

Stephen E. Laubach

Professional Summary

Winter 2024

Fellow, Albert W. & Alice M. Weeks Centennial Professorship in Geological Sciences 2023-present

Fellow, Bookout Chair for Structural Geology 2021-2023

Professor (Research), Jackson School of Geosciences

Business address: The University of Texas at Austin
 Bureau of Economic Geology

 University Station, Box X
 Austin, Texas 78713-8924
 (512) 471-6303
 (512) 796-1248 (mobile)

E-mail address: steve.laubach@beg.utexas.edu

Web: <http://www.beg.utexas.edu/frac/> (FRAC)
 <http://www.jsg.utexas.edu/sdi/> (Structural Diagenesis)

Laubach's research includes structural geology, structural diagenesis, fundamentals of fracture development in rock, fractured, geothermal, and unconventional reservoirs, natural fracture/hydraulic fracture interaction, outcrop and core analysis, and microstructural methods in structural geology.

Laubach founded and leads the Fracture Research and Application Consortium and the Structural Diagenesis Initiative and supervises graduate student research in structural geology and structural diagenesis in the Jackson School of Geosciences.

In 2019, Laubach became North America Editor of the *Journal of Structural Geology*. From 2014 he was a member of the Editorial Advisory Board of the *Journal of Structural Geology*. Laubach was a member of the AAPG Executive Committee and AAPG Elected Editor from 2010 – 2013. He served from 2015 – 2017 as Executive Editor, Society of Petroleum Engineers journal *SPE Reservoir Evaluation & Engineering* and served as Associate Editor until 2021. He served as a Co-opted Member of the Petroleum Group Committee of the Geological Society of London from 2008 to 2012.

In 2023, Laubach was recognized with the JSG Joseph C. Walter, Jr., Excellence Award, the Jackson School of Geosciences highest honor.

Laubach was a Distinguished Lecturer for AAPG in 2010-2011 and Distinguished Lecturer for SPE in 2003-2004. He was a member of the Committee to Assess the Science Proposed for a Deep Underground Science and Engineering Laboratory, National Research Council, 2010 – 2011 and the Committee on Advanced Drilling Technologies, National Research Council, 1992 – 1994. He served as co-Chairman of the First North American Rock Mechanics Symposium in 1994. From 2013 to 2015 he served as a Member, Council on Earth Sciences, U.S. Department of Energy, Office of Science, and from 2015 to 2020 he served on the Council on Chemical Sciences, Geosciences and Biosciences.

Two of Dr. Laubach's Ph.D students have been recognized with Endowed Presidential Fellowships.

Academic Background

Ph.D. Geology, University of Illinois-Urbana, 1986

M.S. Geology, University of Illinois-Urbana, 1983

B.S. Geology, Tufts University, 1978

Areas of Expertise

- A. Structural diagenesis; interaction of mechanical and chemical processes
- B. Cross-disciplinary and cross-departmental research group leadership
- C. Structural petrology, petrographic fluid inclusion and cathodoluminescence studies
- D. Structural geology, fracture analysis, evolution of fault systems; physical modeling of faults
- E. Tectonics, structural evolution of North American Cordillera (Maria belt)
- F. Application of borehole-imaging geophysical logs to stress and fracture evaluation
- G. Rock mechanics; geologic studies in support of hydraulic fracture technology

Selected Major Project Management

Principal Investigator, Reconstructing and predicting fracture pattern evolution, DE-SC0022968, Chemical Sciences, Geosciences and Biosciences Division, Office of Basic Energy Sciences, Office of Science, U.S. Department of Energy, 2022 – 2025

Principal Investigator, Predicting fracture porosity evolution in sandstone, DE-FG02-03ER15430, Chemical Sciences, Geosciences and Biosciences Division, Office of Basic Energy Sciences, Office of Science, U.S. Department of Energy, 2003 – 2019

Principal Investigator, Fracture Research and Application Consortium, 1997 – present

Principal Investigator, NETL hydraulic fracture ground truth project, 2014 – 2022

Principal Investigator, RPSEA Marcellus shale project (with GTI), 2010 – 2012

Principal Investigator, RPSEA New Albany shale project (with GTI), 2007 – 2009

Principal Investigator, Jackson School of Geosciences Structural Diagenesis Initiative, 2004 – 2009

Principal Investigator, various US Department of Energy grants and contracts, 1994 – present

Principal Investigator, Bureau of Economic Geology / Gas Research Institute Tight Gas Sands Program, 1990 – 1994

Principal or lead Investigator, numerous other projects not listed separately

Professional Work Experience

- A. Present Position: Professor (Research) Jackson School of Geosciences (2023–Present); Senior Research Scientist, Bureau of Economic Geology, The University of Texas at Austin (June 1996–2023); Fellow, Albert W. & Alice M. Weeks Centennial Professorship in Geological Sciences 2023-present. Member, Graduate Studies Committee, 2003-Present.

Leading the fracture and structural diagenesis research group. Managing a research team of full-time research scientists, academic research collaborators, postdoctoral fellows, and graduate students. Academic supervision of graduate students. Obtaining funding for staff salaries and research labs. Leading interaction with industry, government, and foundation research sponsors. Developing and applying methods for fracture and stress characterization and

interpretation. Understanding interactions of chemical and mechanical processes in brittle rocks. Conducting field and laboratory studies of faults and fractures. Research on geothermal, unconventional resources, tight gas and shale gas/oil, fractured carbonate rocks, and natural fracture/hydraulic fracture interaction.

Fellow, Albert W. & Alice M. Weeks Centennial Professorship in Geological Sciences 2023-2024

Fellow, Bookout Chair for Structural Geology (September 2021–2023)

Lecturer, Department of Geological Sciences (2019-2023)

Editor, *Journal of Structural Geology* (2019-Present)

Member, AAPG Executive Committee and AAPG Elected Editor (July 2010–July 2013).

Member, Graduate Studies Committees, Jackson School of Geosciences Department of Geological Sciences (2003–Present) and Energy and Earth Resources Graduate Program (2006–Present): Graduate research supervision (sole) and instruction.

Senior Technical Advisor, Bureau of Economic Geology (2006–2008)

Jackson Research Excellence Fellow (2007–2009)

Jackson Research Fellow (2003–2006)

Supervisor, Bureau of Economic Geology Scanning Electron Microscope and Cathodoluminescence facility (1995–Present)

Founded Fracture Research and Application Consortium (1998) and Structural Diagenesis Initiative (2001)

Principal Investigator, numerous basic and energy-related research projects (1987–Present)

- B. Research Scientist, Bureau of Economic Geology, The University of Texas at Austin (March 1990–May 1996).

Developed and applied methods for fracture and stress characterization and interpretation. Laboratory studies of rock deformation. Laboratory analog studies of faulting. Tight gas sandstone and coalbed methane research. Regional geology, Gulf Coast, Rocky Mountain Region, NE Mexico, N Argentina.

Served as Principal Investigator, Bureau of Economic Geology/Gas Research Institute Tight Gas Sands Program, 1990 – 1994, which was instrumental in developing and testing hydraulic fracturing technology.

- C. Research Associate, Bureau of Economic Geology, The University of Texas at Austin (June 1986–February 1990).

Research on all aspects of tight gas, coalbed methane, and fractured shale geology. Research in support of development of hydraulic fracturing technology. Regional structural and stratigraphic studies of Gulf Coast, Rockies, Appalachians. Developed and applies methods for fracture and stress characterization and interpretation. Early work on interpretation of borehole image logs. Conducted borehole, field and laboratory studies of faults and fractures; supervised regional and field-scale structure, stratigraphy, diagenesis, and engineering studies.

- D. Visiting Lecturer, Lehigh University, Bethlehem, Pennsylvania (August 1985–June 1986).

Teaching structural geology and tectonics; Supervising graduate student research. Conducting research in structural geology of Appalachians.

- E. Instructor, Robertson Research, American Universities Field Course, Llandudno, North Wales, United Kingdom (May 1982–September 1983).

Teaching structural geology field techniques and helping organize and run field course.

- F. Research Assistant, Teaching Assistant, University of Illinois - Urbana, Champaign Illinois (September 1980–July 1985).
Assisted in teaching: structural geology, petrology, mineralogy, crystal chemistry, field methods, introductory geology and conducted research on volcanic and metamorphic rocks.
- G. Geologist (intern), General Crude Oil Company, Houston, Texas (May 1977–August 1977).
- H. Roustabout, General Crude Oil Company, Snyder, Texas (May 1976–August 1976).

Professional Societies

Current membership

Geological Society of America (elected Fellow 2016)
 Geological Society of London (Fellow)
 American Association of Petroleum Geologists (Honorary Member)
 American Geophysical Union (Life Member)
 Society of Petroleum Engineers (Life Member)
 American Rock Mechanics Association (Life Member 2020)
 International Association for Structural Geology & Tectonics
 EGU

Past

Rocky Mountain Association of Geologists
 Council on Undergraduate Research
 International Society for Rock Mechanics
 EAGE

Awards and Honorary Societies

Professional society and academic recognition

Honorary Member Award, AAPG's third highest honor with "medal" status, 2024
 Joseph C. Walter, Jr., Excellence Award, Jackson School of Geosciences highest honor, 2023
 Fellow, Albert W. & Alice M. Weeks Centennial Professorship in Geological Sciences 2023-2024
 Fellow, Bookout Chair for Structural Geology, Jackson School of Geosciences, 2022–2023
 Fellow, Geological Society of America, elected 2016
 Distinguished Service Award, AAPG, 2016
 Certificate of Merit, American Association of Petroleum Geologists, 2007
 Jackson Research Excellence Fellow, 2007–2009
 Certificate of Appreciation, Geological Society of America (committee service), 2009
 Jackson Research Fellow, Jackson School of Geosciences, 2003 – 2006
 Jules Braunstein Memorial Award, American Association of Petroleum Geologists, 1999

Best paper recognition

Co-author, Best Recent Paper, AAPG Petroleum Structure & Geomechanics Division, 2019
 Co-author, Publication Award–Best Paper, Bureau of Economic Geology, 2016
 Co-author, Jackson School Publication Bronze Award for best student-authored publication, 2014

Co-author, Publication Award–Best Paper, Bureau of Economic Geology, 2011

Best university research, recognition at the US Department of Energy Symposium Flow and Transport: from Pore to Reservoir Scales, 2004

Best presentation recognition

President's Certificate for Excellence in Presentation (co-author), American Association of Petroleum Geologists Energy Minerals Division, annual meeting, 2011

Certificate of Recognition, excellence in technical presentation (co-author), SEPM, 2011

AAPG Award of Excellence "Top 10" Oral Presentations for "Structural Complexity in Structurally Simple Fractured Reservoir Analogs," which was presented at the AAPG Convention, Long Beach, 2007

Energy Minerals Division Best Poster Award, American Association of Petroleum Geologists, 2006

Honorable Mention, Poster Presentation, SEPM (Society for Sedimentary Geologists), 2001

Honorable Mention, Oral Presentation (Co-Author), SEPM (Society for Sedimentary Geologists), 2001

Best Luncheon Paper–Third Place, Rocky Mountain Association of Geologists, 2001

Best Presentation Award, Clastic Diagenesis Research Group SEPM, 1997

Energy Minerals Division Best Paper Award, American Association of Petroleum Geologists, 1992

Energy Minerals Division Best Paper Award, American Association of Petroleum Geologists, 1991

President's Certificate for Excellence in Presentation, American Association of Petroleum Geologists, annual meeting, 1991

Honorable mention, Geological Society of America Coal Division, for paper presented at annual meeting, 1990

Best of SPE, paper presented at American Association of Petroleum Geologists, annual meeting, 1988

Distinguished lectureships

AAPG Distinguished Lecturer, 2011–2012

BEG Centennial Distinguished Lecturer, 2009

Distinguished Lecturer, Society of Petroleum Engineers, 2004

Reviewing & Editing Recognition

AGU 2021 Editors' Citation for Excellence in Refereeing - *Reviews of Geophysics*, 2022

Top reviewers in Geosciences, Web of Science, September 2019

Award of Appreciation, Outstanding Technical Editor, Society of Petroleum Engineers, 2015

A Peer Apart, Distinguished Service in Technical Editing, Society of Petroleum Engineers, 2015

Award of Appreciation, Outstanding Technical Editor, Society of Petroleum Engineers, 2009

One of 10 Journal of Structural Geology Top Reviewers, 2008

Award of Appreciation, Outstanding Technical Editor, Society of Petroleum Engineers, SPE Reservoir Evaluation & Engineering, 2007

Award of Appreciation, Outstanding Technical Editor, Society of Petroleum Engineers, 1999

Citation of Excellence of Review, AAPG Bulletin, 1999

Notable citation benchmarks & reprinted papers

Highly Cited Recognition | For Laubach et al. 2019, The role of chemistry in fracture pattern development and opportunities to advance interpretations of geological materials. Reviews of Geophysics. According to ISI Web of Science, as of March 2023, this highly cited paper received enough citations to place it in the top 1% of its academic field based on a highly cited threshold for the field and publication year.

