Robert M. Reed

Professional Summary

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Professional Preparation

Academic Background

Ph.D. Geology, The University of Texas at Austin, August 1999

M.S. Geology, University of Massachusetts at Amherst, February 1993

B.S. Geology, The University of Texas at Austin, December 1985

Professional Appointments

Research Scientist Associate V, Bureau of Economic Geology, Jackson School of Geosciences, The University of Texas at Austin (September 2018-Present)
Working with a variety of projects involving diagenesis, pore systems, and other rock characteristics, primarily at the microscopic level. Techniques used include cathodoluminescence, energy dispersive spectroscopy, and various other electron microscope analytical methods. Principal investigator of the scanning electron microscope laboratory.

Research Scientist Associate IV, Bureau of Economic Geology (September 2007-August 2018)
Working with a variety of projects involving diagenesis, fractures, porosity, and other rock features, primarily at the microscopic level. Techniques used include cathodoluminescence, electron backscatter diffraction, energy dispersive spectroscopy, and various other electron microscope analytical methods

Research Scientist Associate III, Bureau of Economic Geology, The University of Texas at Austin (April 2003 - September 2007). Management of cathodoluminescence image acquisition and processing for ongoing studies by the Fracture Research and Application Consortium (FRAC IA). Study goals include using microfractures to predict the behavior of macrofractures, understanding the interaction between microfracturing and diagenesis, and developing new methodology for microfracture analysis studies.

Postdoctoral Fellow, Bureau of Economic Geology, The University of Texas at Austin (April 2000 - March 2003). A number of studies on fractured sedimentary rocks that include using microfractures to predict the behavior of macrofractures, the interaction between microfracturing and diagenesis, and the evolution of macrofracture morphology.

Research Scientist Associate I, Bureau of Economic Geology, The University of Texas at Austin (March 2000 - March 2000). Assisted with studies in using microfractures to predict properties of fractured reservoirs.

Research Scientist Associate I, Center for Petroleum and Geosystems Engineering, The University of Texas at Austin (October 1999 - February 2000). Assist with studies in using microfractures to predict properties of fractured reservoirs.

Research Scientist Associate I, Geology Foundation, The University of Texas at Austin (October 1999 - November 1999). Development of illustrations for regional geologic study.

Research Scientist Associate I, Center for Petroleum and Geosystems Engineering, The University of Texas at Austin (May 1999 - September 1999). Assisted with studies in using microfractures to predict properties of fractured reservoirs.

Research Scientist Associate I, Bureau of Economic Geology, The University of Texas at Austin (February 1999 - April 1999). Assisted with studies in using microfractures to predict properties of fractured reservoirs.

Research Scientist Associate I, Bureau of Economic Geology, The University of Texas at Austin (September 1998 - January 1999). Assisted with studies in using microfractures to predict properties of fractured reservoirs.

Graduate Research Assistant, Bureau of Economic Geology, The University of Texas at Austin (September 1997 - August 1998). Assisted with projects involving the use of cathodoluminescence in the microfracture analysis of sandstones.

Graduate Research Assistant, Department of Geological Sciences, The University of Texas at Austin (January 1997 - August 1997). Assisted with projects involving the use of cathodoluminescence in the microfracture analysis of sandstones.

Teaching Assistant, Department of Geological Sciences, The University of Texas at Austin (September 1990 - July 1997). Teaching responsibilities included assisting with a number of classes including upper division and graduate courses.

Graduate Research Assistant, Bureau of Economic Geology, The University of Texas at Austin (September 1995 - December 1996). Assisted with projects involving the use of cathodoluminescence in the microfracture analysis of sandstones.

Technical Assistant, Howard Laboratories, Amherst, MA (August 1989 - July 1990). Responsibilities included a wide range of technical and administrative functions for a company providing environmental services.

Teaching Assistant, Department of Geology and Geography, University of Massachusetts at Amherst (August 1988 - May 1989). Teaching responsibilities included assisting with courses in Introductory Geology and Oceanography.

Theses

Microfabric analysis of the northern part of the Pelham Dome, central Massachusetts: Amherst, MA, University of Massachusetts, M.S. thesis, 190 pages, 1993

Dissertations

Emplacement and deformation of late syn-orogenic, Grenville-age granites in the Llano Uplift, Central Texas: Austin, TX, University of Texas, Ph.D. dissertation, 272 pages, 1999

Areas of Expertise

Areas of Expertise

Microstructural analysis of sedimentary rocks

Pores and pore networks in mudrocks

Scanning electron microscopy studies

Publications

Peer Reviewed Journal Articles

Loucks, R. G., Reed, R. M., Zeng, H., and Periwal, P., 2023, Carbonate sedimentation and reservoirs associated with a volcanic mound in an open-marine, deep-water, drowned platform setting, Elaine field area, Upper Cretaceous Anacacho Formation, South Texas U.S.A.: Marine and Petroleum Geology, v. 154, no. 106314, 17 p., http://doi.org/10.1016/j.marpetgeo.2023.106314.

