

Report of Baylor University Geology Department, Faculty and Student Research Accomplishments, 2008-2009 calendar years (draft 03-18-2009)

2008 Faculty Publications (underline = Baylor Geology Faculty) (* = peer-reviewed journal article) (S = Geology Ph.D. student first-authored publication)

- * (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*, v. 56, p. 165-190.
- (4) **Atchley, S.C.**, Ball, N., and Hunt, L., 2008, Geologic field study of the Late Cretaceous Doe Creek Member of the Kaskapau Formation at Valhalla Field, Alberta: proprietary report sponsored by Husky Energy, Canada.
- *S (5) 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 (6) Cleveland, D.M., **Nordt, L.C.**, **Dworkin, S.I.**, and **Atchley, S.C.**, 2008, Pedogenic carbonate isotopes as evidence for extreme climatic events preceding the Triassic-Jurassic boundary: Implications for the biotic crisis?: *Geological Society of America Bulletin*, v. 120, p. 1408-1415.
- *(7) Cook, G., and **Dunbar, J.**, 2008, Mapping an 18th century Wichita village site: *Plains Anthropologist*, v. 53, p. 487-502.
- *(8) **Cronin, V.S.**, 2008a, Finding the mean and 95 percent confidence interval of a set of strike-and-dip or lineation data: *Environmental & Engineering Geoscience*, v. 14, no. 2, p. 113-119.
- *(9) **Cronin, V.S.**, 2008b, Preface to the special issue in honor of Dr. James E. Slosson: *Environmental & Engineering Geoscience*, v. 14, no. 3, p. 147-150.
- (10) **Cronin, V.S.**, 2008c, Where is that chunk of crust going?: Workshop on Teaching Introductory Geology Courses in the 21st Century, Carleton and St. Olaf Colleges, Northfield, Minnesota. Peer-reviewed electronic document available at <http://serc.carleton.edu/NAGTWorkshops/intro/activities/23579.html>
- (11) **Cronin, V.S.**, 2008d, Incomprehensibly Small and Incomprehensibly Large: Workshop on Teaching Introductory Geology Courses in the 21st Century, Carleton and St. Olaf Colleges, Northfield, Minnesota. Peer-reviewed electronic document available at <http://serc.carleton.edu/NAGTWorkshops/intro/activities/23593.html>
- *(12) **Cronin, V.S.**, Millard, M., Seidman, L., and Bayliss, B., 2008, The seismo-lineament analysis method (SLAM) -- A reconnaissance tool to help find seismogenic faults: *Environmental & Engineering Geoscience*, v. 14, no. 3, p. 199-219.

- * (13) **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.
- * (14) **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.
- * (15) **Feng Z.D.**, Wang L.X., Ji Y.H., Guo L.L., and **Dworkin S.I.**, 2008, Climate dependency of soil organic carbon isotopic composition along the S-N transect from 32°N to 52°N in central-east Asia: *Paleogeography, Paleoclimatology, Paleoecology*, v. 257, p. 335-343.
- * (16) Gao, S., Liu, K., Stern, R., Keller, G.R., Hogan, J.P., **Pulliam, J.**, and Anthony, E., 2008, Characteristics of mantle fabrics beneath the south-central United States: Constraints from shear-wave splitting measurements, *Geosphere*, Vol. 4, No. 2 pp. 411–417, DOI: 10.1130/GES00159.1
- *S (17) 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 (18) 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.
- * (19) **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*, v. 27, p. 1600-1611.
- * (20) ***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.
- * (21) Santhi, C., **Allen, P.M.**, Muttiah, R.S., Arnold, J.G., and Tuppad, P., 2008, Regional estimation of baseflow for the coterminous United States by hydrologic landscape unit: *Journal of Hydrology*, v. 351, p. 139-153.
- * (22) 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.
- * (23) 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.

2009 (to March 27, 2009) Geology Faculty Publications (underline = Baylor Geology Faculty) (* = peer-reviewed journal article) (S = Geology Ph.D. student first-authored publication)

- * (1) Chen, C., **Lau B.L.T.**, Gaillard, J.-F., Packman A.I., 2009, Temporal evolution of pore geometry, fluid flow, and solute transport resulting from colloid deposition: *Water Resources Research*, doi:10.1029/2008WR007252,

in press. Available online 16 February 2009.