Highly Cited Recognition | Anders, M.H., Laubach, S.E., and Scholz, C.H., 2014, Microfractures: a review. Journal of Structural Geology. According to ISI Web of Science, as of March 2023, this highly cited paper received enough citations to place it in the top 1% of its academic field based on a highly cited threshold for the field and publication year.

Highly Cited Recognition | For Gale, Laubach, Olson et al., 2014, Natural fractures in shale: a review and new observations, AAPG Bulletin. According to ISI Web of Science, as of June 2016, this highly cited paper received enough citations to place it in the top 1% of its academic field based on a highly cited threshold for the field and publication year.

2006 Classics in Oil, Petroleum & Natural Gas | According to Google Scholar citations, a paper by Ortega, Marrett and Laubach is among the top cited in this field for that year. Classic papers are highly cited papers in their area of research that have stood the test of time. For each area, Google Scholar lists the ten most-cited articles that were published ten years earlier.

Reprinted paper: *Practical approaches to identifying sealed and open fractures*, 2003, reprinted in *Understanding Diagenetic Controls on Sandstone Reservoir Quality: A Compendium of Influential Papers*, 2006; reprinted in *Fractured Reservoirs 2008*; AAPG Getting Started Series.

Reprinted paper: *Anisotropy and beyond: geological perspectives on geophysical prospecting for natural fractures*, 2008, reprinted in AAPG Getting Started Series No. 13, *Fractured Reservoirs*, 2008.

Reprinted paper: *Fracture detection in low-permeability reservoir sandstone: a comparison of BHTV and FMS logs to core*. Reprinted in *Borehole imaging: Society of Professional Well Log Analysts, SPWLA Reprint Series*, p. 265–275 (1990).

Committee Responsibilities and Professional Activities

Professional Service Accomplishments

Leading role, foundation of AAPG technical division: AAPG Petroleum Structure and Geomechanics Division, 2012-2013; Founded predecessor AAPG Reservoir Deformation Research Group, 1997-1998

Founded AAPG Chas. H. Taylor Fellowship in support of scientific publishing, 2012

Restructured editorial board, AAPG Bulletin, 2012

Founded the AAPG Books Editorial Board, and instituted AAPG Bulletin Online Ahead of Print publishing and Notable Papers recognition, 2011-2012

Instrumental in launch of new SEG-AAPG journal Interpretation, 2012

Panelist, Geological Society of America statement on energy and mineral resources policy, 2008

Geological Society of America

Elected GSA Fellow, 2016

Candidate, GSA Council, 2023

Member, Campaign Steering Committee, GSA Foundation, *The Campaign for GSA's Future*, 2015-2019

Technical Session Advocate and Chair, Fracture Patterns and Diagenesis in Low-Enthalpy Geothermal Reservoirs and Outcrop Analogs, S.E. Laubach, Convenor. GSA Connects 2023, Pittsburgh, PA 15-18 October.

Member, International Advisory Panel and Keynote Address. GSA Penrose Conference: Progressive Failure of Brittle Rocks. Flat Rock, NC, June 20-24, 2022

Technical Session Advocate and Chair, T190. Applications of Structural Geology and Geomechanics in the Petroleum Industry, GSA Annual Meeting, Vancouver, BC 2014

Technical Session Advocate and Chair, Structural Geology and Geomechanics in the Petroleum Industry, Oral and Poster sessions, GSA Annual Meeting, Denver 2013. T209. Structural Geology and Geomechanics in the Petroleum Industry (GSA Structural Geology and Tectonics Division; GSA Geophysics Division)

Technical Session Advocate and Chair, The Role of Structure and Diagenesis in Governing Fluid Storage and Flow in Deep Sedimentary Basins with Applications to Unconventional Oil and Gas Reservoirs (GSA Structural Geology and Tectonics Division; GSA Sedimentary Geology Division, GSA Hydrogeology Division, GSA Geophysics Division), Geological Society of America Annual Meeting, Charlotte, NC, Geological Society of America, 2011–2012. Invited keynote session.

Member, Panel on energy and mineral resources policy, Geological Society of America, 2007–2008. GSA position statement published 2008

Member-at-Large, Academic & Applied Geosciences Relations Committee, Geological Society of America, 2006–2009

Theme Session Chair and Organizer, Brittle Deformation and Diagenesis as Coupled Processes, Geological Society of America Annual Meeting, Houston, Texas, Geological Society of America, 2008

Symposium Organizer and Chair, Fractured Aquifers and Petroleum Reservoirs, South-Central Meeting, Austin, Texas, Geological Society of America, 1996

Theme Session Organizer, Scale Effects of Fluid Flow and Fractures, Geological Society of America Annual Meeting, Denver, Colorado, Geological Society of America, 1995–1996

Theme Session Advocate and Technical Session Chair, Geology of Natural Gas: Challenges and Opportunities, Annual Meeting, Boston Massachusetts, Geological Society of America, 1993

Organizer and Chair (Invited Symposium), Coalbed Methane in the San Juan Basin, Rocky Mountain / South-Central Combined Meeting, Albuquerque, New Mexico, Geological Society of America, 1991

Session Chairman, Structural Geology / Tectonics, South-Central Meeting, Arlington, Texas, Geological Society of America, 1989

[Geological Society of London](#)

Co-opted Member, Petroleum Group Committee, January 2008–2012

Candidate, GSL Council, 2019

Volume Editor, Special Publication 370, *Advances in Carbonate Exploration and Reservoir Analysis*, 2012

Convener, *Advances in carbonate exploration and reservoir analysis*, The Geological Society (London), Burlington House, London, November, 2010

Convener, *The geology of unconventional gas plays*, The Geological Society (London), Burlington House, London, October, 2010

American Association of Petroleum Geologists

Honorary Member Award, AAPG's third highest honor with "medal" status, 2024

Distinguished Service Award, AAPG, 2016

Certificate of Merit, American Association of Petroleum Geologists, 2007

Jules Braunstein Memorial Award, American Association of Petroleum Geologists, 1999

Member, AAPG Executive Committee, 2010–July 2013

Elected Editor, 2010–July 2013. Responsible for all American Association of Petroleum Geologists scientific publishing including book series, two journals and electronic publications, etc. Involved in all aspects of leadership, planning, and management of this professional society.

AAPG Executive Committee liaison to Datapages, Inc., 2010–July 2013

AAPG Executive Committee liaison to Publications Committee, 2010–July 2013

AAPG Executive Committee liaison to GIS Committee, 2010–July 2013

Member, AAPG Advisory Council Ad Hoc Committee on Divisions, 2012

Member, AAPG Executive Director Search Committee, 2011

AAPG Executive Committee liaison to Technical Advisory Committee, 2010–July 2013

AAPG Executive Committee liaison to Publications Pipeline Subcommittee, 2010–July 2013

AAPG Distinguished Lecturer, 2011–2012

Member, AAPG Books Editorial Board, 2015–2020

Chair, Committee to Select the AAPG Editor Candidate, 2015

Member, AAPG Foundation Trustee Associates, 2010–Present

Member, AAPG Foundation Fundraising Advisory Committee, 2012–2020

Member, AAPG Foundation Weeks Award Committee, 2013–2020

Associate Editor, Interpretation, SEG-AAPG journal, 2014–2017

Member, AAPG Petroleum Structure & Geomechanics Division Steering Committee, 2013–2015

Reviewer, Abstract submissions, 2014 Houston ACE in Theme 8 – Structure, Tectonics, and Geomechanics, 2013

Theme chair, Fracture characterization, Unconventional Resources Technology Conference (URTeC), 2013.

AAPG Charles Taylor Fellow, 2012–Present

Chair, Academic Liaison Committee, American Association of Petroleum Geologists, 2004–2007

Chair, Academic Liaison Subcommittee to identify AAPG contacts at colleges and universities, American Association of Petroleum Geologists, 2002–2004

Member, Academic Liaison Committee, American Association of Petroleum Geologists, 2000–2007

Member, Distinguished Lecture Committee, American Association of Petroleum Geologists, 2001–2004; 2015–2021

Member, Student Focus ad hoc Committee, American Association of Petroleum Geologists, 2004–2007

Vice-Chair, Research Committee, American Association of Petroleum Geologists, 2001–2004.

Member, Research Committee, American Association of Petroleum Geologists 1997–2007.

Research Committee liaison, Research Group—Subcommittee on Reservoir Deformation, American Association of Petroleum Geologists, 1999–2002

Webmaster, Research Committee, American Association of Petroleum Geologists, 2002–2004

Co-Convener, Hedberg Research Conference, Structural Diagenesis, American Association of Petroleum Geologists, Austin, Texas, 2004

Associate Editor, AAPG Bulletin, 1999–2002; 2010–2011

Instructor, American Association of Petroleum Geologists Fractured Reservoir Characterization and Modeling School, 1999–2004

Lecturer and Member, Visiting Geologists Program, American Association of Petroleum Geologists, 1999–2015

Founder and first chair, AAPG Reservoir Deformation Research Group, inaugural meeting, American Association of Petroleum Geologists, 1997 (in 2013 this group became the AAPG Petroleum Structure and Geomechanics technical division)

Session chair, Structure/Geomechanics: Fault Seal and Fault Zone Modeling, AAPG National Convention, Houston, Texas, American Association of Petroleum Geologists, 2017.

Session Chair and Discussion Leader, Open Fractures and In Situ Stress, AAPG Hedberg Research Conference, Casper, Wyoming, American Association of Petroleum Geologists, 2008

Session Chair and Organizer, The Integration of Structural Geology and Diagenesis, AAPG National Convention, San Antonio, Texas, American Association of Petroleum Geologists, 2008

Session Chair and Organizer, Structurally Complex Reservoirs: Reactivation and Superposition, AAPG National Convention, Long Beach, California, American Association of Petroleum Geologists, 2007

Session Chair, Fractured Clastics and Carbonates--What Constrains Their Reservoir Limits? (Oral and Poster Sessions), AAPG National Convention, Houston, Texas, American Association of Petroleum Geologists, 2006

Chair and Co-Convener, Exploration and Exploitation of Fractured Reservoirs, oral sessions I and II, technical sessions, American Association of Petroleum Geologists Annual Convention, San Antonio, Texas, 1999

Co-Chair and Session Developer, and Chair of Poster Session, New Technology in the Exploration and Exploitation of Fractured Reservoirs, AAPG National Convention, Dallas, Texas, American Association of Petroleum Geologists, 1997

Judge, American Association of Petroleum Geologists Annual Meeting, 2002 and various other meetings, subsequent years

[Society of Petroleum Engineers](#)

SPE Life Member, 2018

SPE Distinguished Lecturer, 2004, Tours of US, Mexico, East Asia.