Zeng, H., Loucks, R. G., and Reed, R. M., 2023, Three-dimensional seismic architecture of an Upper Cretaceous volcanic complex and associated carbonate systems; Taylor Group, Elaine field, South Texas, USA: Marine and Petroleum Geology, v. 155, no. 106350, 20 p., http://doi.org/10.1016/j.marpetgeo.2023.106350.

Loucks, R. G., and Reed, R. M., 2022, Implications for carbonate mass-wasting complexes induced by volcanism from Upper Cretaceous Austin Chalk strata in the Maverick Basin and San Marcos Arch areas of south-central Texas, USA: Sedimentary Geology, v. 432, no. 106120, 18 p., http://doi.org/10.1016/j.sedgeo.2022.106120.

Reed, R. M., and Loucks, R. G., 2022, Textures, mineralogy, and reservoir properties of an altered mafic tuff core from the Upper Cretaceous (Lower Campanian) of Central Texas: GCAGS Journal, v. 11, 15 p.

Loucks, R. G., Reed, R. M., Ko, L. T., Zahm, C. K., and Larson, T. E., 2021, Micropetrographic characterization of a siliciclastic-rich chalk; Upper Cretaceous Austin Chalk Group along the onshore northern Gulf of Mexico, USA: Sedimentary Geology, v. 412, no. 105821, 19 p., http://doi.org/10.1016/j.sedgeo.2020.105821.

Peng, S., Shevchenko, P., Periwal, P., and Reed, R. M., 2021, Water-oil displacement in shale: new insights from a comparative study integrating imbibition tests and multiscale imaging: Society of Petroleum Engineers Journal, v. 26, no. 5, paper no. SPE-205515-PA, p. 3285-3299, http://doi.org/10.2118/205515-PA.

Loucks, R. G., Lambert, J. R., Patty, K., Larson, T. E., Reed, R. M., and Zahm, C. K., 2020, Regional overview and significance of the mineralogy of the Upper Cretaceous Austin Chalk Group, onshore Gulf of Mexico: GCAGS Journal, v. 9, p. 1-16.

Reed, R. M., Loucks, R. G., and Ko, L. T., 2020, Scanning electron microscope petrographic differentiation among different types of pores associated with organic matter in mudrocks: GCAGS Journal, v. 9, p. 17-27.

Milliken, K. L., Reed, R. M., McCarty, D. K., Bishop, J., Lipinski, C. J., Fischer, T. B., Crousse, L., and Reijenstein, H., 2019, Grain assemblages and diagenesis in the Vaca Muerta Formation (Jurassic-Cretaceous), Neuquén Basin, Argentina: Sedimentary Geology, v. 380, p. 45-64, http://doi.org/10.1016/j.sedgeo.2018.11.007.

Peng, S., Reed, R. M., Xiao, X., Yang, Y., and Liu, Y., 2019, Tracer-guided characterization of dominant pore networks and implications for permeability and wettability in shale: Journal of Geophysical Research: Solid Earth, v. 124, p. 1459-1479, http://doi.org/10.1029/2018JB016103.

Reed, R. M., Sivil, J. E., Sun, X., and Ruppel, S. C., 2019, Heterogeneity of microscale lithology and pore systems in an Upper Cretaceous Eagle Ford Group horizontal core, South Texas, U.S.A.: GCAGS Journal, v. 8, p. 22-34.

Reed, R. M., 2017, Organic-matter pores: new findings from lower-thermal-maturity mudrocks: GCAGS Journal, v. 6, p. 99-110.

Loucks, R. G., and Reed, R. M., 2016, Natural microfractures in unconventional shale-oil and shale-gas systems: real, hypothetical, or wrongly defined?: GCAGS Journal, v. 5, p. 64-72.

Loucks, R. G., Reed, R. M., and Ambrose, W. A., 2015, Analysis of pore networks and reservoir quality of the Upper Cretaceous Woodbine sandstone in the high-recovery-efficiency, giant East Texas Field: GCAGS Journal, v. 4, p. 88-108.

Reed, R. M., and Loucks, R. G., 2015, Low-thermal-maturity (<0.7% VR) mudrock pore systems: Mississippian Barnett Shale, southern Fort Worth Basin: GCAGS Journal, v. 4, p. 15-28.

Loucks, R. G., and Reed, R. M., 2014, Scanning-electron-microscope petrographic evidence for distinguishing organic-matter pores associated with depositional organic matter versus migrated organic matter in mudrocks: GCAGS Journal, v. 3, p. 51-60.