(2) Driese, S.G., 2009, Paleosols, pre-Quaternary, in Gornitz, V. (ed.), *Encyclopedia of Paleoclimatology and Ancient Environments*: New York, Kluwer Academic Publishers, p. 748-751.

* (3) 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).

* (4) 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.

* (5) Nordt, L.C., and Wilding, L.P., 2009, Organic carbon sequestration potential of cultivated Vertisols in the Coast Prairie Major Land Resource Area of Texas: *Soil Science Society of America Special Publication 57*, Madison, WI., p. 159-168.

*S (6) Shunk, A.J., Driese, S.G., and Dunbar, J.A., 2009, 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.

*S (7) Shunk, A.J., Driese, S.G., Farlow, J.O., Zavada, M., and Zobaa, M.K., 2009, Late Neogene paleoclimate and paleoenvironment reconstructions from the Pipe Creek Sinkhole, Indiana, USA: *Palaeogeography, Palaeoclimatology, Palaeoecology*, v. 274, p. 271-283.

(8) White, J.C., Parker, D.F., and Ren, M., 2009, The origin of trachyte and pantellerite from Pantelleria, Italy: Insights from thermodynamic modeling: *Journal of Volcanology and Geothermal Research*, v. 179, p. 33-55.

Faculty and Student Presentations and Invited Lectures in 2008 (underline = Baylor Geology Faculty) (S = Geology student first-authored)

Presentations:

(1) Allen, P.M., 2008, Taught Short Course on “*Applied Fluvial Geomorphology*” to Texas Section American Society of Civil Engineers, Austin Texas. (100 attendees).

S (2) Amidu S. A., J. A. Dunbar, and K. N. Potter, An integrated time-lapse hydrogeophysical characterization of seasonal soil moisture dynamics in a Texas Vertisol, (expanded abstract), Proceedings of the 21st Annual Meeting of the Environmental & Engineering Geophysical Society, Philadelphia, PA, April 6-10, 2008.

(3) Atchley, S.C., D. M. Cleveland, L. West, G. Carrelli, and T. Knight, 2008, The Swan Hills Formation at Kaybob South Field, Alberta: an example of remaining reserves potential within mature fields: 2008 Canadian Society of Petroleum Geology Annual Meeting, Abstracts with Programs.

S (4) Clapp, A.G., Yelderman, J.C., Jr., and Scheffe, B., 2008, Water and wastewater management in rural Costa Rica: 2008 GSA Annual Meeting, Abstracts with Programs, Houston, TX.

(5) Cronin, V.S., 2008, Where is that chunk of crust going?: Workshop on Teaching Introductory Geology Courses in the 21st Century, Carleton and St. Olaf Colleges, Northfield, Minnesota, July 2008. (note: presented twice at workshop: PowerPoint @ <http://serc.carleton.edu/NAGTWorkshops/intro08/earthscape.gps.data.ppt>.)

(6) Driese, S.G., and Nordt, L.C., 2008, Critical Zone studies of soils and weathering: Implications for interpreting climate and landscapes of the past: Overview: Invited talk for GSA Pardee Session at joint GSA-SSSA National Meeting in Houston, TX.

