

CURRICULUM VITAE of Jürgen Schieber

(as of 1/30/2025)

Department of Geological Sciences
Indiana University
Bloomington, Indiana 47405

EDUCATION

B.Sc. (Vordiplom) in geology, 1978, University of Tübingen, Germany

Ph.D. in geology, 1985, University of Oregon, *Dissertation*: The Relationship between Basin Evolution and Genesis of stratiform Sulfide Horizons in Mid-Proterozoic Sediments of Central Montana (Belt Supergroup), 811pp.

ACADEMIC APPOINTMENTS

University of Oregon

1982-1985, Research & Teaching Assistant, Department of Geology

1986, Research Associate, Department of Geology

The University of Texas at Arlington

Department of Geology

1986-2002, Assistant to Full Professor

Indiana University

Department of Geological Sciences

2002-present, Associate to Full Professor

2024-present, Haydn Murray Chair of Applied Clay Mineralogy

AWARDS AND HONORS

The University of Texas at Arlington:

2001, Distinguished Research Award

Society for Sedimentary Geology (SEPM)

2007, Best Oral Presentation at SEPM Annual Meeting

American Association of Petroleum Geologists (AAPG)

2008, EMD's President's Certificate for Excellence in Presentation

Robert Sheriff Distinguished Lecturer

Houston Geol. Society and University of Houston. November 16th, 2009.

Canadian Society of Petroleum Geologists

2011, Best Oral Presentation, CSPG 2011 Convention in Calgary

American Association of Petroleum Geologists (AAPG)

2014, Award of Excellence, Top 10 Poster Presentation

American Association of Petroleum Geologists (AAPG)

2014-2015, AAPG Distinguished Lecturer

Universität Wien (Austria)

2016, Spring Semester, Visiting Professor

American Association of Petroleum Geologists (AAPG)

2017, The Robert H. Dott, Sr. Memorial Award

University of Pretoria, South Africa

2019, August, Visiting Professor

American Association of Petroleum Geologists (AAPG)

2019, Outstanding Educator Award

Society for Sedimentary Geology (SEPM)

2020, Best Paper Award, Journal of Sedimentary Research.

The Romanian Academy

2021, Ludovic Mrazec Prize

International Association of Sedimentologists (IAS)

2022, Sorby Medal

Fulbright American Scholar

2023, Work on Adriatic Mudbelt with Scientists from ISMAR



American Association of Petroleum Geologists (AAPG)

2024, Sproule Award (as co-author)

MEMBERSHIPS

American Geophysical Union (AGU)
International Association of Sedimentologists (IAS)
Society for Sedimentary Geology (SEPM)
Deutsche Geologische Vereinigung
Society for Geology Applied to Mineral Deposits
Geological Society of America

PROFESSIONAL EXPERIENCE

Mapping and Mineral Exploration

1977-1979, southwest Germany and northern Italy, Mapping
1979, Bavaria, Mineral Exploration, Saarberg Interplan, Uranium Exploration and Mining
1980-1984, Mineral Exploration and Research, Anaconda Minerals Co., Base Metal Exploration
1982, Australia, Anaconda Minerals Co., Base Metal Exploration

Research

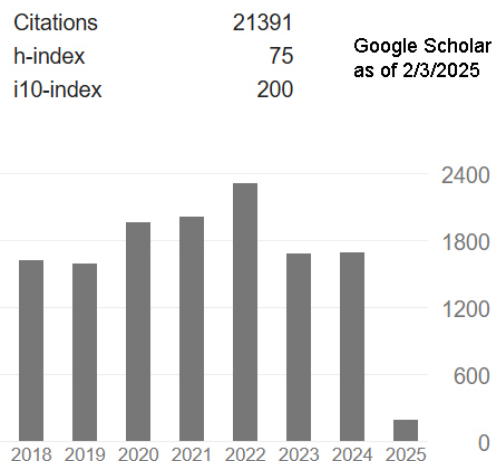
1985, northern Taiwan, Research
1987-1990, western Montana, northern Idaho, Research
1991, 2009, 2011, 2013, SW Germany, Research
1990-2015, eastern US and Great Basin Region, Research
2013-2025, South Africa, UK, Germany, Austria, China, Australia, and Romania, Research

Cruises

2004, BASIN CRUISE, RV New Horizon. Sampling bottom sediments in Santa Barbara and Santa Monica Basins, D. Valentine and A. Sessions (PI's)
2010, CalEchoes CRUISE, RV Melville, Sampling shelf-slope-bottom sediments in Santa Barbara Basin, M. Summers (PI)

Consulting

ExxonMobil Production Research Inc.; Fundamental Shale Research
The Timken Company; Microstructure of high performance ceramics
ChevronTexaco Inc.; Sealing Capacity of Shales
GATAN Inc., beta testing ion milling and CL equipment
Malcolm Pirnie, Inc., shale petrography & pore structure
Chesapeake Energy Corp., shale petrography
Wintershall AG, Germany, shale petrography
Talisman Energy, shale petrography
Pioneer Natural Resources Co., shale petrography
Schlumberger/TerraTek Inc., shale petrography
Nexen Inc., shale sedimentology
Whiting Petroleum Inc., shale sedimentology
Golder Associates, mudstone petrography
Santos Ltd., shale sedimentology and petrography
Statoil/Equinor, shale petrography & pore structure
Petrobras, shale sedimentology and petrography



RESEARCH INTERESTS

Core areas of interest are basin analysis and sedimentology, sedimentology of shales, shale diagenesis, and formation and preservation of shale porosity. Additional research areas include the nature of secular changes in shale facies, microbe-sediment interactions and microbial mats in fine grained clastics, and the sedimentary geology of Mars.

PUBLICATIONS

Refereed Journal Papers: **173** *Book Chapters:* **48** *Books Authored/Edited:* **4**
Book Reviews: **2** *Guidebooks & Guidebook Chapters:* **16**
Conference Abstracts: **396** *Publication Total:* **639**

These figures are a slight underestimate due to multiple co-authorships on Mars Science Lab publications that I still have to track down and compile.

JOURNALS

1. Schieber, J., 1986, Stratigraphic control of rare-earth pattern types in Mid-Proterozoic sediments of the Belt Supergroup, Montana, U.S.A.: Implications for basin analysis: *Chem. Geol.*, v. 54, p. 135-148.
2. Schieber, J., 1986, The possible role of benthic microbial mats during the formation of carbonaceous shales in shallow Mid-Proterozoic basins: *Sedimentology*, v. 33, p. 521-536.
3. Schieber, J., and Katsura, K.T., 1986, Sedimentation in epithermal veins of the Bohemia mining district, Oregon, USA: Interpretations and significance: *Mineralium Deposita*, v. 21, p. 322-328.
4. Schieber, J., 1987, Storm-dominated epicontinental clastic sedimentation in the Mid-Proterozoic Newland Formation, Montana, U.S.A.: *N. Jb. Geol. Paläont. Mh.*, v. 27, p. 417-439.
5. Schieber, J., 1988, Redistribution of rare earth elements during diagenesis of carbonate rocks from the Mid-Proterozoic Newland Formation, Montana, USA: *Chemical Geology*, v. 69, p. 111-126.
6. Schieber, J., 1988, Storm sands with swaley cross-stratification in the Lower Miocene Taliao Formation, Taiwan: *Neues Jahrbuch für Geologie und Paläontologie Monatshefte*, v. 28, p. 718-734.
7. Schieber, J., and Ellwood, B.B., 1988, The coincidence between macroscopic paleocurrent indicators and magnetic lineation in shales of the Precambrian Belt basin: *Journal of Sedimentary Petrology*, v. 58, p. 830-835.
8. Schieber, J., 1989, Facies and origin of shales from the Mid-Proterozoic Newland Formation, Belt basin, Montana, U.S.A.: *Sedimentology*, v. 36, p. 203-219.
9. Schieber, J., 1989, The origin of the Neihart Quartzite: A basal deposit of the Mid-Proterozoic Belt Supergroup, Montana, U.S.A.: *Geological Magazine*, v. 126, p. 271-281.
10. Schieber, J., 1989, Pyrite mineralization in microbial mats from the Mid-Proterozoic Newland Formation, Belt Supergroup, Montana, U.S.A.: *Sedimentary Geology*, v. 64, p. 79-90.
11. Strauss, H., and Schieber, J., 1990, A sulfur isotope study of pyrite genesis: The Mid-Proterozoic Newland Formation, Belt Supergroup, Montana: *Geochimica et Cosmochimica Acta*, v. 54, p. 197-204.
12. Schieber, J., 1990, Pyritic shales and microbial mats: Significant factors in the genesis of stratiform Pb-Zn deposits of the Proterozoic? *Mineralium Deposita*, v. 25, p. 7-14.
13. Schieber, J., 1990, Distribution of REE in the eastern Belt Supergroup: Implications for stratigraphic correlations and basin evolution: *Chemical Geology*, v. 81, p. 83-98.
14. Schieber, J., 1990, Significance of styles of epicontinental shale sedimentation in the Belt basin, Mid-Proterozoic of Montana, U.S.A.: *Sedimentary Geology*, v. 69, p. 297-312.
15. Schieber, J., 1991, The origin and economic potential of disseminated Pb-Zn mineralization in pyritic shale horizons of the Mid-Proterozoic Newland Formation, Montana, U.S.A.: *Mineralium Deposita*, v. 26, p. 290-297.
16. Schieber, J., 1992, Facies and deposition of a mixed terrigenous-carbonate suite in a Mid-Proterozoic epicratonic sea: The Newland Formation, Belt Supergroup, Montana, U.S.A. *Neues Jahrbuch für Geologie und Paläontologie Abhandlungen*, v. 184, p. 155-180.
17. Schieber, J., 1992, A combined petrographical-geochemical provenance study of the Newland Formation, Mid-Proterozoic of Montana. *Geological Magazine*, v. 129, p. 223-237.
18. Schieber, J., and Ellwood, B.B., 1993, Determination of basinwide paleocurrent patterns in a shale sequence via anisotropy of magnetic susceptibility (AMS): A case study of the Mid-Proterozoic Newland Formation, Montana. *J. sediment. Petrol.*, v. 63, p. 874-880.
19. Schieber, J., 1994, Evidence for episodic high energy events and shallow water deposition in the Chattanooga Shale, Devonian, central Tennessee, U.S.A. *Sedimentary Geology*, v. 93, p. 193-208.
20. Schieber, J., 1995, Anomalous iron distribution in shales as a manifestation of non-clastic fluvial iron supply to sedimentary basins: Relevance for pyritic shales, base metal mineralization, and oolitic ironstone deposits. *Mineralium Deposita*, v. 30, p. 294-302.
21. Ellwood, B.B., Peter, D.E., Balsam, W., and Schieber, J., 1995, Magnetic and geochemical variations as indicators of paleoclimate and archeological site evolution: Examples from 41TR68, Fort Worth, Texas. *Journal of Archeological Science*, v. 22, p. 409-415.
22. Schieber, J., 1996, Early diagenetic silica deposition in algal cysts and spores: A source of sand in black shales? *Journal of Sedimentary Research*, v. 66, p. 175-183.
23. Schieber, J., 1998, Possible indicators of microbial mat deposits in shales and sandstones: Examples from the Mid-Proterozoic Belt Supergroup, Montana, U.S.A. *Sedimentary Geology*, v. 120, p. 105-124.
24. Schieber, J., 1999, Microbial Mats in Terrigenous Clastics: The Challenge of Identification in the Rock Record. *Palaios*, v. 14, p. 3-12.
25. Schieber, J., 1999, Distribution and deposition of mudstone facies in the Upper Devonian Sonyea Group of New York. *Journal of Sedimentary Research*, v. 69, p. 909-925.