Reed, R. M., Loucks, R. G., and Ruppel, S. C., 2014, Comment on "Formation of nanoporous pyrobitumen residues during maturation of the Barnett Shale (Fort Worth Basin)" by Bernard et al. (2012): International Journal of Coal Geology, v. 127, p. 111-113, http://doi.org/10.1016/j.coal.2013.11.012

Loucks, R. G., Reed, R. M., Ruppel, S. C., and Hammes, U., 2012, Spectrum of pore types and networks in mudrocks and a descriptive classification for matrix-related mudrock pores: AAPG Bulletin, v. 96, no. 6, p. 1071-1098.

Milliken, K. L., Esch, W. L., Reed, R. M., and Zhang, T., 2012, Grain assemblages and strong diagenetic overprinting in siliceous mudrocks, Barnett Shale (Mississippian), Fort Worth Basin, Texas: AAPG Bulletin, v. 96, no. 8, p. 1553-1578.

Lu, Jiemin, Milliken, K., Reed, R. M., and Hovorka, S. D., 2011, Diagenesis and sealing capacity of the middle Tuscaloosa mudstone at the Cranfield carbon dioxide injection site, Mississippi: Environmental Geosciences, v. 18, no. 1, p. 35-53.

Barker, D. S., and Reed, R. M., 2010, Proterozoic granites of the Llano Uplift, Texas: a collision-related suite containing rapakivi and topaz granites: Geological Society of America Bulletin, v. 122, no. 1/2, p. 253-264.

Becker, S. P., Eichhubl, P., Laubach, S. E., Reed, R. M., Lander, R. H., and Bodnar, R. J., 2010, A 48 m.y. history of fracture opening, temperature, and fluid pressure: Cretaceous Travis Peak Formation, East Texas Basin: Geological Society of America Bulletin, v. 122, no. 7/8, p. 1081-1093.

Gale, Julia F. W., Lander, R., Reed, R. M., and Laubach, S. E., 2010, Modeling fracture porosity evolution in dolostone: Journal of Structural Geology, v. 32, p. 1201-1211. doi:10.1016/j.jsg.2009.04.018.

Milliken, K. L., and Reed, R. M., 2010, Multiple causes of diagenetic fabric anisotropy in weakly consolidated mud, Nankai accretionary prism, IODP Expedition 316: Journal of Structural Geology, v. 32, p. 1887-1898.

Hooker, J. N., Gale, J. F. W., Gomez, L. A., Laubach, S. E., Marrett, R. A., and Reed, R. M., 2009, Aperture-size scaling variations in a low-strain opening-mode fracture set, Cozzette Sandstone, Colorado: Journal of Structural Geology, v. 31, p. 707-718.

Loucks, R. G., Reed, R. M., Ruppel, S. C., and Jarvie, D. M., 2009, Morphology, genesis, and distribution of nanometer-scale pores in siliceous mudstones of the Mississippian Barnett Shale: Journal of Sedimentary Research, v. 79, p. 848-861.

Gale, J. F. W., Reed, R. M., and Holder, Jon, 2007, Natural fractures in the Barnett Shale and their importance for hydraulic fracture treatments: AAPG Bulletin, v. 91, no. 4, p. 603-622.

Gale, J. F. W., Laubach, S. E., Marrett, R. A., Olson, J. E., Holder, Jon, and Reed, R. M., 2004, Predicting and characterizing fractures in dolostone reservoirs: using the link between diagenesis and fracturing, in Braithwaite, C. J. R., Rizzi, G., and Darke, G., eds., The geometry and petrogenesis of dolomite hydrocarbon reservoirs: London, Geological Society, Special Publications, 235, p. 177-192.

Laubach, S. E., Lander, R. H., Bonnell, L. M., Olson, J. E., and Reed, R. M., 2004, Opening histories of fractures in sandstones, in Cosgrove, J. W., and Engelder, T., eds., The initiation, propagation, and arrest of joints and other fractures: Geological Society, London, Special Publications, 231, p. 1-9.

Laubach, S. E., Reed, R. M., Olson, J. E., Lander, R. H., and Bonnell, L. M., 2004, Coevolution of crack-seal texture and fracture porosity in sedimentary rocks: cathodoluminescence observations of regional fractures: Journal of Structural Geology, v. 26, no. 5, p. 967-982.

Reed, R. M., and Milliken, K. L., 2003, How to overcome imaging problems associated with carbonate minerals on SEM-based cathodoluminescence systems: Journal of Sedimentary

Research, v. 73, no. 2, p. 328-332.

Peer Reviewed Book Chapters

Ruppel, S. C., Rowe, H., Reed, R. M., and Loucks, R. G., 2020, The Mississippian System in the Permian Basin: Proximal Platform Carbonates and Distal Organic-Rich Mudrocks, in Ruppel, S. C., ed., Anatomy of a Paleozoic Basin: The Permian Basin, USA: The University of Texas at Austin, Bureau of Economic Geology Report of Investigations 285; AAPG Memoir 118, v. 118, pt. 2, p. 125-158, http://doi.org/0.23867/RI0285-2.