- (7) **Dunbar, J. A.**, S. A. Amidu, and P. M. Allen, Assessing salinity variation in Lake Whitney, Texas using continuous resistivity profiling, (expanded abstract), Proceeding of the 21st Annual Meeting of the Environmental & Engineering Geophysical Society, Philadelphia, PA, April 6-10, 2008.
- S (8) Estep, H. J., and **J. A. Dunbar**, Water reservoirs as a record of watershed and reservoir processes: A case example Lake Abilene, Texas, (expanded abstract), Proceeding of the 21st Annual Meeting of the Environmental & Engineering Geophysical Society, Philadelphia, PA, April 6-10, 2008.
- (9) Huérfano, V., **J. Pulliam**, U. ten Brink, A. Lopez-Venegas, C. von Hillebrandt-Andrade (2008), Earthquakes and Tectonics in the Sombrero Seismic Zone Constrained by Passive Ocean Bottom Seismographs: 18th Caribbean Geological Congress, Santo Domingo, DR, 24-28 March 2008.
- S (10) Keeton, G. I., **S.I. Dworkin**, **L.C. Nordt**, and **S.C. Atchley**, 2008, Grain size distribution and organic matter content from paleosols that span the Cretaceous-Tertiary boundary, Big Bend, Texas: 2008 GSA Annual Meeting, Abstracts with Programs, Houston, TX.
- (11) Lopez, A., U. ten Brink, **J. Pulliam**, 2008, Toward a Deeper Understanding of Northeastern Caribbean Tectonics with Continuously Operated GPS Sites and Ocean Bottom Seismometers: *Eos Trans. AGU*, 89(23), Joint Assembly Suppl., Abstract G31A-06.
- (12) **Nordt, L.C.**, and **Driese, S.G.**, 2008, Hydrogeological properties of a Vertisol climosequence along the Coast Prairie of Texas: 1st International Conference on Hydrogeology convened at Penn State University, July, 2008.
- (13) **Nordt, L.C.**, and **Driese, S.G.**, 2008, Geochemical trends along a modern Vertisol climosequence applied to vertic-paleosols as proxy for physical-chemical colloidal properties and pedogenic interpretations: Invited talk for GSA Pardee Session at joint GSA-SSSA National Meeting in Houston, TX.
- S (14) Potterton, T., **Yelderman, J.C., Jr.**, and Forbes, M., 2008, Porosity loss in subsurface-flow treatment wetlands: 2008 GSA Annual Meeting, Abstracts with Programs, Houston, TX.
- (15) **Pulliam, J.**, V. Huérfano, C. von Hillebrandt-Andrade, L. Odonel Gomez, and J. Payero, 2008, Three-dimensional Crustal Structure of the North American-Caribbean Plate Boundary in the Dominican Republic, 18th Caribbean Geological Congress, Santo Domingo, DR, 24-28 March 2008.
- (16) Sankey, J.T., **S. Atchley**, **L. Nordt**, **S. Dworkin**, **S. Driese**, 2008, Dinosaur and Paleosol Change across the Campanian-Maastrichtian (Late Cretaceous), Big Bend National Park, Texas. California Paleontology (Cal Paleo) Annual Meeting, California State University, Stanislaus, Turlock, California, April 19, 2008, PaleoBios, University of California Press.
- S (17) Seitz, J. A., **S.I. Dworkin**, **L.C. Nordt**, and **S.C. Atchley**, Temporal trends in mineral assemblages and abundances from paleosols that span the Cretaceous-Tertiary boundary, Big Bend, Texas: 2008 GSA Annual Meeting, Abstracts with Programs, Houston, TX.
- S (18) Shunk, A.J., **Driese, S.G.**, 2008, Multiple proxy evidence from paleosols for abrupt Late Neogene warming at the Gray Fossil site, northeastern TN, USA: joint GSA-SSSA National Meeting in Houston, TX.
- (19) Stern, R.J., E. Y. Anthony, S. S. Gao, K. L. Mickus, and **J. Pulliam** (2008). Progress Towards a Gulf of Mexico Passive Margin Experiment, Geological Society of America, South-Central Section - 42nd Annual Meeting (30 March - 1 April, 2008, Session 14: GIS, Remote Sensing, Geomorphology, and Tectonics, Abstract #14-5.
- S (20) Wegert, D.J. and **Parker, D.F.**, 2008, Petrogenesis of trachyandesite from the McDermott Formation, San Juan Basin, Colorado and New Mexico: Geological Society of America, Abstracts with programs, v.40, no. 6, p. 250.
- S (21) Westfield, I., **Dworkin, S.I.**, **Bonem, R.M.**, and Lane, E., 2008, Identification of sediment sources using geochemical fingerprinting at Pear Tree Bottom Reef, Runaway Bay, Jamaica: Presentation for International Coral Reef Symposium (July 11, 2008).
- (22) **Yelderman, J.C., Jr.**, and Byars, B., 2008, The use of GIS in a groundwater conservation district: 2008 GSA Annual Meeting, Abstracts with Programs, Houston, TX.