Executive Editor, Society of Petroleum Engineers SPE Reservoir Evaluation & Engineering, 2015 – 2017

Member, Reservoir Description and Dynamics Advisory Committee, 2016 – 2018

Associate Editor, Society of Petroleum Engineers SPE Reservoir Evaluation & Engineering, 2012 – 2021

Technical Editor and editorial review committee, Society of Petroleum Engineers SPE Reservoir Evaluation & Engineering, 1998 – 2012

Member, Editorial Board, SPE Formation Evaluation, Society of Petroleum Engineers, 1996–1998

Member, Program Committee, and panelist, SPE Workshop: *Enhancing Production and Recovery from Mature Fields II—The Mexican Perspective*. April 21-22, 2020, Villahermosa, Mexico

Member, Program Committee, and panelist, SPE Workshop: *Enhancing Production and Recovery from Mature Fields—The Mexican Perspective*. February 19-21, 2019, Villahermosa, Mexico

Moderator, PetroWiki, SPE, 2013–2018

Member, SPE Forum Series Steering Committee, Future Challenges in Carbonate Resource Development, Society of Petroleum Engineers, 2004–2005

Member, Technical Program Committee, Rocky Mountain Regional and Low-Permeability Reservoir Symposium, Denver, Colorado, Society of Petroleum Engineers, 1992–1993

Award of Appreciation, service as SPE REE Executive Editor, 2017

Award of Appreciation as an Outstanding Technical Editor in 1999, 2009 and 2015

Rock Mechanics Community

American Rock Mechanics Association, Life Member, 2020

Member, Committee to Assess the Science Proposed for a Deep Underground Science and Engineering Laboratory, National Research Council, 2010–2012

Member, Committee on Advanced Drilling Technologies, National Research Council, 1992–1994

Co-Chairman, The First North American Rock Mechanics Symposium (NARMS), Austin, Texas, 1992–1994 (Major international meeting)

Session Developer, U.S. Rock Mechanics, 44th Annual Symposium, 2009–2010

Session Developer, U.S. Rock Mechanics, 38th Annual Symposium, 2000–2001

Panelist, American Rock Mechanics Association, Issues in Rock Mechanics, Asilomar, 1998

Session Chair and Session Developer, Second North American Rock Mechanics Symposium, 1995–1996

Member, Coordinating Committee, Geotechnical Research Facility, On-Site Utilization of Major Assets Developed for the Superconducting Super Collider, 1994

Department of Energy

Member, Council on Chemical Sciences, Geosciences and Biosciences, U.S. Department of Energy, Office of Science, 2015–2020

Member, Council on Earth Sciences, U.S. Department of Energy, Office of Science, 2013–2015

Keynote and workshop member, Information is in the noise: Signatures of evolving fracture systems (machine learning), U.S. Department of Energy, Office of Science, Leesburg, VA March 2018

Workshop organizer, Fractures and geomechanics, U.S. Department of Energy, Office of Science, Leesburg, VA May 2016

Session chair, Geosciences Principal Investigators Symposium, Basic Energy Sciences, May 2014

Reviewer, ORAU, International Program, 2014, 2020, 2022

Reviewer, Office of Science Graduate Fellowship Program, Department of Energy, 2012

Reviewer, Office of Science U.S. Department of Energy (DOE) Basic Energy Sciences (BES) Early Career Research Program, 2011; 2012; 2015, 2021

Reviewer, Office of Science Graduate Fellowship Program, Department of Energy, 2010

Session Chair, Micromechanics and Fracturing Micromechanics and Flow Symposium, Santa Fe, New Mexico, U.S. Department of Energy, 1999

Invited Research Program Reviewer, Energy Studies, Santa Fe, New Mexico, Department of Energy, 1998

Reviewer, Department of Energy Basic Energy Sciences program proposals, 1998–present

[Jackson School of Geosciences](#)

Panelist, Research scientist discussion with Geology Foundation Advisory Council, Austin, Texas, 31 March, 2023

Member, Appointments Committee, John A. and Katherine G. Jackson School of Geosciences, The University of Texas at Austin, 2015-2018; 2005–2007. Committee responsible for school-wide review of tenure and promotion.

Member, GSC ad hoc sub-committee on appointment policy, 2015

Member, Strategic Planning Council, John A. and Katherine G. Jackson School of Geosciences, The University of Texas at Austin, 2007–2014

Member and Vice Chair, Energy, Environment, Environment and Policy Theme Faculty Search Committee, John A. and Katherine G. Jackson School of Geosciences, 2006–2009

Member, Graduate Studies Committee, The University of Texas at Austin, Department of Geological Sciences, 2003–present

Member, Graduate Studies Committee, The University of Texas at Austin, Energy and Earth Resources Program, 2006–present

Chair, Energy Geoscience Education and Research Group, John A. and Katherine G. Jackson School of Geosciences, The University of Texas at Austin, 2008–2009

Member, Admissions Committee, John A. and Katherine G. Jackson School of Geosciences, The University of Texas at Austin, 2008–2009

Chair, Equipment Committee, John A. and Katherine G. Jackson School of Geosciences, The University of Texas at Austin, 2005–2006. Committee responsible for administering major within-school grant program

Member, Equipment Committee, John A. and Katherine G. Jackson School of Geosciences, The University of Texas at Austin, 2003–2008

Member, Graduate Curriculum Committee, Jackson School of Geosciences, 2007

Member, JSG Fellowship Committee, 2004–2005

[Selected Bureau Committees](#)

Senior Technical Advisor, Bureau of Economic Geology, 2006–2008

Member, Centennial Committee, Bureau of Economic Geology, 2007–2009
Chair, Promotion Advisory Committee, Bureau of Economic Geology, 2005–2006
Member, Promotion Advisory Committee, Bureau of Economic Geology, 2003–2005
Member, ex officio, Bureau Grants and Awards Committee, 2006–2008
Member, ex officio, Bureau Publication Board, 2006–2008
Member, Bureau Publication Task Force, 2001
Member, Bureau Technical Advisory Board, 2000–2001
Chair, Bureau Seminar Series, 2000
Chair, Bureau Publication Policy Review Committee, 1999

Other Professional Service

Journal of Structural Geology

Editor, *Journal of Structural Geology*, 2019–Present (three terms)
Member, Editorial Advisory Board, *Journal of Structural Geology*, 2014–2018
Supervising Editor, *Journal of Structural Geology*, theme issue ‘Deep basin brittle deformation’, 2019–2023
Guest Editor, *Journal of Structural Geology*, theme issue ‘Spatial Arrangement of Fractures and Faults’, 2016–2017
Guest Editor, *Journal of Structural Geology*, theme issue ‘Structural Diagenesis’, 2009–2010 (2010, v. 32, no. 12)

Other editorial board service

Associate Editor, *Minerals*, 2019–Present
Associate Editor, *Interpretation*, SEG-AAPG journal, 2014–2016
Guest Editor, *Interpretation*, SEG-AAPG journal, special section, Fractures, 2014
Guest Editor, *Interpretation*, SEG-AAPG journal, special section, Optimizing Unconventional Reservoir Development and Production, 2013
Guest Editor, *The Leading Edge*, theme issue Hydraulic fracturing: Modern and Novel Methods, published—2014
Member, Editorial Board, *International Journal of Physical Sciences*, 2008–2010
Member, Editorial Board, *The Open Petroleum Engineering Journal*, 2008–2012

Other research and academic community roles

Trustee, GDL Foundation, 2007–present (see below)
Member, University of Illinois Department of Geology Alumni Board, 2016–2023
Member, Council on Undergraduate Research, 2008–2017

Other technical session leadership and service

Jury board, General Assembly of the International Association for Structural Geology and Tectonics (IASGT), Kharagpur, India, February 2024,

Member, International Advisory Board (invited) and speaker, Progressive Failure of Brittle Rocks, 2022 GSA Penrose Conference, June 2022

Member, International Continental Scientific Drilling Program (ICDP) Cornell University Deep Geothermal Test Borehole: An ICDP-sponsored Scientific Planning Workshop, Cornell University, 8-10 January, 2020

Member, Technical program committee, 2019 SEG Fractured Reservoir & Unconventional Resources Forum: Prospects and Challenges in the Era of Big Data, 1-3 September, Lanzhou, China, 2019

Discussion leader, session on 'Fundamentals of fractured reservoirs', Geological Society of London, Conference, The Geology of Fractured Reservoirs, 24-25 October 2018, Burlington House, London, 2018

Member, Scientific Committee, and technical session chair, 21st International Conference, Deformation Mechanisms, Rheology and Tectonics (DRT), May, 2017, Inverness, Scotland, 2016–2017

Convener, Theme Session, Fracturing and Cementation: Geochemical and Mechanical Feedback Processes, Goldschmidt Conference, Knoxville, June, 2010

Co-chairman and session organizer, theme session, New perspectives in fractured reservoirs, 2011 AMPG-GCAGS meeting, Veracruz, Mexico, 2011

Deputy chair and member of the Symposium Academic Committee, Fifth International symposium on Formation and Accumulation Mechanisms of Petroleum and Evaluation of Petroleum Resources, China State Key Laboratory of Petroleum Resource and Prospecting, Beijing, China, October 2009

Session Chair and Session Developer, Gulf Coast Association of Geological Societies 52nd Annual Convention, Austin, Texas, October, 2002

Session Chairman, Structural Geology, American Geophysical Union Meeting, San Francisco, California, American Geophysical Union, 1988

Convener and Co-Chair, Bureau of Economic Geology Natural Fracture Workshop, Austin, Texas, Gas Research Institute, 1992

Discussion Facilitator, Research Needs of Green River Basin Gas Production: GRI/DOE Greater Green River Basin Natural Gas Technology Workshop, Denver, Colorado, Gas Research Institute, 1992

Judge, Structural Geology Session, Rocky Mountain Regional Meeting, Casper, Wyoming, Rocky Mountain Association of Petroleum Geologists, 1992

Discussion Leader, Geology of the Travis Peak Formation, Gas Research Institute Forum / Workshop in Association with The Society of Petroleum Engineers Gas Technology Symposium, Dallas, Texas, Gas Research Institute, 1989

Conference Organizer, (with R. J. Finley) Fracture Workshop, Gas Research Institute, 1987

Reviewer

Top Reviewers in Geosciences – September 2019 ISI Web of Knowledge

Reviewing awards from Society of Petroleum Engineers, American Association of Petroleum Geologists, Journal of Structural Geology, Reviews of Geophysics

Peer reviewed journals and books. AAPG Bulletin; AAPG Books; Acta Geophysica; Acta Geodaetica et Geophysica; Advances in Water Resources; Agricultural Water Management; Alaska Division of Geological & Geophysical Surveys; Arabian Journal of Geosciences; Basin Research; Brazilian Journal of Geology; Bureau of Economic Geology (RIs, GCs, Maps; other); Bulletin of Engineering Geology and the

Environment; Bulletin of Canadian Petroleum Geology; Canadian Journal of Petroleum Geology; Composite Interfaces; Computers & Geoscience; CT&F- Ciencia, Tecnología y Futuro; Earth-Science Reviews; Earth Science, Systems and Society; Earth & Planetary Science Letters; Earth Surface Dynamics; Fuel; Frontiers in Earth Science; GCAGS; Geofluids; Geological Magazine; Geology; Geophysical Journal International; Geophysical Research Letters; Geophysics; Geothermal Energy; GSA Bulletin; Heliyon; Hydrogeology Journal; International Journal of Applied Earth Observation and Geoinformation; International Journal of Coal Geology; International Journal of Physical Sciences; International Journal of Rock Mechanics; Interpretation; Italian Journal of Geosciences; Journal of Asian Earth Sciences; Journal of Applied Geophysics; Journal of Canadian Petroleum Technology; Journal of Geochemical Exploration; Journal of Geophysical Research: Solid earth; Journal of Geophysical Research: Machine Learning and Computation; Journal of Hydrology; Journal of Petroleum Technology; Journal of Petroleum Geology; Journal of South American Earth Sciences; Journal of Structural Geology; Journal of the Geological Society (London); Lithos; Lithosphere; Marine & Petroleum Geology; Minerals; PLOS One; Rocky Mountain Geology; Royal Society Proceedings A; Royal Society Open Science; SEPM; Solid Earth; SPE Reservoir Evaluation & Engineering; SPE Formation Evaluation; Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy; Tectonophysics; Terra Nova; The Journal of Geology; The Leading Edge; various other publications, various years.