26. Lobza, V., and Schieber, J., 1999, Biogenic sedimentary structures produced by worms in soupy, soft muds: Observations from the Chattanooga Shale (Upper Devonian) and experiments. *Journal of Sedimentary Research*, v. 69, p. 1041-1049.
27. Schieber, J., Krinsley, D., and Riciputi, L., 2000, Diagenetic origin of quartz silt in mudstones and implications for silica cycling. *Nature*, v. 406, p. 981-985.
28. Schieber, J., and Baird, G., 2001, On the origin and significance of pyrite spheres in Devonian black shales of North America. *Journal of Sedimentary Research*, v. 71, p. 155-166.
29. Schieber, J., 2001, Ways in which organic petrology could contribute to a better understanding of black shales. *International Journal of Coal Geology*, v. 47, p. 171-187.
30. Schieber, J. 2002, The Role of an Organic Slime Matrix in the Formation of Pyritized Burrow Trails and Pyrite Concretions. *Palaaios*, v. 17, p. 104-109.
31. Schieber, J., 2002, Sedimentary Pyrite: A window into the microbial past. *Geology*, v. 30, p. 531-534.
32. Schieber, J., and Arnott, H. J., 2003, Nannobacteria as a by-product of enzyme-driven tissue decay. *Geology*, v. 31, p. 717-720.
33. Schieber, J., 2003, Simple gifts and hidden treasures – Implications of finding bioturbation and erosion surfaces in black shales. *The Sedimentary Record*, v. 1, p. 4-8.
34. Schieber, J., and Riciputi, L., 2004, Pyrite ooids in Devonian Black Shales record intermittent Sea level drop and shallow water conditions. *Geology*, v. 32, p. 305-308.
35. Schieber, J., and Riciputi, L., 2005, Pyrite-marcasite coated grains in the Ordovician Winnipeg Formation, Canada: An intertwined record of surface conditions, stratigraphic condensation, geochemical “reworking”, and microbial activity. *Journal of Sedimentary Research*, v. 75, p. 905-918.
36. Sur, S., Schieber, J., and Banerjee, S., 2006, Petrographic observations suggestive of microbial mats from Rampur Shale and Bijaigarh Shale, Vindhyan basin, India. *Journal of Earth Systems Science*, v. 115, p. 61-66.
37. Milliken, K., Choh, S.-J., Papazis, P., and Schieber, J., 2007, “Cherty” stringers in the Barnett Shale are agglutinated foraminifera. *Sedimentary Geology*, v. 198, p. 221-232.
38. Schieber, J., 2007, Oxydation of Detrital Pyrite as a Cause for Marcasite Formation in Marine Lag Deposits from the Devonian of the Eastern US. *Deep Sea Research II*, v. 54, p. 1312-1326.
39. Ventura, G.T., Kenig, F., Reddy, C.M., Schieber, J., Frysinger, G., Nelson, R.K., Gaines, R.B., and Shaeffer, P., 2007, Molecular evidence of Late Archean archaea and the presence of a subsurface hydrothermal biosphere. *Proceedings of the National Academies of Sciences*, v. 104, p. 14260-14265.
40. Schieber, J., Southard, J.B., and Thaisen, K.G., 2007, Accretion of mudstone beds from migrating floccule ripples. *Science*, v. 318, December 14, 2007, p. 1760-1763.
41. Basu, A., Patranabis-Deb, S., Schieber, J., and Dhang, P.C., 2008, Stratigraphic Position of the ~1000 Ma Sukhda Tuff (Chhattisgarh Supergroup) and the 500 Ma question. *Precambrian Research*, v. 167, p. 383-388.
42. Patranabis-Deb, S., Schieber, J., and Basu, A., 2009, Almandine Garnet Phenocrysts in a ~1Ga Old Rhyolitic Tuff from Central India. *Geological Magazine*, v. 146, p. 133-143.
43. Schieber, J., 2009, Discovery of Agglutinated Benthic Foraminifera in Devonian Black Shales and Their Relevance for the Redox State of Ancient Seas. *Paleogeography, Paleoclimatology, Paleoecology*, v. 271, p. 292-300.
44. Over, J.D., Lazar, R., Baird, G.C., Schieber, J., and Ettensohn, F.R., 2009, Protosalvinia Dawson and associated conodonts of the upper Trachytera zone, Famennian, Upper Devonian, in the eastern United States. *Journal of Paleontology*, v. 83, p. 70-79.
45. Schieber, J., and Southard, J.B., 2009, Bedload Transport of Mud by Floccule Ripples – Direct Observation of Ripple Migration Processes and their Implications. *Geology*, v. 37, p. 483-486.
46. Schieber, J., and Yawar, Z., 2009, A New Twist on Mud Deposition - Mud Ripples in Experiment and Rock Record. *The Sedimentary Record*, v. 7/2, p. 4-8.
47. Glamoclija, M., Steele, A., Fries, M., Schieber, J., Voytek, M.A., and Cockell, C.S., 2009, Association of anatase (TiO₂) and microbes: Unusual fossilization effect or a potential biosignature? *Geol. Soc. Amer. Special Papers*, v. 458, p. 965-975.
48. Schieber, J., Southard, J.B., and Schimmelmann, A., 2010, Lenticular Shale Fabrics Resulting from Intermittent Erosion of Muddy Sediments – Comparing Observations from Flume Experiments to the Rock Record. *Journal of Sedimentary Research*, v. 80, p. 119-128.
49. Bickford, M.E., Basu, A., Patranabis-Deb, S., Dhang, P.C., and Schieber, J., 2011, Depositional History of the Chhattisgarh Basin, Central India: Constraints from New SHRIMP Zircon Ages. *The Journal of Geology*, v. 119, p. 33-50.
50. Regberg, A., K. Singha, M. Tien, F. Picardal, Q. Zheng, J. Schieber, E. Roden, and S. L. Brantley (2011), Electrical conductivity as an indicator of iron reduction rates in abiotic and biotic systems, *Water Resour. Res.*, 47, W04509, doi:10.1029/2010WR009551.
51. Schieber, J., 2011, Reverse Engineering Mother Nature – Shale Sedimentology from an Experimental Perspective. *Sedimentary Geology*, v. 238, p. 1-22.