Ruppel, S. C., Rowe, H., Reed, R. M., Barrick, J. E., James, E. J., and Loucks, R. G., 2020, The Woodford Formation of the Permian Basin: Regional, Middle to Late Devonian Transgression of the Southern Midcontinent and Accompanying Anoxia, in Ruppel, S. C., ed., Anatomy of a Paleozoic Basin: The Permian Basin, USA: The University of Texas at Austin, Bureau of Economic Geology Report of Investigations 285; AAPG Memoir 118, pt. 2, p. 75-124, http://doi.org/0.23867/RI0285-2.

Wang, F. P., Hammes, U., Reed, R. M., Zhang, T., and Tang, X., 2013, Chapter 10: Petrophysical and mechanical properties of organic-rich shales and their influences on fluid flow, in Critical Assessment of Shale Resource Plays,Chatellier, J.-Y.and D. Jarvie, eds.: AAPG Memoir 103, p. 167-186.

Milliken, K., Reed, R. M., and Laubach, S. E., 2005, Chapter 14. Quantifying compaction and cementation in deformation bands in porous sandstones, in Sorkhabi, R., and Tsuji, Y., eds., Faults, fluid flow, and petroleum traps: AAPG Memoir 85, p. 237-249.

Non Peer Reviewed Journal Articles

Loucks, R. G., and Reed, R. M., 2023, Alteration of Volcanic Grains to Glauconite in the Upper Cretaceous Austin Chalk Formation in the Balcones Igneous Province, South and Central Texas; Implications for Depositional History: GCAGS Transactions, v. 72, p. 149-154.

Loucks, R. G., Reed, R. M., Ruppel, S. C., and Hammes, Ursula, 2010, Preliminary classification of matrix pores in mudrocks: Gulf Coast Association of Geological Societies Transactions, v. 60, p. 435-441.

Hammes, Ursula, Eastwood, Ray, Rowe, H. D., and Reed, R. M., 2009, Addressing conventional parameters in unconventional shale-gas systems: depositional environment, petrography, geochemistry, and petrophysics of the Haynesville Shale, in Carr, T., D'agostino, T., Ambrose, W., Pashin, J., and Rosen, N. C., eds. Unconventional energy resources: making the unconventional conventional: 29th Annual GCSSEPM Foundation Bob F. Perkins Research Conference, December 6-8, Houston, p. 181-202.

Reed, R. M., 2009, Cathodoluminescencer, in Laubach, S. E., and Tinker, S. W., eds., 2009, Earth's art: celebrating the Centennial of the Bureau of Economic Geology, 1909-2009: The University of Texas at Austin, Bureau of Economic Geology, p. 118-119.

Reed, R. M., 2009, Enchanted Rock, Central Texasr, in Laubach, S. E., and Tinker, S. W., eds., 2009, Earth's art: celebrating the Centennial of the Bureau of Economic Geology, 1909-2009: The University of Texas at Austin, Bureau of Economic Geology, p. 126-127.

Wang, F. P., and Reed, R. M., 2009, Pore networks and fluid flow in gas shales, Society of Petroleum Engineers, Paper No. 1234253-PP, 8 p.

Zahm, C., and Reed, R. M., 2009, Folds and fractures, Dinosaur Monument, Utah, in Laubach, S. E., and Tinker, S. W., eds., 2009, Earth's art: celebrating the Centennial of the Bureau of Economic Geology, 1909-2009: The University of Texas at Austin, Bureau of Economic Geology, p. 26-27.

Neumann, V. H., Gale, Julia F. W., Reed, R. M., Barbosa, J. A., 2008, Padrão de fraturamento nos calcarios laminados Aptianos da região ded Nova Olinda-Santana do Cariri, Bacia do Araripe: Uma aplicação da técnica de escalas: Estudos Geológicos, v. 18, no. 2, 15 p., p.

101-115.

de Oliveira, D. P. S., Reed, R. M., Milliken, K. L., Robb, L. J., Inverno, C. M. C., and d'Orey, F. L. C., 2003, (Meta)cherts, (meta)lydites, (meta)phtanites and quartzites of the Série Negra (Crato-S. Martinho), E. Portugal: towards a correct nomenclature based on mineralogy and cathodoluminescence studies, in Actas do VI Congresso Nacional de Geologia, Ciências da Terra, Universidade Nova de Lisboa, Lisboa, Special No. 5, CD-ROM, B68-B71.

de Oliveira, D. P. S., Reed, R. M., Milliken, K. L., Robb, L. J., Inverno, C. M. C., and d'Orey, F. L. C., 2003, Série Negra black quartzites--Tomar Cordoba Shear Zone, E. Portugal: mineralogy and cathodoluminescence studies: Cadernos Lab. Xeolóxico de Laxe Coruña, v. 28, p. 193-211

Gale, Julia F. W., Laubach, S. E., Reed, R. M., Moros Otero, J. G., and Gomez, L. A., 2002, Fracture analysis of Clear Fork outcrops in Apache Canyon and cores from South Wasson Clear Fork field, in Integrated outcrop and subsurface studies of the interwell environment of carbonate reservoirs: Clear Fork (Leonardian-age) reservoirs, West Texas and New Mexico: The University of Texas at Austin, Bureau of Economic Geology, final technical report prepared for U.S. Department of Energy under contract no. DE-AC26-98BC15105, p. 191-226.

