow path delineation for EOR: Husky Energy Co., Canada (\$71,000) (1/14/08 to 10/01/08) AWARDED
- (2) **Driese, S.G.**, 2007, with Baylor University as the lead institution and S.P. Horn from the University of Tennessee as co-PI, Collaborative research: Differentiating paleoclimate and volcanogenic signatures in the Morrison Formation depositional basin, USA: submitted to NSF Sedimentary Geology and Paleobiology program (\$185,659 requested for two years, commencing June 1, 2007). NOT FUNDED.
- (3) **Driese, S.G.**, 2007, with the University of Tennessee-Knoxville as the lead institution (with Z.-H. Li as PI/PD, and C.I. Mora and S.P. Horn as co-PIs), Collaborative research: Pleistocene-Holocene climate variability of the southern Appalachian region, southeastern U.S.: submitted to NSF Sedimentary Geology and Paleobiology program (\$56,794 requested for three years, commencing June 1, 2008). NOT FUNDED.
- (4) **Dunbar, J.A., Allen, P.M.**, White, J., and Prochnow, S., 2007, Impact of floodwater retarding structures and stock tanks on the water supply reservoirs of Texas: Texas Water Development Board, \$93,052. NOT FUNDED.
- (5) **Dworkin, S.I.**, with R. Doyle (Biology), **Z. Feng** (Geology), **S.G. Driese**, R.S. King (Biology) MRI: Acquisition of a stable isotope mass spectrometer for paleoclimate and ecology research and training: submitted to NSF Major Research Instrumentation (MRI) program (\$342,185 for one year, commencing July 1, 2007). NOT FUNDED.
- (6) **Nordt, L.C.**, 2007, Late Pleistocene adaptations and behavioral transformations in the South African Highveld Grassland. Co-Principal investigators Britt Bousman and David Brink; L. Nordt is a paid collaborator PENDING.
- (7) **Parker, D.F.**, 2007, Integration of Trans Pecos Magmatic Province with the Rio Grande Rift and discrimination of crustal contamination effects within rift series: submitted to NSF Petrology and High-Temperature Geochemistry program (\$65,879 requested for two years). NOT FUNDED.

- (8) **Yelderman, J.C., Jr.**, 2007, Participated (groundwater contribution) in a funding proposal for the CITRO Megaproject entitled Diversification: Ecological, Social, and Economical Alternatives for Farmers in the Tropics. The study involved evaluating the effects of changing agricultural practices in two watersheds in the State of Veracruz, Mexico. Yelderman portion is \$50,000. PENDING.
- (9) **Yelderman, J.C., Jr.**, 2007, Participated as Director of the Wastewater Research Program in a cooperative agreement (TCEQ, Whitney, Baylor) and a funding proposal to WERF for research comparing subsurface and surface wetlands as additions to a municipal pond treatment system Whitney, Texas (\$50,000). NOT FUNDED.

### **Grants, Contracts and Software Patents SUBMITTED in 2008 and pending (underline = Baylor Geology Faculty)**

- (1) **Cronin, V.A.**, 2008, Technology assistance with implementation and operation of transportable array element of USArray and EarthScope: submitted to National Sciences Foundation, IRIS program (\$32,380) (03/01/08 to 09/30/08) FUNDED.
- (2) **Feng, Z.-D.**, 2008, Collaborative Research: Reconstructing the Temporal and Spatial Patterns of MIS 3 Bioclimatic Changes from Eolian and Lacustrine Sequences in the Chinese Loess Plateau: National Science Foundation, Earth Sciences, Sedimentary Geology and Paleobiology program (\$185,750) (07/01/08 to 06/30/10) PENDING
- (3) **Feng, Z.-D.**, 2008, Collaborative Research: Mid-Holocene Bioclimatic Changes in the Central Plain of China and Their Cultural Implications: National Science Foundation, SEB: Geography and Regional Science (\$254,270) (07/01/08 to 06/30/11) PENDING
- (4) **Feng, Z.-D.**, 2008, High-Resolution Reconstruction of Holocene Bioclimatic Changes in Central Asian Arid Zone: National Science Foundation Paleo Perspectives on Climate Change (P2C2) program (\$507,428) (07/01/08 to 06/30/11) PENDING
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