52. Picardal, F.W., Zaybak, Z., Chakraborty, A., Schieber, J., and Szewzyk, U., 2011, Microaerophilic, Fe(II)-dependent growth and Fe(II) oxidation by a *Dechlorospirillum* species. *FEMS Microbiology Letters*, v. 319, p. 51-57.
53. Schieber, J., 2011, Marcasite in Black Shales—a Mineral Proxy for Oxygenated Bottom Waters and Intermittent Oxidation of Carbonaceous Muds. *Journal of Sedimentary Research*, v. 81, p. 447-458.
54. Bickford¹ M. E., Abhijit Basu², Arunangshu Mukherjee³, Jack Hietpas¹, Juergen Schieber², Sarbani Patranabis-Deb⁴, Ranjan Ray⁵, Rajeeva Guhey⁶, Purbasha Bhattacharya⁴, and Pratap Dhang⁴, 2011. New U-Pb SHRIMP Zircon Ages of Tuffs in the Mesoproterozoic Chhattisgarh Basin, Peninsular India: The Significance of a 1 Ga Thermal-Magmatic Event. *Journal of Geology*, v. 119, p. 535-548.
55. Chakraborty, A., Roden, E.E., Schieber, J., and Picardal, F., 2011, Enhanced Growth of *Acidovorax* sp. Strain 2AN during Nitrate-Dependent Fe(II) Oxidation in Batch and Continuous-Flow Systems. *Applied and Environmental Microbiology*, v. 77, p. 8548-8556.
56. Roden, E.E., McBeth, J.M., Blöthe, M., Percak-Dennett, E.M., Fleming, E.J., Holyoke, R.R., Luther, G.W., Emerson, D., and Schieber, J., 2012, The microbial ferrous wheel in a neutral pH groundwater seep. *Frontiers in Microbiology*, v. 3., p. 1-18.
57. Kenneth S. Edgett · R. Aileen Yingst · Michael A. Ravine · Michael A. Caplinger · Justin N. Maki · F. Tony Ghaemi · Jacob A. Schaffner · James F. Bell III · Laurence J. Edwards · Kenneth E. Herkenhoff · Ezat Heydari · Linda C. Kah · Mark T. Lemmon · Michelle E. Minitti · Timothy S. Olson · Timothy J. Parker · Scott K. Rowland · Juergen Schieber · Robert J. Sullivan · Dawn Y. Sumner · Peter C. Thomas · Elsa H. Jensen · John J. Simmonds · Aaron J. Sengstacken · Reg G. Willson · Walter Goetz, 2012, Curiosity's Mars Hand Lens Imager (MAHLI) Investigation. *Space Sci Rev.*, v. 170, p. 259-317; DOI 10.1007/s11214-012-9910-4
58. Mukherjee, A., Marion E. Bickford, M.E., Hietpas, J., Schieber, J. and Basu, A. 2012, Implications of a Newly Dated ca. 1000-Ma Rhyolitic Tuff in the Indravati Basin, Bastar Craton, India. *Journal of Geology*, v. 120, pp. 477-485 DOI: 10.1086/665796
59. Basu, A., Schieber, J., Patranabis-Deb, S., and Dhang, P.C., 2013, Recycled detrital quartz grains are sedimentary rock fragments indicating unconformities: examples from the Chhattisgarh Supergroup, Bastar craton, India. *Journal of Sedimentary Research*, v. 83, pp. 368–376.
60. Williams, R.M.E., J. P. Grotzinger, W. E. Dietrich, S. Gupta, D. Y. Sumner, R. C. Wiens, N. Mangold, M. C. Malin, K. S. Edgett, S. Maurice, O. Forni, O. Gasnault, A. Ollila, H. E. Newsom, G. Dromart, M. C. Palucis, R. A. Yingst, R. B. Anderson, K. E. Herkenhoff, S. Le Mouélic, W. Goetz, M. B. Madsen, A. Koefoed, J. K. Jensen, J. C. Bridges, S. P. Schwenzer, K. W. Lewis, K. M. Stack, D. Rubin, L. C. Kah, J. F. Bell III, J. D. Farmer, R. Sullivan, T. Van Beek, D. L. Blaney, O. Pariser, R. G. Deen, and MSL Science Team, 2013, Martian fluvial conglomerates at Gale Crater. *Science*, 31 May 2013, p. 1068-1072.
61. Stolper, E.M., M. B. Baker, M. E. Newcombe, M. E. Schmidt, A. H. Treiman, A. Cousin, M. D. Dyar, M. R. Fisk, R. Gellert, P. L. King, L. Leshin, S. Maurice, S. M. McLennan, M. E. Minitti, G. Perrett, S. Rowland, V. Sautter, R. C. Wiens, and MSL Science Team, 2013, The Petrochemistry of Jake_M: A Martian Mugarite. *Science*, 27 September 2013, online.
62. Meslin, P.Y., O. Gasnault, O. Forni, S. Schröder, A. Cousin, G. Berger, S. M. Clegg, J. Lasue, S. Maurice, V. Sautter, S. Le Mouélic, R. C. Wiens, C. Fabre, W. Goetz, D. Bish, N. Mangold, B. Ehlmann, N. Lanza, A.-M. Harri, R. Anderson, E. Rampe, T. H. McConnochie, P. Pinet, D. Blaney, R. Lévêillé, D. Archer, B. Barraclough, S. Bender, D. Blake, J. G. Blank, N. Bridges, B. C. Clark, L. DeFlores, D. Delapp, G. Dromart, M. D. Dyar, M. Fisk, B. Gondet, J. Grotzinger, K. Herkenhoff, J. Johnson, J.-L. Lacour, Y. Langevin, L. Leshin, E. Lewin, M. B. Madsen, N. Melikechi, A. Mezzacappa, M. A. Mischna, J. E. Moores, H. Newsom, A. Ollila, R. Perez, N. Renno, J.-B. Sirven, R. Tokar, M. de la Torre, L. d'Uston, D. Vaniman, A. Yingst, and MSL Science Team, 2013, Soil Diversity and Hydration as Observed by ChemCam at Gale Crater, Mars. *Science* 27 September 2013, online.
63. Bish, D.L., D. F. Blake, D. T. Vaniman, S. J. Chipera, R. V. Morris, D. W. Ming, A. H. Treiman, P. Sarrazin, S. M. Morrison, R. T. Downs, C. N. Achilles, A. S. Yen, T. F. Bristow, J. A. Crisp, J. M. Morookian, J. D. Farmer, E. B. Rampe, E. M. Stolper, N. Spanovich, and MSL Science Team, 2013, X-ray Diffraction Results from Mars Science Laboratory: Mineralogy of Rocknest at Gale Crater. *Science* 27 September 2013, online.
64. Blake, D.F., R. V. Morris, G. Kocurek, S. M. Morrison, R. T. Downs, D. Bish, D. W. Ming, K. S. Edgett, D. Rubin, W. Goetz, M. B. Madsen, R. Sullivan, R. Gellert, I. Campbell, A. H. Treiman, S. M. McLennan, A. S. Yen, J. Grotzinger, D. T. Vaniman, S. J. Chipera, C. N. Achilles, E. B. Rampe, D. Sumner, P.-Y. Meslin, S. Maurice, O. Forni, O. Gasnault, M. Fisk, M. Schmidt, P. Mahaffy, L. A. Leshin, D. Glavin, A. Steele, C. Freissinet, R. Navarro-González, R. A. Yingst, L. C. Kah, N. Bridges, K. W. Lewis, T. F. Bristow, J. D. Farmer, J. A. Crisp, E. M. Stolper, D. J. Des Marais, P. Sarrazin, and MSL Science Team. Curiosity at Gale Crater, Mars: Characterization and Analysis of the Rocknest Sand Shadow. *Science* 27 September 2013, Vol. 341, Issue 6153, 1239505, DOI: 10.1126/science.1239505
65. Webster, C.R., P.R. Mahaffy, S.K. Atreya, G.J. Flesch, K.A. Farley, and MSL Science Team, 2013, Low Upper Limit to Methane Abundance on Mars. *Science*, 18 October 2013, p.355-357.

66. Leshin, L.A., P. R. Mahaffy, C. R. Webster, M. Cabane, P. Coll, P. G. Conrad, P. D. Archer Jr., S. K. Atreya, A. E. Brunner, A. Buch, J. L. Eigenbrode, G. J. Flesch, H. B. Franz, C. Freissinet, D. P. Glavin, A. C. McAdam, K. E. Miller, D. W. Ming, R. V. Morris, R. Navarro-González, P. B. Niles, T. Owen, R. O. Pepin, S. Squyres, A. Steele, J. C. Stern, R. E. Summons, D. Y. Sumner, B. Sutter, C. Szopa, S. Teinturier, M. G. Trainer, J. J. Wray, J. P. Grotzinger, and MSL Science Team, 2013, Volatile, Isotope, and Organic Analysis of Martian Fines with the Mars Curiosity Rover. *Science* 27 September 2013, online.
67. Farley, K.A., C. Malespin, P. Mahaffy, J. P. Grotzinger, P. M. Vasconcelos, R. E. Milliken, M. Malin, K. S. Edgett, A. A. Pavlov, J. A. Hurowitz, J. A. Grant, H. B. Miller, R. Arvidson, L. Beegle, F. Calef, P. G. Conrad, W. E. Dietrich, J. Eigenbrode, R. Gellert, S. Gupta, V. Hamilton, D. M. Hassler, K.W. Lewis, S. M. McLennan, D. Ming, R. Navarro-González, S. P. Schwenzer, A. Steele, E. M. Stolper, D. Y. Sumner, D. Vaniman, A. Vasavada, K. Williford, R. F. Wimmer-Schweingruber, and the MSL Science Team, 2013, In Situ Radiometric and Exposure Age Dating of the Martian Surface. *Science*, 9 December 2013, online.
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364. Rapin, W. et al., 2023. NOT ALWAYS WET: AN ARIDIFICATION SEQUENCE IN THE ORBITAL CLAY-SULFATE TRANSITION OF AEOLIS MONS. 54th Lunar and Planetary Science Conference, abstract# 2085.
365. Gupta, S. et al., 2023. 'HIGH' BUT NOT SO DRY ON AEOLIS MONS: TRANSIENT LAKE SYSTEMS IN HESPERIAN DESERTS IN GALE CRATER. 54th Lunar and Planetary Science Conference, abstract# 2707.
366. Gupta, S., 2023. 'High'but Not So Dry on Aeolis Mons: Transient Lake Systems in Hesperian Deserts in Gale Crater. LPI Contributions, v. 2806, p. 2707.
367. Dietrich, W.E., et al., 2023. IMPLICATIONS OF THE LOCAL TOPOGRAPHY OF THE MARKER BAND CONTACT, GALE CRATER. 54th Lunar and Planetary Science Conference, abstract# 1421.
368. Thompson, L.M., et al., 2023. INVESTIGATION OF THE GALE CRATER MARKER BAND (AND BEYOND) WITH THE MARS SCIENCE LABORATORY, ALPHA PARTICLE X-RAY SPECTROMETER. 54th Lunar and Planetary Science Conference, abstract# 2311.
369. Gasda, P.J., et al., 2023. CHEMCAM OBSERVATIONS OF THE MARKER BAND, GALE CRATER, MARS. 54th Lunar and Planetary Science Conference, abstract# 2389.
370. Lewis, K., et al., 2023. RHYTHMIC STRATIGRAPHY AT THE ORBITAL MARKER BED AT MOUNT SHARP, GALE CRATER, MARS. 54th Lunar and Planetary Science Conference, abstract# 2887.
371. Schieber, J. et al., 2023. TWO SIDES OF THE SAME COIN? BENEFITS OF COMPARATIVE STUDY OF MUDSTONES FROM EARLY MARS AND EARTH. 36th International Meeting of Sedimentology, abstract volume.
372. Schieber, J. et al., 2023. A New Portal to Sediment Provenance: Prima Facie Identification of Source Rocks via High-End Mudstone Petrography - Illustrated with Examples from the Quaternary of the Central Adriatic. AAPG Annual Meeting in Houston, 8/28-9/1/2023.
373. Gupta, S., et al., 2023. Rippled to Bits: Tales of Transient Lakes in a Martian Desert. 2023 AGU Meeting in San Francisco. Conference Proceedings.
374. Kite, E.S., et al., 2023. Metal Enrichment of Wave-Rippled Sediments on Ancient Mars. 2023 AGU Meeting in San Francisco. Conference Proceedings.
375. Runze, M., et al., 2023. The sediment transport mechanics driving lateral accretion in muddy meanders. 2023 AGU Meeting in San Francisco. Conference Proceedings.
376. Rapin, W., et al., 2023. Aridification sequence and formation of sulfates in Aeolis Mons, Gale crater. Fluvial Aeolian InteRactions on PLANetarY surfaces workshop, hosted by ESA, in Noordwijk, Netherlands.
377. Caravaca, G., et al. 2023. Still flowing: the fluvial structures of the Prow outcrop in the arid lower sulfate unit of Gale crater (Mars). International Conference on Fluvial Sedimentology 2023
378. Gupta, S., et al. 2023. Aeolian-fluvial-lacustrine interactions recorded in the stratigraphy of Aeolis Mons, Gale crater. Fluvial Aeolian InteRactions on PLANetarY surfaces workshop, hosted by ESA, in Noordwijk, Netherlands.
379. Kite, E., et al. 2023. Martian canyon scoured by upslope winds. AAS/Division for Planetary Sciences Meeting Abstracts, 2023
380. Schieber, J. et al., 2024. On the Remarkable Resiliency of Evaporitic Lacustrine Laminites in the Mudstone Dominated Mt. Sharp Group, Gale Crater, Mars. 55th Lunar and Planetary Science Conference, abstract# 1342
381. Schieber, J. et al., 2024. Evaporitic Lacustrine Laminites and Prodelta Mudlobes in the Hartmann's Valley Member of the Murray Formation at Mt. Sharp – Depositional Continuity from the Underlying Pahrump Hills Member. 55th Lunar and Planetary Science Conference, abstract# 1344
382. Edgar, L. et al., 2024. Wet to Dry Depositional Environments Recorded in the Clay-Sulfate Transition Region in Gale Crater, Mars: Overview and Stratigraphic Context for Curiosity's Exploration Campaign. 55th Lunar and Planetary Science Conference, abstract# 1016