Laubach, S. E., Reed, R. M., Gale, J. F. W., Ortega, Orlando, and Doherty, Eloise, 2002, Fracture characterization based on microfracture surrogates, Pottsville Sandstone, Black Warrior Basin, Alabama: Gulf Coast Association of Geological Societies Transactions, v. 52, p. 585-596.

Milliken, K. L., and Reed, R. M., 2002, Internal structure of deformation bands as revealed by cathodoluminescence imaging, Hickory Sandstone (Cambrian), Central Texas: Gulf Coast Association of Geological Societies Transactions, v. 52, p. 725-736.

Laubach, S. E., Reed, R. M., Olson, J., Ortega, Orlando, and Gale, J. F. W., 2001, Fracture-surrogate analysis methods applied to Spraberry, Bone Spring, and "Canyon" cores: preliminary results, in The Permian Basin: microns to satellites, looking for oil and gas at all scales: West Texas Geological Society Fall Symposium, West Texas Geological Society Publication 01-110, p. 75-79.

Barker, D. S., Muehlberger, W. R., and Reed, R. M., 1996, Stop 12; Coarse-grained granite at Wirtz dam, in Guide to the Precambrian Geology of the eastern Llano uplift: The University of Texas at Austin, Department of Geological Sciences: Geological Society of America, 30th Annual South-Central Section Meeting Guidebook, p. 33-40.

Reed, R. M., 1996, Optional Stop; the Midway granite sill, in Guide to the Precambrian Geology of the eastern Llano uplift: The University of Texas at Austin, Department of Geological Sciences: Geological Society of America, 30th Annual South-Central Section Meeting Guidebook, p. 31-33.

Reed, R. M., 1996, Stop 10; Wolf Mountain Intrusion, in Guide to the Precambrian Geology of the eastern Llano uplift: The University of Texas at Austin, Department of Geological Sciences: Geological Society of America, 30th Annual South-Central Section Meeting Guidebook, p. 25-30.

Robinson, P., Tucker, R. D., Gromet, L. P., Ashenden, D. D., Williams, M. L., Reed, R. M., and Peterson, V. L., 1992, The Pelham dome, central Massachusetts: stratigraphy, geochronology, and Acadian and Pennsylvanian structure and metamorphism, in Robinson, Peter, and Brady, J. B., eds., Guidebook for field trips in the Connecticut Valley Region of Massachusetts and adjacent states: Annual Meeting of the New England Intercollegiate Geological Conference, Amherst, Massachusetts, p. 132-169.

Guidebooks

Woodruff, C. M., Jr., Reed, R. M., Potter, E. C., and Collins, E. W., 2012, Enchanted Rock and the LBJ National Historical Park: Guidebook for the Association of American State Geologists 104th Annual Meeting, Lakeway, Texas, June 9, 2012: The University of Texas at Austin,

Bureau of Economic Geology 19 p..

Reed, R. M., 2011, Geology and geomorphology of the Enchanted Rock State Natural Area, Central Texas: Austin Geological Society, Field Trip Guidebook, v. 32, 46 p.

Conference Proceedings

Ramiro-Ramirez, S., Bhandari, A. R., Flemings, P. B., and Reed, R. M., 2020, Porosity and permeability heterogeneity in the upper Wolfcamp, Delaware Basin, West Texas: implications for production, Society of Petroleum Engineers/American Association of Petroleum Geologists/Society of Exploration Geophysicists Unconventional Resources Technology Conference, doi:10.15530/urtec-2020-2105, no. 2020-2105, Austin, Tex., July 20-22, virtual, 8 p.

Landry, C. J., Prodanovi, M., Reed, R. M., Eichhubl, P., and Mohanty, K., 2017, Estimating mudrock oil-water relative permeability curves using digital rock physics, Unconventional Resources Technology Conference, No. 2691701, Austin, Tex., 21 p.

Reed, R. M., and Roush, R. S., 2016, Pore Systems of the Cline Shale, Midland Basin, West Texas, Unconventional Resources Technology Conference, DOI 10.15530-urtec-2016-2423781, no. 2423781, San Antonio, Texas, 10 p.

Contract Reports

Gale, J. F. W., Baumgardner, R., Bhandari, A., Darvari, R., Dommisse, R., Eichhubl, P., Elliott, S. J., Fall, A., Flemings, P., Hamlin, H. S., Landry, C. J., Mohanty, K., Nicot, J.-P., Polito, P., Prodanovi?, M., Ramiro-Ramirez, S., Reed, R. M., Rowe, H., Ruppel, S. C., and Sivil, J. E., 2019, Multi-faceted study of water cut in the Permian Wolfcamp in the Delaware Basin, West Texas: final report prepared for Shell, under contract no. UT OSP# 201503146-001, 292 p.