Major funding agencies: U.S. Department of Energy (various programs), Netherlands Organization for Scientific Research (NWO), Petroleum Research Fund, Irish Research Council/Laureate Awards Programme, National Research, Development and Innovation Office (Hungary) and U.S. National Science Foundation.

Student supervision—Overview

Supervisor and Member, various dissertation and thesis committees, Department of Geological Sciences (Geosciences and EER), Department of Petroleum & Geosystems Engineering, Department of Civil Engineering, 1992–present, The University of Texas at Austin

External examiner, Aix-Marseille Université 2013, 2015; Karlsruhe Institute of Technology 2018, Cornell University 2024

Graduate student supervision and undergraduate teaching and mentoring, Lehigh University, 1985-1986

Leadership in Community Research Agenda

To help promote the cross-disciplinary communication and research on an underserved area of societal interest, the GSA Stephen E. Laubach Structural Diagenesis Research Award Fund was established as an annual award, jointly administered by the GSA Sedimentary Geology and GSA Structural Geology & Tectonics Divisions. For a description see the GSA website and AAPG Explorer, December 2010, p. 41.

GDL Foundation, founder, trustee, review committee supervisor; competitive fellowships and scholarships support graduate and undergraduate studies at many top university geoscience programs. Foundation also supports targeted scientific field seminars and selected science education initiatives.

Contributor, 2018, Challenges and Opportunities for Research in Tectonics, Tectonics Community Vision Document for NSF prepared for the U.S. National Science Foundation: Huntington, K.W., and Klepeis, K.A., eds., with 66 community contributors, 2018, Challenges and opportunities for research in tectonics: Understanding deformation and the processes that link Earth systems, from geologic time to human time. A community vision document submitted to the U.S. National Science Foundation. University of Washington, 84 pp., doi.org/10.6069/H52R3PQ5.

2018 invited panelist, National Priorities for Research, Technological Development and Human Resources Training, Mexico, Optimización del Portafolio de Producción, Secretaría de Energía (SENER), April 2018, and report co-author, Develop accurate characterization and modelling of natural fractures and stress-state in the subsurface to improve production in Mexican reservoirs.

Member, Council on Chemical Sciences, Geosciences and Biosciences, U.S. Department of Energy, Office of Science, 2015–2019

Member, Council on Earth Sciences, U.S. Department of Energy, Office of Science, 2013–2015

Publications

Patent

Laubach, S. E., Method for determining optimum horizontal drilling direction and drilling horizon: File No. 95-120/0708, 12 p. plus attachments; Patent Number 5741967, received 4/21/1998.

Books

Garland, J., Neilson, J. E., Laubach, S. E., and Whidden, K. J., eds., 2012, Advances in carbonate exploration and reservoir analysis: Geological Society of London Special Publication 370, 311 p.

Lankford, A. J., Alhassid, Y., Coccia, E., Fairhurst, C., Phillipone, B. W., Fisher, P., Kajita, T., Laubach, S. E., Nelson, A., Ong, R. A., Sciulli, F. J., Shapiro, E. O., and Tiedje, J. M. (Committee to Assess the Science Proposed for a Deep Underground Science and Engineering Laboratory [DUSEL]); National Research Council; Board on Physics and Astronomy (BPA); Engineering and Physical Sciences (DEPS), 2011, An assessment of the Deep Underground Science and Engineering Laboratory: Washington, D.C., National Academy Press, 94 p. Paperback ISBN-10: 0-309-21723-7, ISBN-13: 978-0-309-21723-1.

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, 142 p.

Argon, A. S., Cook, N. G. W., Cooper, G. A., Herron, M. M., Laubach, S. E., Maurer, W. C., Monsees, J. E., Pye, D. S., Roegiers, J.-C., Shchukin, E. D., Zoback, M. D., Smeallie, P. H., Usselman, T. M., Crowley, K. D., Estep, J. T., Estep, J. L., Mathis, A. B., and Harshman, N. L. (Committee on Advanced Drilling Technologies); Geotechnical Board/Commission on Engineering and Technical Systems; Board on Earth Sciences and Resources/Commission on Geosciences, Environment, and Resources; and National Research Council, 1994, Drilling and excavation technologies for the future: Washington, D.C., National Academy Press, 161 p.

Nelson, P., and Laubach, S. E., 1994, Rock mechanics models and measurements, challenges from industry: Rotterdam, Proceedings of the First North American Rock Mechanics Symposium, 1155 p. [236 citations in ISI as of July 2012]

Monographs (Peer reviewed)

Hamlin, H. S., Clift, S. J., Dutton, S. P., Hentz, T. F., and Laubach, S. E.*, 1995, Canyon sandstones—a geologically complex natural gas play in slope and basin facies, Val Verde Basin, southwest Texas: The University of Texas at Austin, Bureau of Economic Geology Report of Investigations No. 232, 74 p. *PI listed last *PI listed last

Dutton, S. P., Hamlin, H. S., and Laubach, S. E., 1995, Geologic controls on reservoir properties of Low-permeability sandstone, Frontier Formation, Moxa Arch, Southwestern Wyoming. The University of Texas at Austin, Bureau of Economic Geology Report of Investigations No. 234, 89 p.

Dutton, S. P., Clift, S. J., Hamilton, D. S., Hamlin, H. S., Hentz, T. F., Howard, W. E., Akhter, M. S., and Laubach, S. E.*, 1993, Major low-permeability-sandstone gas reservoirs in the continental United States: The University of Texas at Austin, Bureau of Economic Geology Report of Investigations No. 211, 221 p.
*PI listed last

Dutton, S. P., Laubach, S. E., Tye, R. S., Baumgardner, R. W., Jr., and Herrington, K. L., 1991, Geologic characterization of low-permeability gas reservoirs, Travis Peak Formation, East Texas: The University of Texas at Austin, Bureau of Economic Geology Report of Investigations No. 204, 89 p.

Jackson, M. L. W., and Laubach, S. E., 1991, Structural history and origin of the Sabine Arch, East Texas and northwest Louisiana: The University of Texas at Austin, Bureau of Economic Geology Geological Circular 91-3, 47 p.

Finley, R. J., Laubach, S. E., Tyler, Noel, and Holtz, M. H., 1990, Opportunities for horizontal drilling in Texas: The University of Texas at Austin, Bureau of Economic Geology Geological Circular 90-2, 32 p.

Reynolds, S.J., Spencer, J.E., Laubach, S.E., Peacock, S.S., Richard, S.M., and Cunningham, W.D., 1996, Geologic setting of mineral deposits of the Granite Wash Mountains, La Paz County, west-central Arizona, in Rehrig, W.A., ed., Tertiary extension and mineral deposits, southwestern U.S.: Society of Exploration Geologists Guidebook Series, v. 25, p. 141-155.

Reynolds, S. J., Spencer, L., Laubach, S. E., Cunningham, D., and Richard, S. M., 1989, Geologic map, geologic evolution, and mineral deposits of the Granite Wash Mountains, west-central Arizona: Arizona Geological Survey, Open-File Report, No. 89-4, OFR-89-04, 1 map sheet, map scale 1:24,000, 51 p.

Laubach, S. E., 1989, Fracture analysis of the Travis Peak Formation, western flank of the Sabine Arch, East Texas: The University of Texas at Austin, Bureau of Economic Geology Report of Investigations No. 185, 55 p.

Articles in Major Journals and Books¹ (Peer reviewed)

In press/submitted

Corrêa, R.†, Carvalho, B., Ukar, E., Laubach, S.E., Pestilhoc, A., Fall, A., Larson, T., Stockli, D., Stockli, L., Luders, V., Niedermann, S., Bankse, D.A. Brittle deformation and hydrothermal alteration in the Barra Velha Formation, Santos Basin, offshore Brazil. AAPG Bulletin, in press.

Forstner, S.R.†, Corrêa, R.†, Wang, Q.†[§], Laubach, S.E., Fracture length data for geothermal applications. Geological Society of London Books, Chapter, Powering the Energy Transition through Subsurface Collaboration, accepted.

Ukar, E., Fall, A., Laubach, S.E., Ketcham, R., Rapid crack-seal growth of Faden quartz. Journal of Structural Geology, in review.

Published

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Shakiba, M.**, Lake, L.W., Gale, J.F.W., Laubach, S.E., Pyrcz, M.J., 2024. Stochastic reconstruction of fracture network pattern using spatial point processes. *Geoenergy Science & Engineering* 236, 212741. doi.org/10.1016/j.geoen.2024.212741

Eppes, M.C., Rinehart, A., Aldred, J., Berberich, S., Dahlquist, M.P., Evans, S.G., Keanini, R., Laubach, S.E., Moser, F., Morovati, M., Porson, S., Rasmussen, M., Shaanan, U., 2024. Introducing standardized field

¹ for major journals and books only, my supervised students marked thus: †; *supervised visiting student; **committee member student; [§]postdoctoral fellow

methods for fracture-focused surface processes research. *Earth Surface Dynamics* 12, 35-66.
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2023

Laubach, S.E., Zeng, L., Hooker, J.N., Wang, Q., Zhang, R.H., Wang, J., Ren, B., 2023. Deep and ultra-deep basin brittle deformation with focus on China. *Journal of Structural Geology* 175, 104938.

Hooker, J.N., Katz, R.F., Laubach, S.E., Cartwright, J., Eichhubl, P., Ukar, E., Bloomfield, D., Engelder, T., 2023. Fracture-pattern growth in the deep, chemically reactive subsurface. *Journal of Structural Geology* 173, 104915. Top downloads, 1st quarter, 2023.

Wang, Q.†, Narr, W., Laubach, S.E., 2023. Quantitative characterization of fracture spatial arrangement and intensity in a reservoir anticline using horizontal wellbore image logs and an outcrop analogue. *Marine & Petroleum Geology* 152, 106238. doi.org/10.1016/j.marpetgeo.2023.106238
Finalist, Jackson School Best Student Paper Award

Shakiba, M.**, Lake, L.W., Gale, J.F.W., Laubach, S.E., Pyrcz, M.J., 2023. Multiscale spatial analysis of fracture nodes in two dimensions. *Marine & Petroleum Geology* 149, 106093.
<https://doi.org/10.1016/j.marpetgeo.2022.106093>

Gale, J.F.W., Elliott, S.J., Rysak, B.G.†, & Laubach, S.E., 2023. The critical role of core in understanding hydraulic fracturing. In Neal, A., Ashton, M., Williams, L.S., Dee, S.J., Dodd, T.J.H., & Marshall, J.D., Eds. *Core Values: The Role of Core in Twenty-first Century Reservoir Characterization*, Geological Society, London, Special Publications 527, 317-332. doi.org/10.1144/SP527-2021-198.

2022

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Corrêa, R.†, Marrett, R., Laubach, S.E., 2022. Spatial arrangement of fractures in two dimensions using point process statistics. *Journal of Structural Geology* 163, 104726.

Corrêa, R.†, Ukar, E., Laubach, S.E., Aubert, I., Lamarche, J., 2022. Deformational and associated diagenetic evolution of reactivated fault zones in carbonate rocks with implications for permeability – An example from Provence, Southeast France. *Marine & Petroleum Geology* 145, 105905.