383. Banham, S. et al., 2024. Diagenesis is Controlled by Primary Aeolian Depositional Processes in the Mirador Formation (Gale Crater, Mars). 55th Lunar and Planetary Science Conference, abstract# 2356
384. Gasda, PJ, ES Kite, LM Thompson, CA Mondro et al., 2024. The Amapari marker band, Gale crater, Mars: Metal enrichments and potential mechanisms of formation. Tenth International Conference on Mars 2024
385. Rapin, W., G Dromart, J Schieber et al. 2024. Sulfate-Bearing Strata Sequence Extends Early Mars Environments Conducive to Prebiotic Evolution. Tenth International Conference on Mars 2024
386. Zhou, DH, ML Turner, W Rapin, et al. 2024. Recently Observed Trends in Ventifact Orientation at Gale Crater, Mars: How Does Topography Affect Abrasive Wind Flow? LPI Contributions, 2024
387. Caravaca, G. et al. 2025. PROW & CO.: INSIDE THE FLUVIAL LENSES OF GALE'S LOWER SULFATE UNIT. 56th Lunar and Planetary Science Conference, abstract# 2356
388. Rapin, W. et al. 2025. SIDERITE-RICH LAMINAE AT THE MARKER BAND LOWER CONTACT IN GALE CRATER. 56th Lunar and Planetary Science Conference, abstract# 2356
389. Schieber, J. et al. 2025. Mostly aeolian or lacustrine? A sedimentary & petrographic perspective on the depositional setting of Upper Contigo through Chenapau strata (Mirador formation), Gale Crater, Mars. 56th Lunar and Planetary Science Conference, abstract# 2356
390. Mondro, C. et al. 2025. DEPOSITIONAL ENVIRONMENT AND PALEOCLIMATE IMPLICATIONS OF THE AMAPARI MARKER BAND WAVE RIPPLES. 56th Lunar and Planetary Science Conference, abstract# 2159
391. AMB sedimentology. 56th Lunar and Planetary Science Conference, abstract#
392. Zhang, Z., et al. 2025. Preliminary results from petrographic examination of pelagic deposits from Site U1385 (IODP Expedition 401). 38th International Meeting of Sedimentology in Huelva, Spain. June 26-28, 2025.
393. Li, Z., et al. 2025. Detailed facies analysis of the Cenomanian-Turonian Greenhorn Formation near Pueblo, Colorado, USA, through an integrated sedimentologic and organic petrology analysis. 38th International Meeting of Sedimentology in Huelva, Spain. June 26-28, 2025.
394. Wilson, R. et al. 2025. Shales across Scales: Building 3D physics-based models to capture predictive depositional relationships in Shale & Tight Rocks. 38th International Meeting of Sedimentology in Huelva, Spain. June 26-28, 2025.
- Catena, S. et al. 2025. High-resolution pollen and multi-proxy analysis to reconstruct paleo depositional events from a stratigraphically expanded Holocene succession (Po Delta, Italy). 38th International Meeting of Sedimentology in Huelva, Spain. June 26-28, 2025.
395. Yawar, Z. et al. 2025. Experimental co-deposition of sand and flocculated mud from moving muddy suspensions - implications for shale sedimentology. 38th International Meeting of Sedimentology in Huelva, Spain. June 26-28, 2025.
396. Li, Z. et al. 2025. An integrated petrographic and XRD analysis of sediments at Sites U1610 and U1611 (IODP Expedition 401): Implications for grain size, depositional conditions, and sediment provenance. 38th International Meeting of Sedimentology in Huelva, Spain. June 26-28, 2025.
397. Schieber, J. et al. 2025. Shale Facies in the Amungee Member of the Middle Proterozoic Velkerri Formation (Beetaloo Basin) – Experiment based assessment of depositional conditions for the World's Oldest Gas Shale. 38th International Meeting of Sedimentology in Huelva, Spain. June 26-28, 2025.

INVITED PRESENTATIONS/LECTURES

(142 total; without published abstract)

1. Microbial Mats and Precambrian Metallogeny. Lecture at the University of Tübingen, West Germany, November 14th 1989.
2. Fossil Microbial Mats in Terrigenous Clastics and Associated Sulphide Mineralization. Lecture at the University of Oldenburg, West Germany, November 17th 1989.
3. Stratabound Sulfide Mineralization in the Proterozoic Belt Basin. Lecture at Arizona State University, Tempe, April 9th 1991.
4. Microbial Mats as Surface Stabilizers in Terrigenous Sediments of the Belt Supergroup. Lecture at Ruhr-Universität Bochum, July 2nd 1991.
5. An Overview of the Depositional History of the Belt Basin, Mid-Proterozoic of Montana. Lecture at Freie Universität Berlin, Berlin, Germany, July 4th 1991.
6. An Overview of the Depositional History of the Belt Basin, Mid-Proterozoic of Montana. Lecture at Universität Tübingen, Tübingen, Germany, July 9th 1991.
7. Geochemical Data from the Belt Supergroup in the Context of Basin Evolution. Lecture at Max-Planck Institut für Geochemie, Mainz, Germany, July 18th 1991.
8. Geochemical Data from the Belt Supergroup in the Context of Basin Evolution. Lecture at Department of Earth Sciences, National Cheng Kung University, Tainan, Taiwan, R.O.C., January 10th 1992.
9. Sedimentologic, geochemical, and mineralogical features of the Belt Series and their bearing on the lacustrine vs marine debate. Presentation, Belt Symposium III, Whitefish, Montana, August 1993.
10. Early silica diagenesis in shales. Presentation, Clastic Diagenesis Research Group, AAPG Meeting in Houston, March 5 1995.
11. Sedimentologic, geochemical, and mineralogical features of the Belt Series and their bearing on the lacustrine vs marine debate. Lecture, Texas Tech University, Lubbock, April 24, 1995.

12. New sedimentologic observations on the Upper Devonian Chattanooga Shale of Tennessee and Kentucky, and their bearing on the deposition and origin of black shales. Lecture, University of Iowa, Iowa City, September 9th, 1997.
13. Upper Devonian black shales of the eastern US: Results of sedimentologic and sequence stratigraphic investigations. Lecture, University of Mainz/Germany, November 13th, 1997.
14. Upper Devonian black shales of the eastern US: Results of sedimentologic and sequence stratigraphic investigations. Lecture, University of Regina, Regina, Saskatchewan, Canada, December 3rd, 1997.
15. Sequence Stratigraphy and Depositional setting of the Late Devonian Chattanooga Shale: A shallow water black shale. Presentation, Exxon Production Research, Houston/TX, March 20, 1998.
16. Sedimentologic, geochemical, and mineralogical features of the Belt Series and their bearing on the lacustrine vs marine debate. Lecture, The University of Texas at Dallas, Richardson/TX, April 16, 1998.
17. Upper Devonian black shales of the eastern US: Results of sedimentologic and sequence stratigraphic investigations. Lecture, The University of Texas at Dallas, April 17, 1998.
18. A new look at an old shale: Implications of recent observations on the origin of the Chattanooga Shale in Tennessee. Lecture, Vanderbilt University, Nashville/TN, September 15, 1998.
19. A new look at an old shale: Implications of recent observations on the origin of the Chattanooga Shale in Tennessee. Lecture, Tennessee Tech University, Cookeville/TN, September 16, 1998.
20. Sequence stratigraphy in black shales: Results of recent stratigraphic studies in the Chattanooga Shale of Tennessee. Lecture, University of Kentucky, Lexington/KY, September 17, 1998.
21. Results of recent sequence stratigraphic studies in the Chattanooga Shale of Tennessee: Implications for regional correlations. Lecture, Indiana University, Bloomington/IN, September 22, 1998.
22. Results of recent sequence stratigraphic studies in the Chattanooga Shale of Tennessee: Implications for regional correlations. Lecture, University of Cincinnati, Cincinnati/OH, September 23, 1998.
23. Sedimentological Studies of Late Devonian Shales in the Eastern US: The Sequence Stratigraphic Consequences of New Sedimentologic and Petrographic Observations. Lecture, University of California, Riverside/CA, February 22, 1999.
24. Criteria to Identify Microbial Mat Deposits in the Terrigenous Clastic Rock Record: Learning from the Proterozoic to understand the Phanerozoic. Lecture, University of California, Riverside/CA, February 23, 1999.
25. Studying Shales for Fun and Profit. Lecture, Iowa State University, Ames/Iowa, February 7, 2000.
26. Studying Shales for Fun and Profit. Lecture, University of Cincinnati, Cincinnati/Ohio, September 22, 2000.
27. Of Mudstones, Microbes, and Mars. Lecture, Indiana University, Bloomington/Indiana, April 26, 2001.
28. Studying Shales for Fun and Profit (2nd edition). Lecture, Indiana University, Bloomington/Indiana, April 27, 2001.
29. Studying Shales for Fun and Profit (2nd edition). Lecture, University of Texas at Austin, Austin/Texas, October 15, 2001.
30. Studying Shales for Fun and Profit (2nd edition). Lecture, IUPUI, Indianapolis, October 3, 2003.
31. Studying Shales for Fun and Profit (2nd edition). Lecture, Purdue University, Lafayette/Indiana, December 4, 2003.
32. Tales of Pyrite Ooids: Small Grains – Big Implications. Lecture, University of Cincinnati, Cincinnati/Ohio, February 6, 2004.
33. The Potential Importance of Diagenetically Redistributed Biogenic Silica for the Gas Potential of the New Albany Shale. Workshop, 2004 Indiana Oil & Gas Association Annual Meeting. Evansville, Indiana, October 13, 2004.
34. Tales of Pyrite Ooids: Small Grains – Big Implications. Lecture, University of Texas, Austin/Texas, November 29, 2004.
35. Shale Studies at Indiana University. Lecture, ChevronTexaco, Houston, Texas, September 1, 2005.
36. Mudstones and Microbes – An Intimate Association. Lecture, University of Wisconsin, Madison, Wisconsin, November 10, 2005.
37. Studying Shales for Fun and Profit (3rd edition). Lecture, University of Wisconsin, Madison, Wisconsin, November 11, 2005.
38. Shale Provenance from Quartz Grains. Lecture, ExxonMobil Research Lab, Houston, Texas, November 29, 2005.
39. How Anoxic Was It? Lecture, ExxonMobil Research Lab, Houston, Texas, November 30, 2005.
40. The Key Roles of Mudstones for Unlocking Geological History and Understanding the Hydrocarbon System. Lecture, Louisiana State University, Baton Rouge, Louisiana, March 14, 2006.
41. The Eberswalde Deltaic Complex as a High Science-Return Target for the 2009 Mars Science Laboratory. Presentation, 1st Mars Science Lab Landing Site Conference, Pasadena, California, June 1, 2006.
42. Mars Unser Sedimentärer Nachbarplanet. Lecture at the University of Tübingen, Germany, July 27th, 2006.