Ambrose, W. A., Smith, D. C., Cutright, B. L., Scanlon, B. R., Reedy, R. C., Elliott, B. A., Paine, J. G., Foss, M. M., Tremblay, T. A., Wolaver, B. D., Loucks, R. G., Frébourg, G., Hentz, T. F., Ogiesoba, O. C., Olariu, M. I., Fu, Q., Zeng, H., E. L. Frost, III, Hamlin, H. S., Nance, H. S., Duncan, I. J., Hammes, U., Rogers, H., Clift, S. J., Sivil, J. E., Zhang, T., Reed, R. M., Baumgardner, R. W., Jr., Eastwood, R., Breton, C., Rowe, H. D., Carr, D. L., Dunlap, D. B., Gale, J. F. W., and Peng, S., 2014, State of Texas Advanced Resource Recovery (STARR) progress report: Bureau of Economic Geology, Biennium prepared for Texas State Comptroller of Public Accounts, 90 p.

Hooker, J. N., Eichhubl, Peter, Reed, R. M., and Laubach, S. E., 2006, Wind River Basin study: initial analysis of Tensleep Formation: The University of Texas at Austin, Bureau of Economic Geology, topical report prepared for FRAC Industrial Associates, 13 p.

Gale, J. F. W., Hooker, J. N., Laubach, S. E., and Reed, R. M., 2005, Fracture analysis of Frontier Fm. Samples: The University of Texas at Austin, Bureau of Economic Geology, Fracture Research and Application Consortium, case study reports prepared for Shell, 13 p.

Gale, J. F. W., Reed, R. M., Gomez, L. A., Hooker, J. N., Holder, Jon, and Rijken, M., 2004, Fracture analysis of Cretaceous carbonates from Gaviota field, N. Spain: The University of Texas at Austin, Bureau of Economic Geology, final report prepared for RepsolYpf Gaviota Vield Project, 13 p. + apps.

Gale, J. F. W., Reed, R. M., Gomez, L. A., Rijken, P., and Hooker, J. N., 2004, Deep valley fracture analysis project, pilot study: The University of Texas at Austin, Bureau of Economic Geology, report of findings prepared for Fracture Research and Application Consortium in collaboration with Tom Brown, Inc. (Midland), 15 p. + apps.

Gale, J. F. W., Reed, R. M., Hooker, J. N., and Holder, J., 2004, Fracture analysis of metamorphic rocks from Dorozsma field, Hungary: The University of Texas at Austin, Bureau of Economic Geology, final case study report prepared for Schlumberger, 17 p. + apps.

Laubach, S. E., Stowell, J. F. W., and Reed, R. M., 2001, Southeast Green River Basin sidewall core study: preliminary results: The University of Texas at Austin, Bureau of Economic Geology,

report prepared for Tom Brown, Inc., 26 p. and CD.

Laubach, S. E., Marrett, Randall, Rossen, C., Olson, J., Lake, L. W., Ortega, Orlando, Gu, Yaguang, and Reed, R. M., 1999, Using microstructure observations to quantify fracture properties and improve reservoir simulations: The University of Texas at Austin, Bureau of Economic Geology, final report prepared for U.S. Department of Energy, Assistant Secretary for Fossil Energy, under subcontract no. G4S51732, contract DE-AC22-94-PC91008, 493 p.

Laubach, S. E., Marrett, Randall, Rossen, William, Olson, J., Lake, L. W., Ortega, Orlando, Gu, Yaguang, and Reed, R. M., 1998, Using microstructure observations to quantify fracture properties and improve reservoir simulations: The University of Texas at Austin, Bureau of Economic Geology, Department of Geological Sciences, and Department of Petroleum and Geosystems Engineering, final report submitted to BDM-Oklahoma, Inc., under subcontract no. G4S51732, 493 p.

Course Notes

Ruppel, S. C., Baumgardner, R. W., Jr., Eastwood, R., Frébourg, G., Javadpour, F., Loucks, R. G., Ko, L., Milliken, K., Nance, H. S., Reed, R. M., Rowe, H., and Zhang, T., 2013, Extended Abstracts: Mudrock System Research Laboratory Annual Meeting: The University of Texas at Austin, Bureau of Economic Geology, 281 p.

Loucks, Robert, Ruppel, Stephen, Gale, Julia, Jarvie, Dan, Kane, Jeff, McDonnell, Angela, Potter, Eric, Reed, Robert, Wang, Fred, Wright, Wayne, and Zeng, Hongliu, 2007, Barnett Shale-Gas Play of the Fort Worth Basin: The University of Texas at Austin, Bureau of Economic Geology, 151p.

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International Conference on Basement Tectonics, p. 291.