Rysak, B.R.†, Gale, J.F.W., Laubach, S.E., Ferrill, D.A., Olson, J., 2022. Mechanisms for the generation of complex fracture networks: observations from slant core, analog models, and outcrop. *Frontiers in Earth Science*, v. 10, Section Geohazards and Georisks. In Li, Y, Rutter, E.H., Shang, J., Ji, Y., Eds., Special Issue, Recent Advances in Mechanics and Physics of Rock Fractures across Scales.
doi.org/10.3389/feart.2022.848012.

Gale, J.F.W., Fall, A. Yurchenko, I.A., Walaa, W.A., Laubach, S.E., Eichhubl, P., & Bodnar, R.J., 2022. Opening-mode fracturing and cementation during hydrocarbon generation in shale: An example from the Barnett Shale, Delaware Basin, West Texas. *AAPG Bulletin* 106(10), 2103-2141.
[doi:10.1306/01062219274](https://doi.org/10.1306/01062219274)
Second Place, Bureau of Economic Geology Best Paper Award

2021

Wang, J.,* Zeng, L., Yang, X., Liu, C., Wang, K., Zhang, R., Chen, X., Qu, Y., Laubach, S.E., Wang, Q.† 2021. Fold-related fracture distribution in Neogene, Triassic, and Jurassic sandstone outcrops, northern margin

of the Tarim Basin, China: Guides to deformation in ultradeep tight sandstone reservoirs. *Lithosphere* (Special 1), 8330561. <https://doi.org/10.2113/2021/8330561>

2020

Baques, V.[§], Ukar, E., Laubach, S.E., Forstner, S.R.,† and Fall, A., 2020, Fracture, dissolution, and cementation events in Ordovician carbonate reservoirs, Tarim Basin, NW China. *Geofluids*, v. 2020, Article ID 9037429, 28 p. doi: 10.1155/2020/9037429

Ukar, E., Baques, V.[§], Laubach, S.E., Marrett, R., 2020, The nature and origins of decameter-scale porosity in Ordovician carbonate rocks, Halahatang oilfield, Tarim Basin, China. *Journal of the Geological Society, London*, 177 (5), 1074-1091. doi:10.1144/jgs2019-156.

Almansour, A.,† Laubach, S.E., Bickel, J.E., and Schultz, R., 2020, Value of Information analysis of a fracture prediction method. *SPE Reservoir Evaluation & Engineering* 23 (3), 811-823. doi: 10.2118/198906-PA (published online 2019)

Denny, A.C., Fall, A., Orland, I.J., Valley, J.W., Eichhubl, P., Laubach, S.E., 2020, A history of porewater oxygen isotope evolution in the Cretaceous Travis Peak Formation in East Texas. *Geological Society of America Bulletin* 132 (7-8), 1626-1638. doi: 10/1130/B35291.1 (published online 2019)

Jordan, T. et al., 2020. Borehole research in New York State can advance utilization of low-enthalpy geothermal energy, management of potential risks, and understanding of deep sedimentary and crystalline geologic systems. *Sci. Dril.*, 28, 75–91. <https://doi.org/10.5194/sd-28-75-2020>

2019

Laubach, S.E., Lander, R.H., Criscenti, L., et al. 2019, The role of chemistry in fracture pattern development and opportunities to advance interpretations of geological materials. *Reviews of Geophysics* 57 (3), 1065-1111. doi:10.1029/2019RG000671 | *According to ISI Web of Science, as of March 2023, this is a 'highly cited paper' that received enough citations to place it in the top 1% of its academic field based on a highly cited threshold for the field and publication year*

Wang, Q.,† Laubach, S.E., Gale, J.F.W., and Ramos, M.J.†, 2019, Quantified fracture (joint) clustering in Archean basement, Wyoming: application of Normalized Correlation Count method. *Petroleum Geoscience*, 25, 415-428. doi:10.1144/petgeo2018-146 Invited.

Weisenberger, T.[§], Eichhubl, P., Laubach, S.E., and Fall, A., 2019, Degradation of fracture porosity by carbonate cement, Piceance basin, Colorado, USA. *Petroleum Geoscience*, 25, 354-370. doi:10.1144/petgeo2018-162 Invited.

Ukar, E., Laubach, S.E., and Hooker, J.N.,† 2019. Outcrops as guides to subsurface natural fractures: example from the Nikanassin Formation tight-gas sandstone, Grande Cache, Alberta Foothills, Canada. *Marine & Petroleum Geology*, 103, 255-275. doi.org/10.1016/j.marpetgeo.2019.01.039.

Ramos, M.J.,† Espinoza, D.N., Laubach, S.E., Torres-Verdin, C., 2019. Quantifying static and dynamic stiffness anisotropy and nonlinearity in finely laminated shales: experimental measurement and modeling. *Geophysics* 84 (1), MR25-MR36. doi.org/10.1190/geo2018-0032.1.

Ramos, M.J.,† Espinoza, D.N., Goldfarb, E.J., Tisato, N., Laubach, S.E., Torres-Verdin, C., 2019. Microstructural controls on elastic anisotropy of finely laminated Mancos Shale. *Geophysical Journal International*, 216 (2), 991-1004. doi.org/10.1190/geo2018-0032.1

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Laubach, S.E., Lamarche, J., Gauthier, B.D.M., Dunne, W.M., and Sanderson, D.J., 2018. Spatial arrangement of faults and opening-mode fractures. *Journal of Structural Geology* 108, 2-15. doi:org.10.1016/j.jsg.2017.08.008

Laubach, S.E., Hundley, T.H.,† Hooker, J.N.,† and Marrett, R., 2018. Spatial arrangement and size distribution of normal faults, Buckskin Detachment upper plate, Western Arizona. *Journal of Structural Geology* 108, 230-242. doi.org/10.1016/j.jsg.2017.10.001

Hooker, J.N.,† Laubach, S.E., and Marrett, R., 2018. Microfracture spacing distributions and the evolution of fracture patterns in sandstones. *Journal of Structural Geology* 108, 66-79. doi.org/10.1016/j.jsg.2017.04.001

Li, J.Z.,† Laubach, S.E., Gale, J.F.W., and Marrett, R.A., 2018. Quantifying opening-mode fracture spatial organization in horizontal wellbore image logs, core and outcrop: application to Upper Cretaceous Frontier Formation tight gas sandstones, USA. *Journal of Structural Geology* 108, 137-156. doi.org/10.1016/j.jsg.2017.07.005

Marrett, R., Gale, J.F.W., Gomez, L.A.† and Laubach, S.E., 2018. Correlation analysis of fracture arrangement in space. *Journal of Structural Geology* 108, 16-33. doi.org/10.1016/j.jsg.2017.06.012 AAPG Petroleum Structure & Geomechanics Division, *Best Recent Paper*, 2019

2017

English, J.M., and Laubach, S.E., 2017. Opening-mode fracture systems – Insights from recent fluid inclusion microthermometry studies of crack-seal fracture cements. In Turner, J.P., Healy, D., Hillis, R.R., and Welch, M., eds., *Geomechanics and Geology: Geological Society, London, Special Publications*, 458, 257–272. doi:10.1144/SP458.1

Ukar, E.§, Lopez, R.G., Laubach, S.E., Gale, J.F.W., Manceda, R., and Marrett, R., 2017. Microfractures in bed-parallel veins (beef) as predictors of vertical macrofractures in shale: Vaca Muerta Formation, Agrio Fold-and-Thrust Belt, Argentina. *South American Journal of Earth Sciences* 79, 152–169. doi.org/10.1016/j.jsames.2017.07.015

Ukar, E.§, Lopez, R.G., Laubach, S.E., Manceda, R., and Gale, J.F.W., 2017. New type of kinematic indicator in bed-parallel veins, Late Jurassic-Early Cretaceous Vaca Muerta Formation, Argentina: E-W shortening during Late Cretaceous vein opening: *Journal of Structural Geology* 104, 31–47. doi:10.1016/j.jsg.2017.09.014

2016

Laubach, S.E., Fall, A., Copley, L.K.†, Marrett, R., Wilkins, S., 2016, Fracture porosity creation and persistence in a basement-involved Laramide fold, Upper Cretaceous Frontier Formation, Green River Basin, U.S.A. *Geological Magazine*, v. 153 (5/6), p. 887-910. doi:10.1017/S0016756816000157

Ukar, E.§, Laubach, S.E., Marrett, R., 2016, Quartz c-axis orientation patterns in fracture cement as a measure of fracture opening rate and a validation tool for fracture pattern models: *Geosphere* 12 (2), 400–438, doi: 10.1130/GES01213.1

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Fall, A., Ukar, E., Laubach, S.E., 2016, Origin and timing of Dauphiné twins in quartz cement in fractured sandstones from diagenetic environments: insight from fluid inclusions. *Tectonophysics*, 687, 195-209. doi.org/10.1016/j.tecto.2016.08.014

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Lander R.H., and Laubach, S.E., 2015, Insights into rates of fracture growth and sealing from a model for quartz cementation in fractured sandstones. *Geological Society of America Bulletin*, v. 127, no. 3-4, p. 516-538. doi: 10.1130/B31092.1 | No. 2 'Most Read' December 2014; No. 5 'Most-read' article during October & November 2014, according to publisher.

Fall, A., Eichhubl, P., Bodnar, R.J., Laubach, S.E., Davis, J.S., 2015, Natural hydraulic fracturing of tight-gas sandstone reservoirs, Piceance Basin, Colorado. *Geological Society of America Bulletin*, 127, no. 1-2, p. 61-75. doi:10.1130/B31021.1. | No. 2 'Most read' January 2015; No. 23 'Most-read' article October 2014; No. 9 article November 2014, according to publisher.

Hooker, J.N., † Larson, T.E., Laubach, S.E., Eichhubl, P., Eakin, A., † Fall, A., Marrett, R., 2015, Fracturing and fluid-flow in a sub-décollement sandstone; or, a leak in the basement. *Journal of the Geological Society, London*, 172, 428-442. doi: 10.1144/jsg2014-128

Alzayer, Y., † Eichhubl, P., Laubach, S.E., 2015, Non-linear growth kinematics of opening-mode fractures. *Journal of Structural Geology*, 74, 31-44, doi.org/10.1016/j.jsg.2015.02.003.

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Laubach, S.E., Eichhubl, P., Hargrove, P.†, Ellis, M.A.†, Hooker, J.N.†, 2014, Fault core and damage zone fracture attributes vary along strike owing to interaction of fracture growth, quartz accumulation, and differing sandstone composition. *Journal of Structural Geology*, 68, Part A, 207-226. doi: 10.1016/j.jsg.2014.08.007. | No. 12 Most Downloaded article, *Journal of Structural Geology*, January 2015, according to Publisher.