43. Mars Unser Nachbarplanet, So Seltsam Vertraut und Doch So Anders. Lecture at the Rieskratermuseum, Nördlingen, Germany, August 3rd, 2006.
44. How Anoxic Was It? Lecture on black shales at the University of Köln, Germany, August 9th, 2006.
45. MSL Site: The Eberswalde Deltaic Complex. Presentation, 2nd Mars Science Lab Landing Site Conference, Pasadena, California, October 24, 2007.
46. Narrative of an Unrepentant Shale Geologist. Lecture at Texas A&M University, College Station, Texas, January 24th, 2008.
47. Mudstone Sedimentology: From Field Studies to Flume Studies. Lecture, ExxonMobil Research Lab, Houston, Texas, February 7, 2008.
48. Authigenic Silica in Mudstones: Impact on Porosity. Lecture, ExxonMobil Research Lab, Houston, Texas, February 8, 2008.
49. The Eberswalde Crater MSL Landing Site with Emphasis on Depositional Setting. Presentation, 3rd Mars Science Lab Landing Site Conference, Monrovia, California, September 16, 2008.
50. The Petrographic Study of Shales and Applications to Gas Shale Exploration. Presentation, Encana Inc., Denver, December 9, 2008.
51. Flume Studies of Mudstone Deposition and Erosion. Lecture, ExxonMobil Exploration and Production Co., Houston, Texas, February 4, 2009.
52. Petrography, Sedimentology, and Sequence Stratigraphy of Shales and Mudstones. Lecture, ExxonMobil Exploration and Production Co., Houston, Texas, February 12, 2009.
53. Flume Studies of Mudstone Deposition and Erosion. Lecture, ExxonMobil Upstream Research Co., Houston, Texas, March 26, 2009.
54. Flume Studies of Mudstone Deposition and Erosion. Lecture, University of Massachusetts/Amherst and Amherst College, Amherst, Massachusetts, April 10, 2009.
55. Reiseziel Mars – Die Suche Nach Einem Landplatz. Lecture at the Rieskratermuseum, Nördlingen, Germany, July 16th, 2009.
56. Narrative of an Unrepentant Shale Geologist. Lecture sponsored by Houston Geological Society and University of Houston, Houston, Texas, November 16th, 2009.
57. Production of Silt-Laminated Shales from Moving Suspensions: Flume Experiments and Analogs in Natural Settings. Lecture, ExxonMobil Exploration and Production Co., Houston, Texas, December 11, 2009.
58. Why Mudstones have a Key Role in Unlocking Geological History and Understanding the Hydrocarbon System. Lecture, Anadarko Petroleum Corp., Houston, Texas, August 17th, 2010.
59. The IU Shale Research Lab. Lecture, Anadarko Petroleum Corp., Houston, Texas, August 18th, 2010.
60. Why Mudstones have a Key Role in Unlocking Geological History and Understanding the Hydrocarbon System. Lecture, University of Houston, Houston, Texas, November 2nd, 2010.
61. Shale Research at Indiana University – An Overview. Lecture, Shell Oil Inc., Houston, Texas, November 3rd, 2010.
62. Scaling Up Shale Properties – A Billion Dollar Question Without Simple Answers. Lecture, Marathon Oil Inc., Houston, Texas, December 3rd, 2010.
63. Flume Studies of Shale Sedimentology - Implications for the Rock Record, Shale Microfabrics & Pore Development. Hedberg Conference: Critical Assessment of Shale Resource Plays; Austin, Texas, December 7th 2010
64. Reverse Engineering Mother Nature- The Significance of Experimental Mudstone Sedimentology. Houston Geological Society Applied Geoscience Conference - Applied Reservoir Characterization of US Gulf Region Mudrocks as Shale Gas/Oil Reservoirs. The Woodlands, Texas, February 7th, 2011.
65. Flume Studies of Shale Sedimentology - Implications for the Rock Record, Shale Microfabrics & Pore Development. Lecture, University of Vienna, Austria, August 10, 2011.
66. Flume Studies of Shale Sedimentology - Implications for the Rock Record, Shale Microfabrics & Pore Development. Schlumberger/TerraTek, Salt Lake City, Utah, September 19th, 2011.
67. The Benefits of Shale Petrography. Schlumberger/TerraTek, Salt Lake City, Utah, September 19th, 2011.
68. Flume Experiments with Clay-Silt-Carbonate Mud Mixtures: Depositional Processes, Observed Sedimentary Features, and their Potential Counterparts in the Rock Record. Houston Geological Society Applied Geoscience Mudrocks Conference. Houston, Texas, February 20th, 2012.
69. A Travelogue of Shale Research From the Precambrian to the Modern. Shell Oil Inc., Research Lab, Houston, Texas, February 22nd, 2012.
70. Flume Experiments with Clay-Silt-Carbonate Mud Mixtures: Depositional Processes, Observed Sedimentary Features, and their Potential Counterparts in the Rock Record. Lecture, Anadarko Petroleum Corp., The Woodlands, Texas, February 23rd, 2012.
71. Flume Research in Shale Sedimentology at Indiana University. Lecture, University of Southern Mississippi, Hattiesburg, MS, March 12th, 2012.

72. Shale Research as a Frontier and Opportunity. Lecture, University of Florida, Gainesville, FL, March 15th, 2012.
73. An Overview of Experimental Mudstone Sedimentology – Results of Experiments and Applications to the Rock Record. Keynote lecture, Geoshale 2012 Conference, Warsaw/Poland, May 15 2012.
74. An Overview of Experimental Mudstone Sedimentology – Results of Experiments, Co-Flocculation of Marine Organic Matter with Clays, and Applications to the Rock Record. Keynote lecture, Poland Shale Gas Summit 2012, Warsaw/Poland, May 18 2012.
75. Depositional Process – Fabric – Pore: Conceptualizing the connection between depositional regime, pore types, and porosity in mudstones. Statoil Research Conference, Trondheim, Norway, October 15-17, 2012.
76. The Mars Science Lab landing and recent geologic investigations in Gale Crater on Mars. Lecture, University of Minnesota, Minneapolis, MN, February 28th, 2013.
77. An Overview of Experimental Mudstone Sedimentology – Results of Experiments and Applications to the Rock Record. University of Minnesota, Minneapolis, MN, March 1st, 2013.
78. An Overview of Experimental Mudstone Sedimentology – Results of Experiments and Applications to the Rock Record. Presentation at core workshop with Field Trip 1, Organic-Rich Shales of New York AAPG Annual Meeting Pittsburgh, May 16-18 2013.
79. Depositional Process – Fabric – Pore: Conceptualizing the connection between depositional regime, pore types, and porosity in mudstones. Schlumberger Innovation Center, July 9 2013, Salt Lake City, Utah.
80. The Mars Science Lab Landing & Recent Geologic Investigations in Gale Crater on Mars. Lecture at the Rieskratermuseum, Nördlingen, Germany, July 8th, 2013.
81. An Overview of Experimental Mudstone Sedimentology – Results of Experiments and Applications to the Rock Record. (keynote) Gussow Geoscience Conference, October 15-17 2013, Banff, Alberta.
82. An Overview of Experimental Mudstone Sedimentology – Results of Experiments and Applications to the Rock Record. Rocky Mountain SEPM Section monthly meeting, November 26 2013, Denver, Colorado.
83. Depositional Process – Fabric – Pore: Conceptualizing the connection between depositional regime, pore types, and porosity in mudstones. Whiting Petroleum Corp. and Noble Oil Corp., Denver, Colorado, November 26 2013.
84. Depositional Process – Fabric – Pore: Conceptualizing the connection between depositional regime, pore types, and porosity in mudstones. Colorado School of Mines, Golden, Colorado, May 1 2014.
85. Depositional Process – Fabric – Pore: Conceptualizing the connection between depositional regime, pore types, and porosity in mudstones. Tulsa Geological Society, Tulsa, Oklahoma, May 27 2014.
86. Depositional Process – Fabric – Pore: Conceptualizing the connection between depositional regime, pore types, and porosity in mudstones. AAPG Distinguished Lecture, Fort Worth Geological Society, Fort Worth, Texas, October 22 2014.
87. Depositional Process – Fabric – Pore: Conceptualizing the connection between depositional regime, pore types, and porosity in mudstones. AAPG Distinguished Lecture, Four Corners Geological Society, Farmington, New Mexico, October 24 2014.
88. Depositional Process – Fabric – Pore: Conceptualizing the connection between depositional regime, pore types, and porosity in mudstones. AAPG Distinguished Lecture, Grand Junction Geological Society, Grand Junction, Colorado, October 27 2014.
89. Depositional Process – Fabric – Pore: Conceptualizing the connection between depositional regime, pore types, and porosity in mudstones. AAPG Distinguished Lecture, Montana Geological Society, Billings, Montana, October 29 2014.
90. Depositional Process – Fabric – Pore: Conceptualizing the connection between depositional regime, pore types, and porosity in mudstones. AAPG Distinguished Lecture, University of Utah, Salt Lake City, Utah, October 30 2014.
91. Mud Re-Distribution in Epicontinental Basins - Likely Processes and Examples. University of Utah, Salt Lake City, Utah, October 30 2014.
92. Contrasting Parameters of Deposition and Erosion of High vs. Low-Latitude Muddy Shelf Seas – An Experimental Perspective. Schlumberger-Terratek, Salt Lake City, Utah, October 31 2014.
93. An Overview of Experimental Mudstone Sedimentology – Results of Experiments and Applications to the Rock Record. AAPG Distinguished Lecture, Memorial University of Newfoundland, St. Johns, Newfoundland, February 9 2015.
94. Depositional Process – Fabric – Pore: Conceptualizing the connection between depositional regime, pore types, and porosity in mudstones. AAPG Distinguished Lecture, Queens University, Kingston, Ontario, February 10 2015.
95. Depositional Process – Fabric – Pore: Conceptualizing the connection between depositional regime, pore types, and porosity in mudstones. AAPG Distinguished Lecture, Illinois Geological Society, Mt. Vernon, Illinois, February 11 2015.