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Reed, R. M., and Williams, M. L., 1993, Formation mechanism of the Pelham dome, western Bronson Hill Anticlinorium, central Massachusetts (abs.): Geological Society of America Abstracts with Programs, v. 25, no. 6, p. A475.

Peterson, V. L., Williams, M. L., Robinson, P., and Reed, R. M., 1990, Late orogen-parallel extension: an example and kinematic implications from the Bronson Hill anticlinorium, central New England: Geological Society of America Abstracts with Programs, v. 22, no. 7, p. A368.

Reed, R. M., 1990, Relative timing of microfabric deformational phases and metamorphism, northern portion of the Pelham dome, north-central Massachusetts (abs.): Geological Society of America Abstracts with Programs, v. 22, no. 2, p. A64.

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Awards

Awards and Honorary Societies

A. I. Levorsen Award as co-author of Best Paper presented at Gulf Coast Section, GCSSEPM/GCAGS Annual Meeting, "Preliminary Classification of Matrix Pores in Mudrocks"

President's Award for Outstanding Paper in the GCAGS Journal: "Scanning-electron-microscope petrographic evidence for distinguishing organic-matter pores associated with depositional organic matter versus migrated organic matter in mudrock" (co-author Robert Loucks), 2014

Third Place Gordon I. Atwater Award for poster "Pore Morphology and Distribution in the Cretaceous Eagle Ford Shale, South Texas, USA," 2012 GCAGS Convention, Austin, Texas, 2012

President's Certificate for Excellence in Presentation (Best Oral Presentation), AAPG Energy Minerals Division (EMD), 2011

Grover E. Murray Best Published Paper Award as co-author of Third-Place Paper published in GCAGS Transactions, "Preliminary Classification of Matrix Pores in Mudrocks", 2010

EMD Best Poster Award (with Robert Loucks Annual Meeting of the American Association of Petroleum Geologists, 2007

President's Certificate for Excellence, Energy Minerals Division, American Association of Petroleum Geologists, 2007

President's Certificate for Excellence, Energy Minerals Division, American Association of Petroleum Geologists, for poster titled "Synkinematic Carbonate Fracture Sealing Cements in Opening-Mode Fractures: Characteristics and Models", 2006

Outstanding Student Research Award, Geological Society of America, 1994

Graduate Student Petrography Award, Department of Geological Sciences, The University of Texas, 1992

National Merit Scholarship, The University of Texas at Austin, 1981 - 1985

Teaching and Advising

University Courses Taught

Pores in the Mississippian Barnett Shale of the northern Fort Worth Basin: primary, secondary, and possible fracture-related examples: Bureau of Economic Geology research seminar, The University of Texas at Austin, Austin, Texas, November 17, 2006.

Introduction to the Bureau's scanning electron microscope: Bureau of Economic Geology Technical Seminar, Austin, Texas, August 2003.

Student Committee Participation

Member, B.S. Thesis Committee, Elizabeth R. Hatley, EBSD Analysis of Garnet Orientations and Garnet-Pair Misorientations in Metamorphic Rocks: The University of Texas at Austin, 2007

Member, B.S. with Honors Thesis Committee, Wesley D. Crawford, Jr., A Comparative Study of Eclogitic Remnants from the Llano Uplift, Central Texas: The University of Texas at Austin, 2005

Presentations

Invited Presentations

How Depositional Environment, Diagenesis, and Thermal Maturity Affect the Evolution and Significance of Organic and Mineral Pore Systems in Unconventional Oil and Gas Reservoirs: Current Understanding and Future Research: presented at AAPG Hedberg Conference, Houston, Texas, March 4-May 6, 2019.

Volcanic Activated Mass-Wasting Complexes in the Upper Cretaceous Upper Austin Chalk Strata in South and Central Texas, U.S.A.: presented to Austin Geological Society, Austin, Texas, March 7, 2022-Present.

Presentations

Alteration of Volcanic Grains to Glauconite in the Upper Cretaceous Austin Chalk Formation in the Balcones Igneous Province, South and Central Texas; Implication for Depositional History: presented to GCAGS, presented at GCAGS Annual Meeting, Houston, Tex., April 25, 2023.

Facies and Associated Reservoir Quality of the 3rd Bone Spring Siliciclastics & Wolfcamp A and

B, Pecos Co., southern Delaware Basin, west Texas: presented to MSRL consortium members, presented at MSRL Annual Meeting, Houston, Tex., April 11-12, 2022.

Pore Systems and Diagenesis of the Basinal Leonardian 2nd and 3rd Bone Spring Carbonates, Delaware Basin, west Texas: presented to MSRL consortium members, presented at MSRL Annual Meeting, Houston, Tex., April 11-12, 2022.

Characteristics of the Leonardian Second Bone Spring Sand and Third Bone Spring Lime, Reeves County, southern Delaware Basin, Texas: presented to MSRL members, presented at 2021 MSRL Core Workshop, Houston Core Research Center, December 7, 2021.