Gale, J.F.W., Laubach, S.E., Olson, J.E., Eichhubl, P., and Fall, A., 2014, Natural fractures in shale: a review and new observations. *AAPG Bulletin*. v. 98, no. 11, p. 2165-2216. doi: 10.1306/08121413151 | 2nd place, *BEG Publication Award, 2015*; According to *ISI Web of Science*, as of May/June 2016 and March 2023, Gale et al. 2014 is a 'highly cited paper' that received enough citations to place it in the top 1% of its academic field based on a highly cited threshold for the field and publication year

Anders, M.H., Laubach, S.E., and Scholz, C.H., 2014, Microfractures: a review. *Journal of Structural Geology*. 69, Part B, p. 377-394. doi: 10.1016/j.jsg.2014.05.011. | No. 1 Most Downloaded article, *Journal of Structural Geology*, Fall 2014, according to Publisher | According to *ISI Web of Science*, as of March 2023, this is a 'highly cited paper' that received enough citations to place it in the top 1% of its academic field based on a highly cited threshold for the field and publication year

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Olson, J.E., and Laubach, S.E., 2014, Introduction to special section: Hydrofracturing—modern and novel methods. *The Leading Edge* 33, no. 10, p. 1088-1088. doi: 10.1190/tle33101088.1

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Hooker, J.N., † Laubach, S.E., and Marrett, R., 2013, Fracture-aperture size frequency, spatial distribution, and growth processes in strata-bounded and non-strata-bounded fractures, Cambrian Mesón Group, NW Argentina: *Journal of Structural Geology*, 54, p. 54–71. | *Jackson School Bronze Award Best Student Paper 2014. Best Student Paper, Energy Theme 2014; 2013 Second most*

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2012

Ellis, M.A.,† Laubach, S.E. Eichhubl, P., Olson, J.E. and Hargrove, P.,† 2012, Fracture development and diagenesis of Torridon Group Applecross Formation, near An Teallach, NW Scotland: millennia of brittle deformation resilience? *Journal of the Geological Society, London*. 169, no. 3, p. 297–310. doi: 10.1144/0016-76492011-086. | 2012 Top 10 'Most Read' (downloads) for journal, according to publisher

Fall, A.[§], Eichhubl, P., Cumella, S.P., Bodnar, R.J., Laubach, S.E., and Becker, S.P., 2012, Testing the basin-centered gas accumulation model using fluid inclusion observations: Southern Piceance Basin, Colorado: *AAPG Bulletin*, 96, no. 12, p. 2297–2318. doi:10.1306/05171211149

Garland, J., Neilson, J.E., Laubach, S.E., and Whidden, K.J., 2012, Advances in carbonate exploration and reservoir analysis, in Garland, J., Neilson, J. E., Laubach, S. E., and Whidden, K. J., eds., *Advances in carbonate exploration and reservoir analysis: Geological Society, London, Special Publications*, 370, p. 1–15. doi: 10.1144/SP370.15

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Structural Diagenesis blog <http://www.jsg.utexas.edu/sdi/blog/>

Websites built and maintained

FRAC website: <http://www.beg.utexas.edu/frac/index.php>; <http://www.beg.utexas.edu/frac/> and earlier incarnations: see the BEG web site article: <http://www.beg.utexas.edu/node/4130> and the paper: Burns, S., Laubach, S. E., 1997. Virtual Collaboratory™, Frac City™, facilitates geoscientific collaboration and technology transfer. The Costs and Values of Geoscience Information 28, 111-115. One of the oldest web sites associated with UT

Structural diagenesis website: <http://www.jsg.utexas.edu/sdi/index.html>

JSG Energy geosciences website: [http://www.jsg.utexas.edu/erg/energy_geoscience/\(superseded\)](http://www.jsg.utexas.edu/erg/energy_geoscience/(superseded))

AAPG Reservoir Deformation Research Group website (superseded 2012 by division website)

Dissertation

Polyphase deformation, thrust-induced strain and metamorphism, and Mesozoic stratigraphy of the Granite Wash Mountains, west-central Arizona: Urbana, Illinois, University of Illinois, Ph.D. dissertation, 183 p., 1986.

M.S. Thesis

Structural processes in the Conway Rhyolite Dome (North Wales): Magmatic implications: Urbana, Illinois, University of Illinois, M.S. thesis, 155 p., 1983.

Publication Metrics

Researcher ID: <http://www.researcherid.com/rid/A-5737-2009>

<https://orcid.org/0000-0003-2511-9414>

H index – 53 Google Scholar (January 2020); 44 (ISI Web of Science, Accessed January 2019); GS i10-index 130 (Citations: 12240)

Lecturing

Lectures and Addresses (Invited)

Scale-dependent fracture patterns and flow in low-enthalpy geothermal targets: the role of diagenesis and contingent nodes, Invited Lecture, Fault zones and fluid interactions, key structures for energy transition, International Geological Congress, Busan, South Korea, August 24-31, 2024

Brittle deformation with focus on China: structural diagenetic processes in fractures and how they vary with thermal history, invited keynote, PetroChina Research Forum, Hangzhou Research Institute, via zoom, 22 May 2024

Fracture network and spatial arrangement quantification and the role of chemical/mechanical interaction across scales, Invited Keynote Lecture, International Association for Structural Geology & Tectonics and the Indian Institute of Technology, Kharagpur, India, 26-28 February 2024.

Unraveling fracture attributes in geothermal targets using sidewall cores. Cornell University, Ithaca, NY, October 11, 2023

Fractures and structural diagenesis in the energy transition, 4th School on Sandstone Diagenesis, sponsored by University of Erlangen, Iowa City, Iowa, 3 August, 2023

The role of chemistry in fracture pattern development: applications to the energy transition. Keynote. Energy Geoscience Conference 2023, Aberdeen, Scotland, 16-18 May, 2023

Scale-dependent fracture patterns and flow in low-enthalpy geothermal targets: the role of diagenesis and contingent nodes. Invited. EGU General Assembly, Vienna, Austria, April 2023

Bizarre secrets of fractures in the Flathead sandstone and why they matter for geothermal everywhere. Invited public lecture, Geologists of Jackson Hole, link to video: <https://www.youtube.com/watch?v=djcQ9mCIPhQ>, Jackson, 7 March, 2023

Role of chemistry in fracture pattern development. Keynote. Penrose Conference: Progressive Failure of Brittle Rocks. GSA. Flat Rock, NC, June 20-24, 2022

Maximizing value of core in fracture analysis using insights from structural diagenesis, Geological Society of London, Core Values: The Role of Core in 21st Century Reservoir Characterisation, London (virtual), 4-7 May 2021

The complete mechanics or the complete chemistry? Invited. AAPG Petroleum Structure & Geomechanics Division, San Antonio, TX, May 21, 2019

Recent developments in fracture research, Keynote. China Conference, April, 2019

Future directions in fractured reservoir research, panelist presentation, The Society of Petroleum Engineers (SPE) workshop Mature Fields in Mexico, Villahermosa, MX February 18-19, 2019

Fracture corridors and structural diagenesis. Invited keynote. Geological Society of London, The Geology of Fractured Reservoirs conference, London, UK, October 24-25, 2018

Progress in fracture analysis. Fracture Research and Application Consortium annual meeting, Casper, Wyoming, September 17-19, 2018

Predicting fracture porosity evolution. DOE Basic Energy Sciences Principal Investigators meeting, Gaithersburg, MD, August 7-9, 2018

Role of chemical-mechanical interaction in fracture size and spacing patterns. Seminar (invited), Karlsruhe Institute of Technology, Karlsruhe, Germany. July 31, 2018

Chemical-mechanical feedback and fracture size and spacing patterns. Invited presentation, 2018 EAGE Annual Conferences and Exhibition, Copenhagen, Denmark, June 13, 2018

Structural geology and geomechanics, Panelist, National Priorities for Research, Technological Development and Human Resources Training, to optimize the Mexican production portfolio, workshop, Mexico City, April 11-13, 2018

Fractures: a brief overview. Mechanical discontinuities from faults to microfractures. Invited keynote, DOE Basic Energy Sciences workshop "Information is in the Noise: Signatures of Evolving Fracture Systems. The Machine Learning/Deep Learning Challenge", Gaithersburg MD, March 28-30, 2018

Evolving fracture systems: field-based observations. Invited presentation, DOE Basic Energy Sciences workshop "Information is in the Noise: Signatures of Evolving Fracture Systems. The Machine Learning/Deep Learning Challenge", Gaithersburg MD, March 28-30, 2018

Structural diagenesis of fracture systems. Keynote address, Third EAGE Workshop on Naturally Fractured Reservoirs, 6 February, 2018, Muscat, Oman

Structural diagenesis of faults in sandstone, invited talk, 2017 GSA Fall Meeting faults and fluids session titled: "Spatiotemporal variations and the role of fluids in fault-zone hydromechanical properties", GSA Annual Meeting, Seattle WA, October 22, 2017.

Reconstructing fracture opening histories and timing using structural diagenesis: invited lecture, presented at Oxford University, Oxford UK, December 2, 2016.

Chemical-mechanical interaction in formation of fracture size patterns: presented at Basic Energy Sciences Principal Investigators workshop, Gaithersburg, Md., August 15, 2016.

Predicting subsurface natural fractures and their effects on reservoir behavior: invited lecture presented to Department of Petroleum Engineering, Texas A&M University, J. L. Frank Graduate Seminar Series in Petroleum Engineering, College Station, Texas, April 4, 2016.

Fracture mechanics and fracture pattern evolution near faults in reactive environments: presented to Tarim Oil Field Company, Korla, China, May 27, 2016

Evidence for feedback in fracture pattern development: presented to Basic Energy Sciences panel on fracture geomechanics and fracture growth, Department of Energy workshop, Leesburg, VA, May 10, 2016.

Fracture mechanics and fracture pattern evolution in deep, hydrothermal and reactive environments: presented to Basic Energy Sciences panel on fracture geomechanics and fracture growth, Department of Energy workshop, Leesburg, VA, May 10, 2016.

The role of diagenesis in modulating fracture size, invited seminar, Aix-Marseille Université, Marseille, France, October 1, 2015.

The role of structural diagenesis in faulting and fracturing of upper crustal rocks, invited session keynote, European Geophysical Union General Assembly, Vienna, Austria, April 2015.

Rates of fracture array growth and sealing from a model for quartz cementation and implications for fracture size scaling Basic Energy Geosciences Principal Investigators Symposium, Gaithersburg, MD, May 2014.

Effects of concurrent cement precipitation on fracture growth: predicting fracture size (departmental seminar); and Current developments in the petroleum industry (class presentation): invited talks, University of Minnesota, Department of Earth Sciences, Minneapolis, Minnesota, April 3rd and 4th, 2014.

Effets des précipitations du ciment simultanée sur la croissance de la fractures: Prédire taille: invited talk, Total and Aix-Marseille Université, Pau, & Marseille, France, December 17, 2013.

Predicting size and why it matters: A structural diagenesis approach to fracture prediction: Rocky Mountain Section-SEPM, invited talk, Denver, October 29, 2013.

The geology of natural fractures: SEG Post-Convention Workshop: Are we able to detect and characterize fractures? invited lead-off talk, Houston, Texas, September 27, 2013.

Elected Editor's report on AAPG Publications: annual presentation to AAPG House of Delegates, Pittsburgh, Pennsylvania, 2013.

New technical division proposal: Petroleum structure and geomechanics division: House of Delegates Midyear Meeting, Boulder, CO, December 2012.

Diagenetic controls on fracture size distributions: presented at 2012 GSA Annual Meeting & Exposition, Charlotte, North Carolina, November 7, 2012.

Elected Editor's report on AAPG Publications: annual presentation to AAPG House of Delegates, Long Beach, California, 2012.

On the organizational structure of AAPG: Advisory Council, AAPG Leadership Conference, Tulsa, OK, August 2012.

The Association role in fostering scientific breakthrough: AAPG Leadership Conference, Tulsa, OK, August 2012.

Degradation and stimulation for unconventional: presented to Reservoir Deformation Research Group, Structural Geology and its Role in Describing and Optimizing Production from Unconventional Petroleum Systems, Houston, Texas, April 2011.

Structural diagenesis, resource plays, the Highlands of Scotland, and curriculum development: AAPG Distinguished Lecture, various presentations, listed elsewhere, 2011–2012

Structural diagenesis: Kirkpatrick lecture: presented at Department of Geology colloquium, University of Illinois, Urbana, Illinois, January 2010.

The geology of unconventional gas plays: presented at Illinois Oil and Gas Association, Mt. Vernon, Illinois, January 2010.

Diagenesis, structure and producibility in unconventional gas plays: presented at Illinois Geological Survey, Champaign, Illinois, January 2010.

Formation and accumulation of unconventional petroleum accumulations in the context of fluid history and fracture analysis: invited keynote address presented at Fifth International symposium on Formation and Accumulation Mechanisms of Petroleum and Evaluation of Petroleum Resources, China State Key Laboratory of Petroleum Resource and Prospecting, Beijing, China, October 2009.

How fractures in sedimentary rocks open and seal: insights from structural diagenesis: presented at ConocoPhillips colloquium, Houston, Texas, May 2009.