96. An Overview of Experimental Mudstone Sedimentology – Results of Experiments and Applications to the Rock Record. AAPG Distinguished Lecture, University of Tennessee, Knoxville, Tennessee, February 12 2015.
97. Depositional Process – Fabric – Pore: Conceptualizing the connection between depositional regime, pore types, and porosity in mudstones. AAPG Distinguished Lecture, Southern Illinois University, Carbondale, Illinois, February 13 2015.
98. Depositional Process – Fabric – Pore: Conceptualizing the connection between depositional regime, pore types, and porosity in mudstones. AAPG Distinguished Lecture, Cornell University, Ithaca, New York, April 27 2015.
99. Depositional Process – Fabric – Pore: Conceptualizing the connection between depositional regime, pore types, and porosity in mudstones. AAPG Distinguished Lecture, West Virginia University, Morgantown, West Virginia, April 29 2015.
100. An Overview of Experimental Mudstone Sedimentology – Results of Experiments and Applications to the Rock Record. AAPG Distinguished Lecture, Auburn University, Auburn, Alabama, April 30 2015.
101. Depositional Process – Fabric – Pore: Conceptualizing the connection between depositional regime, pore types, and porosity in mudstones. AAPG Distinguished Lecture, University of Wisconsin, Madison, Wisconsin, May 1 2015.
102. The Connection Between Depositional Processes, Depositional History, Diagenesis, and Porosity in Shales - A Conceptual Perspective. Shales at all Scales Conference, in Santa Fe, New Mexico. Invited Lecture, conference organized by Sandia Labs, June 8-11 2015.
103. Depositional Process – Fabric – Pore: Conceptualizing the connection between depositional regime, pore types, and porosity in mudstones. Schlumberger Eureka Geology Community Webinar #1, January 20 2016.
104. The Journey of Curiosity through the Stratigraphy of Gale Crater, Mars - Roving 3.8 billion years back into the past at a snail's pace. Astronomisch-Physikalisches Kabinett & Planetarium, Kassel, Germany, April 27 2016.
105. A Conceptual Perspective on Processes that Deposit Mud and their Impact on Shale Fabrics and Future Pore Systems. Wintershall AG, Kassel, Germany, April 29 2016.
106. Depositional Process - Fabric - Pore: Conceptualizing the connection between depositional regime, pore types, and porosity in mudstones. University of Vienna, Austria, May 12 2016.
107. The Journey of Curiosity through the Stratigraphy of Gale Crater, Mars - Roving 3.8 billion years back into the past at a snail's pace. University of Vienna, Austria, May 19 2016.
108. The Journey of Curiosity through the Stratigraphy of Gale Crater, Mars - Roving 3.8 billion years back into the past at a snail's pace. University of Iasi, Romania, May 20 2016.
109. The Journey of Curiosity through the Stratigraphy of Gale Crater, Mars - Roving 3.8 billion years back into the past at a snail's pace. Rieskrater Museum, Noerdlingen, Germany, June 2 2016.
110. Directions in Shale Research. Marathon Oil, Houston, Tx, March 20 2017.
111. Directions in Shale Research. ExxonMobil Upstream Research Lab, Spring, Tx, March 22 2017.
112. Directions in Shale Research. Shell Oil Research Lab, Houston, Tx, March 22 2017.
113. Directions in Shale Research. Chevron Inc., Houston, Tx, March 23 2017.
114. The Journey of Curiosity through the Stratigraphy of Gale Crater, Mars - Roving 3.8 billion years back into the past at a snail's pace. NTU, Taipei, Taiwan, October 27 2017.
115. Exploration of Martian Geology and Surface Environments with the Curiosity Rover at Gale Crater, Mars. Academia Sinica, Taipei, Taiwan, October 30 2017.
116. Depositional Process - Fabric - Pore: Conceptualizing the connection between depositional regime, pore types, and porosity in mudstones. China Petroleum Corporation Research Lab, Miaoli, Taiwan, October 31 2017.
117. Flume Studies in Mudstone Sedimentology. ExxonMobil Upstream Research Lab, Spring, Tx, March 20 2018.
118. Directions in Shale Research. Anadarko Petroleum Corp., Houston, Texas, March 20, 2018.
119. Flume Studies of Mudstone Deposition and Erosion. Marathon Oil, Houston, Tx, March 19 2018.
120. Indications for sulfate evaporites in the Murray Formation. MSL Team meeting in Pasadena, 9/25 2018.
121. Directions in Shale Research. IOGA Annual meeting in New Harmony, Indiana, 10/11 2018.
122. With One Arm Tied Behind Your Back. Doing Geology by Proxy in a Faraway Place (Mars). Gallagher Lecture, University of Calgary, 11/6 2018.
123. Flume Studies of Mudstone Deposition and Erosion. Petrobras Research Lab, Rio De Janeiro, Brazil, 11/21 2018.
124. Directions in Shale Research. Petrochina Research Lab, Beijing, China, June 27, 2019.
125. Directions in Shale Research. University of Pretoria, South Africa, August 6, 2019.
126. Depositional Process – Fabric – Pore: Conceptualizing the connection between depositional regime, pore types, and porosity in mudstones. ENI Research Lab, Milan, Italy, September 6 2019.
127. Directions in Shale Research. Petrobras Research Lab, Rio De Janeiro, Brazil, 1/7 2020.

128. Directions in Shale Research. Department of Energy Resources and Petroleum Energy, King Abdullah University of Science and Technology, Saudi Arabia, 4/28/2021.
129. On the Accumulation of Mud –Changing the Paradigm was the Easy Part. Keynote address, 21st Argentinian Geological Congress, Puerto Madryn, Argentina, March 2022.
130. With One Arm Tied Behind Your Back. Doing Geology by Proxy in a Faraway Place (Mars). NASA outreach, University of Adelaide, 8/19/2022.
131. With One Arm Tied Behind Your Back. Doing Geology by Proxy in a Faraway Place (Mars). NASA outreach, CABSIV Conference, Darwin, 8/26/2022.
132. New Horizons in Shale Sedimentology. University of Padua, Italy, 5/16 2023.
133. New Horizons in Shale Sedimentology. University of Bologna, Italy, 5/22 2023.
134. New Horizons in Shale Sedimentology. ISMAR, Bologna, Italy, 5/25 2023.
135. New Horizons in Shale Sedimentology. University of Göttingen, Germany, 5/30 2023.
136. Not all is Lost: How we study mudstones on Mars without thin sections and make a virtue of necessity. Niedersächsische Akademie der Wissenschaften, Göttingen, Germany, 6/1/2023.
137. Not all is Lost: How we study mudstones on Mars without thin sections and make a virtue of necessity. Plenary Lecture, 36th International Meeting of Sedimentology, Dubrovnik, Croatia, 6/15/2023.
138. Not all is Lost: How we study mudstones on Mars without thin sections and make a virtue of necessity. University of Florence, Italy, 4/17/2024.
139. Accretion of muddy successions via bedload transport of mud aggregates. 1st Advanced Course on Deepwater Sedimentary Systems. University of Granada, Spain, 9/24/2024
140. Not all is Lost: How we study mudstones on Mars without thin sections and make a virtue of necessity. China University of Geosciences, Beijing, 11/21/2024.
141. Not all is Lost: How we study mudstones on Mars without thin sections and make a virtue of necessity. Yangtze University, Wuhan, 11/26/2024.
142. Not all is Lost: How we study mudstones on Mars without thin sections and make a virtue of necessity. China University of Geosciences, Wuhan, 11/28/2024.
143. Bedforms on mudstone. The Drifters “Virtual Get-Together (VGT) sharing series”, April 8 2025

ACTIVITIES IN PROFESSIONAL ORGANIZATIONS

Chairman of Sedimentology Session at 1987 GSA meeting in Phoenix, Arizona.

Reviewed papers for: *Geology*, *Journal of Sedimentary Petrology*, *Journal of Sedimentary Research*, *Sedimentology*, *Sedimentary Geology*, *Marine Geology*, *GSA Bulletin*, *Chemical Geology*, *Lithos*, *Geochimica et Cosmochimica Acta*, *Nature*, *Palaaios*, *Naturwissenschaften*, *Science*, *Ocean Drilling Program (ODP)*, *Marine & Petroleum Geology*, *Icarus*, *Applied and Environmental Microbiology*, *Journal of Geophysical Research*, *Journal of the Geological Society (London)*, *Geobiology*, *Meteoritics & Planetary Science*, and the *Journal of the Texas Society for Electron Microscopy*.

Reviewed proposals for NSF, Petroleum Research Fund, NASA, NERC (Britain), National Geographic Society, Volkswagenstiftung (Germany). DFG (German Science Foundation), Department of Energy (DOE).

Participation in organization of 1993 Belt Symposium.

Organizer and Chairman of Symposium on Shale Research at the Annual GSA Meeting in New Orleans, November 9th 1995.

Chief editor of a Symposium Volume: **Shales and Mudstones, vol 1: Basin Studies, Sedimentology and Paleontology (384pp)**, **vol 2: Petrography, Petrophysics, Geochemistry, and Economic Geology (296pp)**. Schweizerbart'sche Verlagsbuchhandlung, Stuttgart. Symposium Volume, 25 research papers, 9 review articles.