Other Invited Lectures:

- (1) **Allen, P.M.**, *Stream Erosion Research and Cities*, USDA-NRCS ARS, Temple, TX.
- (2) **Cronin, V.S.**, Participated (by invitation) in the Earth Science Literacy Initiative Workshop, 12-24 May 2008, funded by the National Science Foundation. The draft document that resulted is available at http://www.earthscienceliteracy.org/ESLI_Dec12.pdf.
- (3) **Driese, S.G.**, *Micromorphology of floodplain soils at the Buttermilk Creek Archaeological Site near Salado, Bell County, Texas*: talk presented at 45th Annual Soil Survey and Land Resource Workshop in College Station, TX, February 7, 2008.
- (4) **Driese, S.G.**, *Applications of soil micromorphology, pedology and geochemistry to interpreting a possible pre-Clovis (13-17 kyr) archaeological site at Buttermilk Creek, Bell County, Texas*: talk presented as 16th Kansas Geological Survey Stratigraphic Research Seminar in Lawrence, KS, November 11, 2008.
- (5) **Greene, D.M.**, *Terrestrial and Astronomical Influences on Climate Change*: Young Conservatives of Texas, Baylor University, April 23, 2008
- (6) **Pulliam, J.**, *Active Tectonics of the Northeast Caribbean*, Baylor University, Waco, TX, February 28, 2008.
- (7) **Pulliam, J.**, *Earthquakes and Seismology*, EarthScope Siting Workshop, Austin, TX, March 28, 2008.
- (8) **Pulliam, J.**, *Earthquakes and Seismology*, TexESS Revolution Teacher Workshop, UT Austin, Austin, TX, June 16, 2008.
- (9) **Pulliam, J.**, *The Rio Grande Rift: Geophysics and Seismology*, SIEDCAR Workshop, New Mexico Institute of Technology, Socorro, NM, June 28-30, 2008.
- (10) **Pulliam, J.**, *A Seismic Investigation of Edge-Driven Convection Associated with the Rio Grande Rift: My Summer Digging Holes in New Mexico*, Baylor Geology Department Brownbag Lecture, September 24, 2008.
- (11) **Pulliam, J.**, *The Cameroon Volcanic Line: What is it? What created it?*, Global Issues Lecture, Center for International Education, Baylor University, September 25, 2008.

Faculty and Student Presentations and Invited Lectures in 2009 (underline = Baylor Geology Faculty) (S = Geology student first-authored) INCOMPLETE

- (1) **Parker, D.F.**, McMillan, N.J., and White, J.C., 2009, Basement structures and Rio Grande Rift magmatism in West Texas: Geological Society of America, Abstracts with Programs, v. 41, no. 2, p. 4 (Given at South-Central GSA Meeting in Dallas, TX).

Grants and Contracts AWARDED and in force in 2008 (note: these are not prorated on an annual basis) (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).
- (2) **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.
- (3) **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.
- (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) **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).
- (7) **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.
- (8) **Dunbar, J.A.**, 2007-2008, Evaluation of sediment survey accuracy, Lake LBJ, Texas: Texas Water Development Board, \$30,000, April 2007 to March 2008.
- (9) **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).
- (10) **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.
- (11) **Pulliam, J.**, Collaborative Research: Acquisition of Equipment to Upgrade and Expand the AfricaArray Seismic Network: PI: Jay Pulliam, Co-Investigators: Stephen P. Grand, Luc Lavier, Ian Norton (UT Austin), Andy Nyblade (Penn State) Funded by the National Science Foundation (Earth Sciences Division, Instrumentation and Facilities Program) Total amount funded: \$434,196 (\$99,698 to UT Austin—see note below). Note: This award is for equipment to complete the Africa Array seismic network, a network of broadband, three-component seismographs that spans the continent of Africa. \$100,000 was awarded by NSF to UT Austin and UT's Jackson School matched this award with \$99,698. I wrote a separate proposal to the Jackson School's Equipment Committee to obtain these matching funds (below). There is no funding for salaries, students, or research expenses and does not provide MTDC to UT Austin. The effort involved constitutes service to both the professional community and to the individual African nations that will benefit from the network's operations. The government of South Africa is largely underwriting the ongoing costs of operating the network.
- (12) **Pulliam, J.**, Africa Array: Infrastructure for Geophysics Research and Education: PI: Jay Pulliam, Co-Investigators: Stephen P. Grand, Luc Lavier, Ian Norton (UT Austin) Funded by the National Science Foundation (Earth Sciences Division, Instruments and Facilities Program), 10/1/2008 Total amount funded: \$99,698 in equipment matching funds (no overhead—see note above).
- (13) **Pulliam, J.**, SIEDCAR: Seismic Invigation of Edge Driven Convection Associated with the Rio Grande Rift PI: Jay Pulliam, Co-Investigator: Stephen P. Grand (UT Austin). Funded by the National Science Foundation (Earth Sciences Division, EarthScope Program), 2/1/2008. Total amount funded: \$482,029
- (14) **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).