Fractures in the New Albany Shale: implications for development of effective drilling and completion technologies: presented at the RPSEA Unconventional Gas Review Meeting, Denver, Colorado, April 2009.

How fractures open and stay that way: Lessons from structural diagenesis: presented at Department of Earth & Planetary Sciences colloquium, University of New Mexico, Albuquerque, New Mexico, February 2009.

Modeling natural fractures: presented at Shell Canada, Calgary, Alberta, December 2008.

Structural diagenesis: fracture opening and sealing processes: presented at International Geological Congress, Oslo, Norway, August 2008.

Current state of the art in reservoir fracture mechanics with emphasis on roles of fluid flow and chemistry: presented to ExxonMobil Research, Annandale, New Jersey, July 2008.

Open fractures, diagenesis and in situ stress: presented at AAPG Hedberg Research Conference, Casper, Wyoming, July 2008.

Using diagenesis information to measure fracture timing: presented to Consortium for Quantitative Prediction of Sandstone Reservoir Quality, Lost Pines, Texas, June 2, 2008.

Structural diagenesis: the integration of structural geology and diagenesis: presented at the AAPG Annual Convention, San Antonio, Texas, April 2008.

Structural Diagenesis Symposium leader, Scotland, May 2007.

Challenges and solutions in fractured rock analysis: presented to Fort Smith Geological Society, Fort Smith, Arkansas, February 2007.

Insights into reservoirs from structural diagenesis: presented to Ft. Smith Geological Society, Ft. Smith, Arkansas, February 13, 2007.

Structural complexity in structurally simple fractured reservoir analogs: presented at AAPG Convention, Long Beach, California, April 2007.

Diagenetic controls on fracture size scaling and fracture porosity evolution, Cambrian Eriboll Group Sandstone, NW Scotland: Implications for distributed brittle deformation and fluid flow in the continental lithosphere: presented at Geological Society of London Arthur Holmes Meeting, Ullapool, Scotland, May 2007.

Fracture processes and fracture history, Cambrian Eriboll Sandstone: presented at Geological Society of London Arthur Holmes Meeting, Ullapool, Scotland, May 2007.

Verifiable predictions of fractured reservoir attributes: presented at American Association of Petroleum Geologists International Conference and Exhibition, Perth, Australia, November 2006.

Three presentations on research progress and status: presented at Fracture Research and Application Consortium Annual Meeting, Austin, Texas, October 2006.

Insights into reservoir heterogeneity from fracture and structural diagenesis research: presented to Petrobras, Rio de Janeiro, Brazil, July 2006.

What are the most important types of geological data that need to be quantified to best constrain the fabrics of reservoir rocks and fracture systems for 4D reservoir modeling and production?: invited lecture presented to AAPG Reservoir Deformation Group (also served as panelist), Houston, Texas, April 11, 2006.

Scales of heterogeneity in fractured reservoirs: presented to Geological Society of London, London, England, March 2006.

Fractured sandstone outcrops in northeast Mexico: guides to the attributes of fractures in tight gas sandstones: presented at American Association of Petroleum Geologists, Rocky Mountain Section, Jackson, Wyoming, September 2005.

Regional subthrust fracture arrays in outcrop: guide to attributes of tight gas sandstones: presented at American Association of Petroleum Geologists, Rocky Mountain Section, Jackson, Wyoming, September 2005.

Structural diagenesis—linked chemical and mechanical processes in sedimentary basins: invited lecture presented at American Association of Petroleum Geologists Convention, Paris, France, September 2005.

Linked diagenesis and fracture patterns and their effect on fluid flow in fractured carbonate rocks: presented at American Association of Petroleum Geologists Convention, Paris, France, September 2005.

Interdisciplinary studies in sedimentary basins: presented at AAPG Hedberg Research Conference (invited keynote address), Austin, Texas, February 9, 2004.

Progressive diagenesis, evolving mechanical stratigraphy, and fracture patterns in Canyon Sandstone (with S. Dutton and B. Marin): poster presented at AAPG Hedberg Conference, Austin, Texas, February 9, 2004.

Fracture intensity and fracture cementation: an example from a horizontal core in the Piceance Basin (with L. Gomez, J. Gale, and R. Marrett): poster presented at AAPG Hedberg Conference, Austin, Texas, February 9, 2004.

Advanced technology for predicting the fluid flow attributes of naturally fractured reservoirs from quantitative geologic data and modeling: presented to Department of Energy, Tulsa, Oklahoma, August 19, 2003.

Fracture characterization (invited keynote lecture): presented at Université de Liège, Liège, Belgium, June 10, 2003.

Linked mechanical and chemical processes in the development of fracture patterns: presented at Departmental Speaker Series, Department of Geology, University of Idaho, Moscow, Idaho, January 23, 2003.

Future research opportunities for structural geologists in the petroleum industry: presented at Student Seminar, Department of Geology, University of Idaho, Moscow, Idaho, January 23, 2003.

New fracture characterization methods: presented to Shell E & P, Houston, Texas, September 18, 2002.

UT fracture research in the Rockies: presented to EOG Resources, Denver, Colorado, August 19, 2002.

Calibrating seismic using new fracture characterization methods: presented to Williams E & P, Denver, Colorado, August 19, 2002.

Fractures in Frontier Formation: presented at Fracture Research and Application Consortium, Applications Meeting, Jackson, Wyoming, June 22, 2002.

Fundamentals and application of fracture quality methods: presented at Fracture Research and Application Consortium Applications Meeting, Jackson, Wyoming, June 22, 2002.

Research progress on fracture porosity prediction: presented at Fracture Research and Application Consortium Research Meeting, Monterrey, Mexico, February 25, 2002.

Structural diagenesis: implications for tectonic interpretation of distal structures: presented to Institute of Geophysics, The University of Texas at Austin, Austin, Texas, November 2001.

Insights from structural diagenesis for structural analysis: presented to Northern Illinois University, DeKalb, Illinois, November 2001.

Recent developments in the domestic U.S petroleum industry: a research organization perspective: presented to Northern Illinois University, DeKalb, Illinois, November 2001.

Drilling and stimulation strategy: are open fractures aligned with maximum horizontal stress?: presented at Rocky Mountain Association of Geologists Symposium, Denver, Colorado, October 2001.

Identifying open fractures in Rocky Mountain reservoirs: presented at Rocky Mountain Association of Geologists Symposium, Denver, Colorado, October 2001.

Using surrogates for fracture analysis: presented to Rocky Mountain Association of Geologists, luncheon talk, Denver, Colorado, July 2001.

Summary of fracture attributes in dolomite: presented to geological staff, Pemex, Ciudad del Carmen, Mexico, January 2001.

Three lectures in Petroleum & Geosystems Engineering (CPE): presented to P&GSE, Austin, September 2000.

Focus on fault seal: presented to American Association of Petroleum Geologists, Reservoir Deformation Research Group, New Orleans, Louisiana, April 2000.

Fracture analysis with applications to Oklahoma reservoir: presented to Tulsa Geological Society, Tulsa, Oklahoma, April 2000.

Innovations in fracture characterization and modeling of clastic and carbonate reservoirs: presented at PTTTC's Reservoir Characterization Technologies for the Next Millennium: Virtual Reality, Multicomponent Seismic, Fracture Modeling, and Borehole Imaging, Midland, Texas, February 2000.

Degradation and the emergent threshold: a review of new fracture characterization methods for mature fields: presented to SIPES monthly luncheon meeting, Austin, November 1999.

Identification of controls on fracture permeability in carbonate reservoirs: presented to Pemex, 2nd Cantarell Conference, Mexico City, October 1999.

Case study of fracture scaling: presented to International Conference, AAPG and AMGP, Vera Cruz, October 1999.

Fracture characterization: presented to International Conference, AAPG and AMGP, Vera Cruz, October 1999.

Defining new plays in western Venezuela: presented to PDVSA, Austin, September 1999.

Review of fracture characterization and modeling methods: presented to Enron, Austin, August 1999.

Fractured reservoirs: presented to Marathon, Littleton, Colorado, January 1999.

Rapid prediction of fracture fluid flow: presented to U.S. Department of Energy workshop, Geologic studies of fractures in reservoirs, Austin, August 1998.

Identifying productive fairways in structured reservoirs: presented to Conoco, Inc., Midland, July 1998.

Analytical laboratory instruments in modern petroleum industry research: presented to Edge Scientific Instruments, Santa Monica, California, June 1998.

Reservoir evaluation: presented to Sanchez Oil & Gas, Austin, June 1998.

Web-based professional group information exchange: presented to AAPG Research Committee and AAPG Reservoir Deformation Research Group meeting, Salt Lake City, Utah, May 1998.

The challenges of reservoir structural analysis in the 21st Century: presented to AAPG Reservoir Deformation Research Group annual meeting, Salt Lake City, May 1998.

Origin of subsurface fractures: Invited keynote speaker, The Woodworth Conference of the Geological Society of London, marking 100 years in the evolution of fracture analysis, Coleraine, Northern Ireland, April 1998.

Strategies for reservoir simulation: presented to YPF/Maxus Energy Corporation, Dallas, Texas, March 1998.

Revolution in fractured core analysis: implications for the petroleum engineer: presented to Departmental Seminar, Petroleum and Geosystems Engineering, The University of Texas at Austin, Austin, Texas, February 1998.

Revolution in fractured core analysis: implications for the petroleum engineer: presented to Departmental Seminar, Petroleum and Geosystems Engineering, The University of Texas at Austin, Austin, Texas, February 1998.

Research on structural geology and reservoir engineering: briefing presented to the Chairman, The University of Texas Board of Regents, Austin, Texas, January 1998.

The new paradigm in core analysis: presented to Department of Geology, New Mexico Tech University, Socorro, New Mexico, January 1998.

Strategies for reservoir structural analysis: lecture presented to PDVSA (Maraven), Caracas, Venezuela, January 1998.

Structural geology in support of reservoir engineering in modern reservoir management: presented to PGSE 391 graduate class in reservoir engineering, Department of Petroleum and Geosystems Engineering, The University of Texas at Austin, November 1997.

Métodos revolucionarios de análisis de muestras de testigos para yacimientos fracturados: keynote address presentado para la celebración del 32dcmo aniversario de la fundación del Instituto Mexicano del Petróleo, Mexico City, Mexico, October, October 1997.

Diagenetic controls on fracture permeability: presented to 36th U.S. Rock Mechanics Symposium, Columbia University, New York, July 1997.

Structure of the new AAPG Reservoir Deformation Research Group: presented to AAPG Hedberg Research Conference, Bryce, Utah, June 1997.

Using core analysis to characterize fractures and calibrate seismic data: presented to GRI technical advisory group, Denver, Colorado, June 1997.

Fracture properties from rock microstructure: presented to AAPG Hedberg Research Conference, Bryce, Utah, June 1997.

Diagenesis from a different perspective: Presented to SEPM Clastic Diagenesis Group discussion meeting, Dallas, Texas, April 1997.

Uncovering fractures: keynote address presented to Imaging Systems dinner, AAPG convention, Dallas, Texas, April 1997.

Recent breakthroughs in analysis of natural fractures: presented to Department of Geology, Tulsa University, Tulsa, Oklahoma, February 1997.

Quantification and prediction of reservoir fracture attributes: presented to PEMEX, Tampico, Mexico, January 1997.

Fracture analysis methods and applications and Application of new structural petrology methods to Chevron's Wolfcamp sandstone core, Pakenham field: presented to Chevron, Midland, Texas, January 1997.

Using petrology to unlock gas resources in West Texas: presented to Chevron, Houston, Texas, August 1996.

Future of outcrop-based studies of natural fractures and Advanced subsurface fracture and stress characterization methods: presented to Mobil Corp. strategy meeting for fracture and stress research, Dallas, Texas, August 1996.

Field and core seminar on fracture systems in carbonate rocks: presented to Amoco Production Research, Austin, Texas, July 1996.

New fracture characterization methods for siliciclastic rocks: presented to North American Rock Mechanics Symposium, Montreal, Canada, June 1996.