Chairman of Paleontology, Stratigraphy, and Sedimentology Session at 1999 South-Central Section GSA meeting in Lubbock, Texas.

Judging oral presentations at the annual AAPG meeting in Denver, June 2000.

Vice President of Great Lakes Section of SEPM, Fall 2003 to present.

Organizer and leader of 2004 GLS SEPM Field Conference.

Convener of a two day SEPM Research Symposium on mudstone geology for the 2005 AAPG/SEPM meeting in Calgary.

Editorial Board of *GEOLOGY*, 2005-2008.

Invited Speaker at “Shale Workshop” for employees of ChevronTexaco Inc., Houston, Texas, 9/1/2005-9/2/2005.

Invited Speaker at “Fine-Grained Rock Symposium”, Exxon Production Research, Houston, Texas, 11/29/2005-11/30/2005.

Chief editor of a Geological Atlas: **Atlas of Microbial Mat Features Preserved within the Siliciclastic Rock Record**, Volume 2 of Atlases in Geoscience, 450 pp. Elsevier, Amsterdam, 450pp.

Chair and Organizer of a Session on Martian Sedimentary Geology, "Geoscience in Orbit: Sedimentology on Mars and Titan", at the Annual AAPG Convention in Long Beach/CA, April 1-4, 2007.

Chair and Organizer of a Session on Martian Sedimentary Geology, "Up Close and Personal: Geology on Mars and Earth at the Handlens Scale", at the Annual GSA Meeting in Denver, October 28-31, 2007.

Co-leader of NAPC field trip to the Paleozoic of Kentucky and Indiana, June 24th, 2009.

Co-leader of NAPC field trip to the Devonian of Kentucky, June 27th, 2009.

Leader of AAPG field trip to the Devonian black shales of Kentucky and Indiana, September 19th, 2009.

Chairman of Session - Sediments, Clastic: New Insights to Old Problems, at 2009 Annual GSA meeting in Portland, Oregon.

Panel Member – NSF Sedimentary Geology and Paleobiology Panel, 2009.

Co-leader of AAPG Short Course on Mudstones and Shales, "Sequence-Stratigraphic Analysis of Shales: Key to Paleoclimate Archives, Subsurface Fluid Flow and Hydrocarbon Source, Reservoir and Seal", at 2010 Annual AAPG meeting in New Orleans, April 10th 2010.

Leader of field trip to the Devonian black shales of Tennessee, Kentucky and Indiana, "Sedimentology and Stratigraphy of Shales: Expression and Correlation of Depositional Sequences in the Devonian of Tennessee, Kentucky and Indiana", for the 2010 Annual AAPG meeting in New Orleans, April 21-25 2010.

Invited speaker, AAPG Hedberg Research Conference, “Critical Assessment of Shale Resource Plays”, December 5-10, 2010 – Austin, Texas.

Co-leader of AAPG Short Course on Mudstones and Shales, "Sequence-Stratigraphic Analysis of Shales: Key to Paleoclimate Archives, Subsurface Fluid Flow and Hydrocarbon Source, Reservoir and Seal", at 2011 Annual AAPG meeting in Houston, April 9th 2011.

Scientific Committee, Geoshale 2012 Conference, Recent Advances in Geology of Fine-Grained Sediments; May 14-16, 2012 – Warsaw, Poland.

Invited speaker, Geoshale 2012 Conference, May 15, 2012 – Warsaw, Poland.

Invited speaker, Poland Shale Gas Summit 2012, May 18, 2012 – Warsaw, Poland.

Chairman of Session – Mars Science Laboratory II: Soils and Rocks. Special Session, 44th Lunar and Planetary Science Conference, Houston, March 18th 2012.

Co-Leader of field trip to the Ordovician and Devonian black shales of New York, Tennessee, Kentucky and Indiana, "Organic-Rich Shales of New York", for the 2013 Annual AAPG meeting in Pittsburgh, May 15-18 2013.

Leader of field trip to the Devonian black shales of Ohio and Kentucky, "Sedimentology and Stratigraphy, Stratal Packaging, and Sedimentology of Devonian Shales in Ohio and Kentucky", for the 2013 Annual AAPG meeting in Pittsburgh, May 23-24 2013.

Co-Chair and Organizer of a Session on Martian Geology, "Curiosity at Gale—Past and Present Environments of Mars", at the Annual GSA Meeting in Denver, October 27, 2013.

Chair, Organizer, and Keynote Speaker of a Session on Shale Sedimentology at the 2103 Gussow Conference in Banff, Alberta, “Importance of Rock Properties in Unconventional Reservoirs”. October 15-17, 2013.

Instructor, CSPG Short Course , “Description and Interpretation of Shale Facies”, Calgary, Alberta, October 18, 2013.

Invited speaker, AAPG Hedberg Research Conference, “Latitudinal Controls on Stratigraphic Models and Sedimentary Concepts. Banff, Alberta, September 28 – October 1, 2014.

Chair and Organizer of a Session on Mudstone Geology, "Mud Deposition", at the Annual GSA Meeting in Vancouver, October 20, 2014.

Executive Editor, Geological Magazine, since 2014.

Lecture tour in Canada and the US as AAPG Distinguished Lecturer, Fall 2014 - Spring 2015.

Instructor, AAPG Short Course , “Description and Interpretation of Shale Facies”, Tulsa, Oklahoma, March 25-26, 2015.

Co-leader of AAPG Short Course on Mudstones and Shales, "Sequence-Stratigraphic Analysis of Shales: Key to Paleoclimate Archives, Subsurface Fluid Flow and Hydrocarbon Source, Reservoir and Seal", at 2015 Annual AAPG meeting in Denver, May 30th 2015.

Session Chair and Organizer, Depositional and Diagenetic Processes in Shales and Mudstones, at the Annual AAPG Meeting in Denver, June 1 2015.

Invited Speaker, Sandia Lab conference on shales, “Shales at all Scales”, Santa Fe, New Mexico, June 8-11 2015.

Organize session on mud deposition for the 2015 AGU Fall Meeting in San Francisco.

Visiting professor, University of Vienna, Spring 2016

Organize and chair sessions for the 2016 AAPG meeting in Calgary.

Instructor, AAPG Short Course on Mudstones and Shales, "Sequence-Stratigraphic Analysis of Shales: Key to Paleoclimate Archives, Subsurface Fluid Flow and Hydrocarbon Source, Reservoir and Seal", at 2016 Annual AAPG meeting in Calgary, June 18th 2016.

Instructor, AAPG Short Course on Mudstones and Shales, "Sequence-Stratigraphic Analysis of Shales: Key to Paleoclimate Archives, Subsurface Fluid Flow and Hydrocarbon Source, Reservoir and Seal", at 2017 Annual AAPG meeting in Houston, April 1st 2017.

Invited Speaker, 5th Workshop of Oil Exploration & Production New Technologies, China University of Petroleum, Qingdao, China, June 11-15, 2017.

Organize and chair sessions for the 2018 International Sedimentologic Congress in Quebec City, Canada.

Instructor, AAPG Short Course on Mudstones and Shales, "Sequence-Stratigraphic Analysis of Shales: Key to Paleoclimate Archives, Subsurface Fluid Flow and Hydrocarbon Source, Reservoir and Seal", at 2018 Annual AAPG meeting in Salt Lake City, May 19st 2018.

Panel Member – NASA Astrobiology Panel, 2018.

Organize and Chair session on mud deposition for the 2019 International Sedimentologic Congress in Rome, Italy.

Organize and Chair session on mud deposition for the 38th International Meeting of Sedimentology in Huelva, Spain.2025.

Organize and Chair session on mud deposition for the 22nd International Sedimentological Congress (ISC) to be held in New Zealand in 2026.

GRANT SUPPORT

<u>Miscellaneous Small Grants (\$5000 or less), 1987-1993</u>		<u>Subtotal: \$47,720</u>
1989	A Paleocurrent Study in Shale units of the Belt basin using Anisotropy of Magnetic Susceptibility data, Petroleum Research Fund (ACS), \$18,000. Testing the Feasibility of Anisotropy of Magnetic Susceptibility (AMS) as a Measure of Paleocurrent Flow in Shales, Advanced Research Program (ARP, Texas), \$42,863.	
1991	A comparative study of shale sedimentology: Relationship between sedimentary environments and shale fabric, National Science Foundation, \$70,000. Shale microfabrics and their relationship to mesofabrics and sedimentary environments: A case study of the Newland Formation, Montana, Petroleum Research Fund (ACS), \$35,000.	
1994	Exploring the origin of large scale erosion surfaces in the Chattanooga Shale: Testament of mud-bank migration? PRF/ACS, \$50,000.	
1996	Potential Sequence Boundaries in the Chattanooga Shale: A Study of their Nature, Implications for Basin Evolution, and the Origin of Black Shales. PRF/ACS, \$50,000.	
1997	A Study of the Origin and Significance of Pyrite Ooids: NSF, \$99,000.	
1998	Sequence Stratigraphy of the Late Devonian Black Shale Complex of the Eastern US: A Study of the Nature of Sequence Boundaries, Basin Dynamics, and the Origin of Black Shales. PRF/ACS, \$60,000.	
2000	Can Scanned Cathodoluminescence (SEM-CL) of Quartz Silt be Applied to Provenance Studies of Mudstones? A Feasibility Study. NSF, \$105,000.	