Characteristics of the Leonardian Third Bone Spring Lime, Reeves County, southern Delaware Basin, Texas: presented to MSRL members, presented at 2021 MSRL Core Workshop, Houston Core Research Center, December 7, 2021.

Integrating lithofacies and chemofacies characterizations for the Permian Basin Wolfcamp XY and Third Bone Spring Formation, Delaware Basin, Texas: presented to American Association of Petroleum Geologists (AAPG-ACE), Denver, Colorado, October 2021.

Integrating lithofacies with geochemical and petrophysical properties of the Tithonian-Valanginian Vaca Muerta Fm., central Neuquén Basin, Argentina: presented to AAPG, presented at International Meeting for Applied Geoscience & Energy (IMAGE), Online oral presentation, September 27-29, 2021.

Water-Oil Displacement in Shale: New Insights from a Comparative Study Integrating Imbibition Tests and Multiscale Imaging: presented to URTeC, presented at URTeC 2021, Virtual, July 26-28, 2021.

Water-Oil Displacement, Wettability, and Improved Oil Recovery in Shale: presented to MSRL members, presented at Mudrock Systems Research Laboratory (MSRL) Annual Meeting, online conference, April 6-8, 2021.

Pore Connectivity, Porosity, Permeability, and Influence of TOC and Mineralogy in Shale: presented to MSRL members, presented at Mudrock Systems Research Laboratory Annual Meeting, Austin, TX, April 8-10, 2020.

Invited talk: Distinguishing organic matter pores associated with in-place organic matter versus migrated organic matter in mudrocks: EMD/AAPG Unconventional Research Group Meeting, Houston, Texas, April 8, 2014.

Nano- and micro-pores in the Cretaceous Eagle Ford Shale, South Texas, USA: presented at GSA Annual Meeting, Denver, Colorado, October 3-November 3, 2011.

Pore system multiscale heterogeneity in organic-bearing mudrocks: presented at 45th South-Central Section GSA Annual Meeting, New Orleans, Louisiana, March 27-29, 2011.

A close look at the Barnett pore network and questions that need answering: invited talk presented at AAPG Unconventional Gas Research Committee Meeting, San Antonio, Texas, April 2008.

Morphology, distribution, and genesis of nanometer-scale pores in the Mississippian Barnett Shale: presented at the AAPG Annual Convention, San Antonio, Texas, April 2008.

Integrated SEM-based cathodoluminescence imaging and fluid inclusion analysis of crack-seal quartz cement in sandstone macrofractures: presented at Geological Society of America Annual Meeting, Salt Lake City, Utah, October 17, 2005.

Relict grain-cement textures in metasandstones revealed using SEM-based cathodoluminescence imaging: presented at Geological Society of America Annual Meeting, Denver, Colorado, November 10, 2004.

Use of SEM-Cl in identifying cryptic metaclastic rocks: presented to Department of Geological Sciences, The University of Texas at Austin, Austin, Texas, April 14, 2004.

Microfractures, macrofractures, and fracture-cement relations in sandstones: examples from Oklahoma and Texas: presented to Tulsa Geological Society, Tulsa, Oklahoma, February 24, 2004.

Some uses of SEM-based cathodoluminescence imaging in sandstone petrology: presented to Graduate Sandstone Petrology class, University of Tulsa, Tulsa, Oklahoma, February 24, 2004.

SEM-based cathodoluminescence imaging in sandstone provenance analysis: quartz and feldspar grains, zircons, and siliceous rock fragments: presented at the Geological Society of America Annual Meeting, Seattle, Washington, November 2003.

Fracture characterization based on microfracture surrogates, Pottsville Sandstone, Black Warrior Basin, Alabama: presented at Gulf Coast Association of Geological Societies Annual Convention, Austin, Texas, October 31, 2002.

Avoiding imaging problems associated with carbonate minerals on SEM-based cathodoluminescence systems: presented to Department of Geological Sciences, The University of Texas at Austin, Austin, Texas, September 16, 2002.

Low-pressure deformation and metamorphism of the Proterozoic Llano Uplift, Central Texas: presented at South-Central Section Meeting, Geological Society of America, Alpine, Texas, April 11, 2002.

A technique for avoiding imaging problems associated with carbonate minerals on SEM-based cathodoluminescence systems: presented at Northeast Section Meeting, Geological Society of America, Springfield, Massachusetts, March 25, 2002.

Interaction between diagenetic reactions and mechanics of opening-mode fractures in sandstones: the message from crack-seal texture: presented at Northeast Section Meeting, Geological Society of America, Springfield, Massachusetts, March 25, 2002.

Maintaining a geoscience website: pitfalls, problems, and potential: invited talk presented at Geological Society of America, Cordilleran Section Meeting, Berkeley, California, 1999.

Activities of a Professional Nature

Professional Societies

American Association of Petroleum Geologists

Austin Geological Society

Geological Society of America