- (15) **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).
- (16) **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).
- (17) **Yelderman, J.C., Jr.**, 2007, Texas Commission on Environmental Quality extension of the Standard 40 wetland study, \$10,000. (April –May of 2007).
- (18) **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 2008 and pending
(underline = Baylor Geology Faculty)**

- (1) **Driese, S.G.**, 2008, with the University of Tennessee-Knoxville as the lead institution (with Z.-H. Li as PI/PD, and S.P. Horn as co-PIs), Collaborative research: Pleistocene-Holocene climate variability of the southern Appalachian region, southeastern U.S.: submitted to NSF Paleo Perspectives on Climate Change (P2C2) program (\$61,057 requested for three years, commencing December 1, 2008). NOT FUNDED.
- (2) **Driese, S.G.**, and **Atchley, S.C.**, 2008, Global implications for the rise of the Givetian (375 Ma) forests, Manokill Formation, Catskill State Park, New York, USA: submitted to NSF Paleo Perspectives on Climate Change (P2C2) program (\$225,865 requested for three years, commencing July 1, 2008). NOT FUNDED.
- (3) **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) NOT FUNDED
- (4) **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) NOT FUNDED
- (5) **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) NOT FUNDED
- (6) **Nordt, L.C.**, 2008, Development of a new dating technique for alluvial deposits containing archaeological materials: a case study from the Fort Hood Military Reservation, Texas, U.S. Department of Defense. (submitted in December, 2008; Total amount requested is \$54,000) PENDING
- (7) **Pulliam, J.**, and **Dunbar, J.A.**, 2008, Major Strategic Proposal for a Research and Education Initiative in Solid-Earth Geophysics at Baylor University: 2009 – 2013 (with members of the Geology Dept Faculty): Submitted to Baylor University on December 15, 2008. Total amount requested: \$1.97M. PENDING
- (8) **Pulliam, J.**, and **Dunbar, J.A.**, 2008, Collaborative Research: 4-D Structure of the Texas Continent-Ocean Boundary and Implications for Lithosphere-Asthenosphere Interactions: PI: Jay Pulliam, Co-Investigators: John Dunbar (Baylor), Harm Van Avendonk, Luc Lavier, Nick Hayman, Brian Horton (all of UT Austin), Randy

Keller (U. Oklahoma), Libby Anthony (UTEP), Bob Stern (UT Dallas), Steve Gao (Missouri U. of Sci. and Tech.), Aaron Velasco (UTEP), Kevin Mickus (Missouri State U.), Harold Gurrola (Texas Tech): Submitted to the National Science Foundation. (Earth Sciences Division, Continental Dynamics Program) on October 15, 2008. Total amount requested: \$3,475,109 (\$426,784 to Baylor University). PENDING

- (9) **Pulliam, J.**, 2008, Collaborative Research: 4-D Structure of the Texas Continent-Ocean Boundary and Implications for Lithosphere-Asthenosphere Interactions: PI: Jay Pulliam, Co-Investigators: Harm Van Avendonk, Nick Hayman, Brian Horton (all of UT Austin), Randy Keller (U. Oklahoma), Libby Anthony (UTEP), Bob Stern (UT Dallas), Steve Gao (Missouri U. of Sci. and Tech.), Kevin Mickus (Missouri State U.), Harold Gurrola (Texas Tech): Submitted to the National Science Foundation (Earth Sciences Division, EarthScope Program) on July 16, 2008. Note: The Continental Dynamics proposal includes costs for this proposal as well. We hope the two programs will share the project's costs. PENDING
- (10) **Pulliam, J.**, 2008, Seismic Velocity Estimation from Multiple Waveform Functionals: S Receiver Functions, Waveform Fitting, and Surface Wave Dispersion: Submitted to the National Nuclear Security Agency (Dept of Energy) and Air Force Research Laboratory (Dept of Defense) on May 16, 2008. Total funding requested: \$445,284. PENDING

Respectfully submitted by Steven G. Driese,
Professor and Geology Department Chair
March 27, 2009