- 2001 A Study of Petrophysical Properties of Shales in a Sequence Stratigraphic Context, with special Emphasis on Sealing Capacity. Texaco Inc., \$50,000
- 2002 Evaluating Models for Late Devonian Black Shale Formation in the Eastern US: Integrating Sequence Stratigraphy, Sedimentology, Petrography, and Geochemical Proxies. ACS/PRF, \$120,000
- 2003 Experimental Mudstone Sedimentology – An Attempt at Reverse Engineering of Natural Processes. NSF, \$215,483
- 2003 Acquisition of a New Environmental SEM (ESEM) Optimized for Advanced Microcharacterization of Samples (EDS, EBSD, CL), NSF, \$200,000; (plus \$250,000 IU match[not counted for total]; \$25,000 from Grassmann Foundation; and additional funds to a total of \$500,000).
- 2004 MAHLI – Mars HandLens Imager for the Mars Science Laboratory, NASA, \$304,338 (IU/J.S. portion) (Co-I, with K. Edgett (PI) of Malin Space Science Systems).
- 2005 Collaborative Research: Adaptive response of microbial communities and Fe biomineralization pathways to anaerobic redox cycling of Fe and N in sediments, NSF, \$246,552 (Co-PI with Flynn Picardal, SPEA).
Investigating Morphological and Isotopic Biosignatures of Terrestrial Iron Bacteria – A Potential Mars Analog, NASA, \$206,905.
- 2006 Characterization of Hydrothermal Deposits and Microbial Biomarkers from a Submarine Plateau North of Panarea Island, Tyrrhenian Sea, Italy, IU Faculty Research Support Program, \$17,109.
Grant in Support of Shale Research, Exxon, \$20,000.
Experimental Mudstone Sedimentology: Evolving Methodology, Measuring Thresholds and Rates, Investigating Processes. NSF, \$270,993
- 2007 Grant in Support of Shale Research, Exxon, \$10,000.
- 2008 Experimental Study of Processes Producing Polygonal Patterns in Evaporite Bearing Martian Sediments and Sedimentary Rocks. NASA, \$287,221.
- 2009 Grant in Support of Shale Research, Exxon, \$73,980.
Collaborative Research ETBC: Combined Experimental and Theoretical Study of the Physical Mechanisms Underlying Deposition, Degradation and Preservation of Marine Organic Carbon. NSF, \$2,000,000.
- 2010 Grant in Support of Shale Research, Exxon, \$50,000.
IU Shale Research Consortium, Anadarko Oil Inc., \$50,000.
- 2011 IU Shale Research Consortium, Shell Oil Inc., \$50,000.
IU Shale Research Consortium, Marathon Oil Inc., \$50,000.
IU Shale Research Consortium, Chevron Inc., \$50,000.
Shale Gas: Geochemical and Physical Constraints on Genesis, Storage, and Producibility. DOE, \$583,400.
- 2012 IU Shale Research Consortium, Anadarko Oil Inc., \$50,000.
IU Shale Research Consortium, Shell Oil Inc., \$50,000.
IU Shale Research Consortium, Marathon Oil Inc., \$50,000.
IU Shale Research Consortium, Chevron Inc., \$50,000.
Malin Space Science Systems, Mars Science Lab Subcontract, \$361,553.
Grant in Support of Shale Research, Exxon, \$24,400.
- 2013 IU Shale Research Consortium, Anadarko Oil Inc., \$50,000.
IU Shale Research Consortium, Shell Oil Inc., \$50,000.
IU Shale Research Consortium, Marathon Oil Inc., \$50,000.
IU Shale Research Consortium, Chevron Inc., \$50,000.
IU Shale Research Consortium, ConocoPhillips Inc., \$50,000.
- 2014 IU Shale Research Consortium, Wintershall AG, \$50,000.
IU Shale Research Consortium, Anadarko Oil Inc., \$50,000.
IU Shale Research Consortium, Shell Oil Inc., \$50,000.
IU Shale Research Consortium, Marathon Oil Inc., \$50,000.
IU Shale Research Consortium, Chevron Inc., \$50,000.

IU Shale Research Consortium, ConocoPhillips Inc., \$50,000.
 IU Shale Research Consortium, Statoil Inc., \$50,000.
 IU Shale Research Consortium, Whiting Petroleum Corp., \$50,000.
 Shale Gas: Geochemical and Physical Constraints on Genesis, Storage, and Producibility. DOE, \$300,000.
 2015 IU Shale Research Consortium, Wintershall AG, \$50,000.
 IU Shale Research Consortium, Anadarko Oil Inc., \$50,000.
 IU Shale Research Consortium, Shell Oil Inc., \$50,000.
 IU Shale Research Consortium, Marathon Oil Inc., \$50,000.
 IU Shale Research Consortium, ConocoPhillips Inc., \$50,000.
 IU Shale Research Consortium, Statoil Inc., \$50,000.
 IU Shale Research Consortium, Whiting Petroleum Corp., \$50,000.
 Malin Space Science Systems, Mars Science Lab Subcontract, \$244,139.
 2016 IU Shale Research Consortium, Anadarko Oil Inc., \$50,000.
 IU Shale Research Consortium, Marathon Oil Inc., \$50,000.
 IU Shale Research Consortium, Shell Oil Inc., \$50,000.
 Malin Space Science Systems, Mars Science Lab Subcontract, \$281,352.
 Shale Gas: Geochemical and Physical Constraints on Genesis, Storage, and Producibility. DOE, \$ 217,700.
 IU Shale Research Consortium, Whiting Petroleum Corp., \$50,000.
 2017 IU Shale Research Consortium, Marathon Oil Inc., \$50,000.
 ExxonMobil Upstream Research Lab, \$30,000.
 China National Petroleum Corporation, \$60,000
 2018 IU Shale Research Consortium, Marathon Oil Inc., \$50,000.
 ExxonMobil Upstream Research Lab, \$30,000.
 China National Petroleum Corporation, \$60,000
 IU Shale Research Consortium, Chevron Inc., \$50,000
 Malin Space Science Systems, Mars Science Lab Subcontract, \$156,730
 2019 ExxonMobil Upstream Research Lab, \$30,000.
 China National Petroleum Corporation, \$80,000
 IU Shale Research Consortium, Chevron Inc., \$50,000
 Malin Space Science Systems, Mars Science Lab Subcontract, \$120,000
 2020 ExxonMobil Upstream Research Lab, \$58,857.
 China National Petroleum Corporation, \$60,000
 IU Shale Research Consortium, Chevron Inc., \$50,000
 Malin Space Science Systems, Mars Science Lab Subcontract, \$120,000
 2021 ExxonMobil Upstream Research Lab, \$58,857.
 IU Shale Research Consortium, Chevron Inc., \$50,000
 Malin Space Science Systems, Mars Science Lab Subcontract, \$112,000
 2022 ExxonMobil Upstream Research Lab, \$58,857.
 Malin Space Science Systems, Mars Science Lab Subcontract, \$90,000
 IU Shale Research Consortium, Chevron Inc., \$50,000
 2023 IU Shale Research Consortium, Chevron Inc., \$50,000
 Malin Space Science Systems, Mars Science Lab Subcontract, \$81,000
 2024 IU Shale Research Consortium, Chevron Inc., \$50,000
 Malin Space Science Systems, Mars Science Lab Subcontract, \$90,000

Total: \$ 10,034,009

Classes Taught

Principles of Physical Geology (Geol. 1435)	Earth Systems (Geol 1425)
Earth Landforms (Geol. 1440)	Landscape Evolution (Geol. 3309)
Stratigraphy and Sedimentary Petrology (Geol. 3442)	Hydrogeology (Geol. 4320)
Sedimentology (Geol. 4443)	Sandstone Petrology (Geol. 5312)
Depositional Systems of Terrigenous Clastics (Geol. 5344)	Earth: Our Habitable Planet (G105)
Black Shale Seminar (G690)	Terrigenous Clastic Deposition (G690)
SEM Techniques (G690)	Physical Sedimentology (G591)
Shale Petrography (G690)	Black Shale Sedimentology (G690)
Journey to Mars (G121)	Regional Geology Field Trip (G420)

Graduate Students: 19 MS, 9 Ph.D.

Committee Service

(D)=department, (C)=college, (U)=university

UT Arlington: Scholarship Committee (D), Hydro/environmental geology committee, (D), Library Committee (D), Chairman Search Committee (D), Faculty Search Committees (D), Graduate Studies Committee (D), Committee on Science Learning Center (C), Committee on Grade Appeals (C), Science Newsletter Committee (C), Web Site Committee (C), REP Grant Committee (C), Grade Appeals Committee (C), Graduate Assembly (U), Scholarship, Loan, and Award Committee (U), Faculty Development Leave Nominating Committee (U), Tenure and Promotion Committee (C).

Indiana University: Graduate Studies Committee (D), Sedimentology Search Committees (D), Owen Award Committees (D), Machinshop Committee (D), Colloquium (D). IT Committee (D).

External Short Courses

AAPG/SEPM - Short Course on Mudstones and Shales, "Sequence-Stratigraphic Analysis of Shales: Key to Paleoclimate Archives, Subsurface Fluid Flow and Hydrocarbon Source, Reservoir and Seal". Taught at most annual AAPG meetings since 2010, last taught August 2024.

Canadian Society of Petroleum Geologists - Short Course. Description and Interpretation of Shale Facies 2016.

Qingdao University of Petroleum - Short Course. An introduction to Shale Research. 2017

Yangtze University – Short Course. An introduction to Shale Research. 2019

China University of Geosciences, Wuhan - Short Course. A Brief Survey of Shale Geology. 2021

Petroleum Exploration Society of Australia – Short Course (taught 2022 in Adelaide and Darwin). Description and Interpretation of Shale Facies.

China University of Geosciences, Wuhan - Short Course. Shale Sedimentology. 2022, 2023, 2024

External Academic and Civic Service

Board of Directors of the Arlington Montessori Academy (1994-2000)

Development of an Elementary Grade Science Curriculum for the Arlington Montessori Academy

Conducting an Elementary Level Summer Science Program for the Arlington Montessori Academy (1995, 1996, 1997, 1998)

Technical liaison to Fort Worth Museum of Science and Technology

Judge at Fort Worth Regional Science Fair.

Ellettsville Elementary Math and Science Fun Night, Presentations on Mars Research at IU, April 21st, 2006.

Demonstrations of Flume Experiment at 2006 Science Olympiad, May 18th 2006, IU Bloomington.

Presentation at the Ries Crater Museum, Nördlingen, Germany. Mars Unser Nachbarplanet, So Seltsam Vertraut und Doch So Anders. August 3rd, 2006, as Educational Outreach for NASA grant.

Presentation at the Ries Crater Museum, Nördlingen, Germany. Reiseziel Mars – Die Suche Nach Einem Landeplatz. July 16th, 2009, as Educational Outreach for NASA grant.

Presentation at the Ries Crater Museum, Nördlingen, Germany. The Mars Science Lab Landing & Recent Geologic Investigations in Gale Crater on Mars. August 8th, 2013, as Educational Outreach for NASA grant.

Presentation at the Ries Crater Museum, Nördlingen, Germany. The Journey of Curiosity through the Stratigraphy of Gale Crater, Mars - Roving 3.8 billion years back into the past at a snail's pace. June 2nd, 2016, as Educational Outreach for NASA grant.