Geochemical controls on the evolution of porosity and implications of new microstructural observations for the kinetics of crack growth at subcritical tensile stresses: presented to Exxon Production Research, Houston, Texas, June 1996.

Synthesis of petrologic and structural approaches for solving reservoir characterization challenges: presented to Union Pacific Resources, Fort Worth, Texas, May 1996.

New fracture characterization methods and Practical application of new methods: presented to fracture workshop sponsored by Bureau of Economic Geology, Gas Research Institute and Geological Society of America, Austin, Texas, March 1996.

Investigations of fractured reservoirs: presented to Enron Oil & Gas, Austin, Texas, March 1996.

Using diagenesis information to improve interpretation of natural fractures: The University of Texas at Austin Department of Geological Sciences seminar, Austin, Texas, November 1995.

Natural fracture detection using cathodoluminescence: Gas Research Institute Geology Technical Advisory Group meeting, Austin, Texas, November 1995.

Gas research program overview: lecture to Siberian oil and gas managers' training program, Austin, Texas, September 1995.

Improved resource characterization technology: presented at Gas Research Institute Project Advisors Group meeting, Grand Junction, Colorado, July 1995.

Fracture and diagenesis analyses applicable to Canyon Sandstone: presented at Canyon working group meeting, Midland, Texas, June 1995.

Introduction to new research project in Wilcox Lobo play: presented at Wilcox Lobo working group meeting, Houston, Texas, May 1995.

Introduction and concept for new fracture analysis approach; Using a new classification of diagenesis to predict fracture conductivity: presented at Fracture Quantification working group meeting, Fort Worth, Texas, May 1995.

Differential compaction of interbedded sandstone and coal: presented at international symposium on Forced (Drape) Folds and Associated Fractures, London, England, April 1995.

Analyses of slopes in jointed weak rock masses using distinct element method: talk given at Second International Conference on Mechanics of Jointed and Faulted Rock, Vienna, Austria, April 1995.

Fault and joint swarms in a normal fault zone: presented at Second International Conference on Mechanics of Jointed and Faulted Rock, Vienna, Austria, April 1995.

Bureau of Economic Geology research in low-permeability gas reservoirs: presented to research evaluation visiting committee, Austin, Texas, January 1995.

Microfractures, macrofractures, and diagenesis: presented to Workshop 2, North American Rock Mechanics Symposium, Austin, Texas, May 1994.

Sonora Canyon natural fractures and fracture toughness studies: presented at Seminar on Geology of a Stratigraphically Complex Natural Gas Play, Canyon Sandstone, Val Verde Basin, Texas, Midland, Texas, April 1994.

Ozona Canyon sandstone natural fractures and rock properties: presented at Seminar on Geology of a Stratigraphically Complex Natural Gas Play, Canyon Sandstone, Val Verde Basin, Texas, Midland, Texas, April 1994.

Review and analysis of operator survey results and future challenges to development: presented at Seminar on Geology of a Stratigraphically Complex Natural Gas Play, Canyon Sandstone, Val Verde Basin, Texas, Midland, Texas, April 1994.

Regional tectonic, stratigraphic, and hydrodynamic framework of the Val Verde Basin: presented at Seminar on Geology of a Stratigraphically Complex Natural Gas Play, Canyon Sandstone, Val Verde Basin, Texas, Midland, Texas, April 1994.

Introduction to geology and production characteristics of Canyon Sandstone: presented at Seminar on Geology of a Stratigraphically Complex Natural Gas Play, Canyon Sandstone, Val Verde Basin, Texas, Midland, Texas, April 1994.

Complex natural gas reservoirs: presented to Gas Research Institute Project Advisors Group meeting, Golden, Colorado, March 1994.

Introduction to the North American Rock Mechanics Symposium: presented to 34th U.S. Symposium on Rock Mechanics, Madison, Wisconsin, June 1993.

Lessons and implications of a new report on tight gas sandstones: presented to GRI Project Advisors Group meeting, Oklahoma City, Oklahoma, May 1993.

Natural fractures in Sonora Canyon sandstones, Sonora and Sawyer fields, Sutton County, Texas: presented to 1993 Society of Petroleum Engineers Rocky Mountain Regional and Low-Permeability Reservoir Symposium, Denver, Colorado, April 1993.

Current issues in structural research in the petroleum industry: presented to ARCO Exploration & Production Technology, Plano, Texas, April 1993.

Fracture patterns in Cretaceous sandstones of the western United States—are they representative of those in reservoirs?: presented to ARCO Exploration & Production Technology, Plano, Texas, April 1993.

Natural fractures: profiting from a widespread reservoir element: presented to GRI/DOE Greater Green River Basin Natural Gas Technology workshop, Denver, Colorado, November 1992.

Unraveling the relationship between fracturing and diagenesis: presented to Lawrence Berkeley National Laboratories, Berkeley, California, November 1992.

Problems associated with interpretation of fracture patterns in coal and Future research directions in structural analysis of fractures: presented to GRI Fracture Research workshop, Austin, Texas, June 1992.

Frontier Formation stratigraphy, diagenesis and natural fractures: presented to Gas Research Institute/Society of Petroleum Engineers workshop: Conclusions of Research in the Frontier Formation: Casper, Wyoming, May 1992.

Regional state of stress and hydraulic fracture azimuth in the western Green River Basin: presented to Gas Research Institute/Society of Petroleum Engineers workshop: Conclusions of Research in the Frontier Formation: Casper, Wyoming, May 1992.

Summary of BEG geologic studies of Canyon Sandstone, Texas, and Frontier Formation, Wyoming: presented to Gas Research Institute Project Advisors Group meeting, Albuquerque, New Mexico, May 1992.

Fracture patterns in reservoir rocks: presented to Fort Worth Geological Society, Fort Worth, Texas, January 1992.

Observations of Subsurface Fractures and Implications for Interpreting Seismic and Borehole Acoustic Data: presented to Society of Exploration Geophysics Workshop, Houston, Texas, November 1991.

Geological Aspects of Fractured Reservoir Characterization: presented to Forum on Improved Oil and Gas Recovery (speaker and work session technical coordinator), San Antonio and Longview, Texas, November 1991.

Approaches to Predicting Regional Fractures: presented to Houston Geological Society, Short Course—Identifying and Interpreting Fractures, Houston, Texas, October 1991.

Regional Coal Fracture Patterns: presented at 32nd U.S. Symposium on Rock Mechanics, Rock Mechanics as a Multidisciplinary Science, The University of Oklahoma, Norman, Oklahoma, July 1991.

Pitfalls of Fracture Identification and Characterization with Borehole Imaging Logging Systems: presented to Houston Westside Society of Professional Well Log Analysts luncheon meeting, Houston, Texas, February 1991.

Tectonics, Fractures, and Implications for Horizontal Drilling in the Western United States: presented to Department of Geology, The University of Texas at El Paso, El Paso, Texas, October 1990.

Natural Fractures in Gas Reservoirs: briefing presented to Gas Research Institute, Austin, Texas, July 1990.

Analysis of In Situ Stress and Fractures in Reservoir Rocks: two lectures presented to graduate class in reservoir analysis (Geology 391), Department of Geological Sciences, The University of Texas at Austin, Austin, Texas, April 1990.

Insights Into Fault Geometry: Field and Laboratory Studies: presented at Applied Geodynamics Laboratory Board of Advisors Meeting, Austin, Texas, November 1989.

Patterns in the Development of Extensional Fault Block Shape from Comparison of Outcrop-Scale Faults and Physical Models: presented at Norsk Hydro a.s., Bergen, Norway, October 1989.

Aspects of Geological and Geophysical Evaluation of Subsurface Fractures: presented at Norsk Hydro a.s., Bergen, Norway, October 1989.

Application of Borehole-Imaging Logs to Fracture Evaluation in Low-Permeability Gas Reservoirs: invited presentation at SPE Fractured Reservoir Forum, Crested Butte, Colorado, July 1989.

Origin, Distribution, and Effect on Production of Natural Fractures in a Low-Permeability Gas Reservoir with Extensive Quartz Cement: presented at SPE Fractured Reservoir Forum, Crested Butte, Colorado, July 1989.

Stratigraphy, Diagenesis, and Structure of the Travis Peak Formation and Their Effects on Reservoir Quality: presented at Techniques of Comprehensive Evaluation and Completion of Tight Gas Sand Reservoirs: presented to Gas Research Institute Forum/Workshop in association with the Society of Petroleum Engineers Gas Technology Symposium, Dallas, Texas, June 1989.

Geometry of Normal Faults in Layered Rocks: Examples from the Basin and Range Province: presented at Exxon Production Research, Houston, Texas, June 1989.

Current Research on Prediction of Fractures: presented at Exxon Production Research, Houston, Texas, June 1989.

Analysis of Fractures and In Situ Stress in Reservoir Rocks: two lectures presented to graduate class in reservoir analysis (Geology 391), Department of Geological Sciences, The University of Texas at Austin, Austin, Texas, April 1989.

Cretaceous and Tertiary Compressional Tectonics as the Cause of the Sabine Arch, East Texas and Northwest Louisiana: presented at the Gulf Coast Association of Geological Societies 1988 Annual Meeting, New Orleans, Louisiana, October 1988.

Significance of Natural and Coring-Induced Fractures in the Travis Peak Formation for Reservoir Stimulation: presented at the Gulf Coast Association of Geological Societies 1988 Annual Meeting, New Orleans, Louisiana, October 1988.

Coring-Induced Fractures: Indicators of Hydraulic Fracture Propagation Direction in a Naturally Fractured Reservoir: presented at 1988 Society of Petroleum Engineers Annual Technical Conference, Houston, Texas, October 1988.

Fracture Detection in Low-Permeability Reservoir Sandstone: A Comparison of BHTV and FMS Logs to Core: presented at the 1988 Society of Petroleum Engineers Annual Technical Conference, Houston, Texas, August 1988.

Geological Overview of Staged Field Experiment No. 2: presented at Forum on the Relationship Between Rock Mechanical Properties and Acoustic Well Log Data, Lakeway, Texas, May 1988.

Kinematics and Structural Style of Thrust Faults in Western Arizona: presented at the Workshop on the California–Arizona Crustal Transect, sponsored by the U.S. Geological Survey, Flagstaff, Arizona, May 1988.

Stress Measurement and Fracture Detection in the Travis Peak Formation: presented at Schlumberger-Doll Research Center, Ridgefield, Connecticut, May 1988.

Fractured Reservoirs: lectures presented to graduate class in reservoir analysis, Department of Geological Sciences, The University of Texas at Austin, Austin, Texas, March 1988.

Natural Fracture History of the Travis Peak Formation: presented to the Center for Tectonophysics, Texas A&M University, College Station, Texas, February 1988.

Structural Geology of the Travis Peak Formation: presented at the Gas Research Institute Forum on the 1986 Staged Field Experiment No. 1, Lake Conroe, Texas, September 1987.

Stress Measurement and Fracture Analysis in East Texas: presented at GRI Project Advisors Group meeting, Las Vegas, Nevada, February 1987.

Polyphase Deformation and Thrust-Induced Strain, Maria Foldbelt, Western Arizona: presented to University of Illinois, Geology Department colloquium, Urbana, Illinois, May 1986.

Shear Heating and Fault Dynamics: presented to Lehigh University, Geology Department colloquium, Bethlehem, Pennsylvania, February 1986.

Numerous lectures related to professional association service not listed separately.

Numerous lectures to industry and agency research sponsors not listed separately.

[AAPG Distinguished Lecture tour 2011-2012](#)

Structural diagenesis, resource plays, the Highlands of Scotland, and curriculum development: AAPG Distinguished Lecture presented to Tulsa Geological Society, Tulsa, Oklahoma, May 1, 2012.

Structural diagenesis, resource plays, the Highlands of Scotland, and curriculum development: AAPG Distinguished Lecture presented to Department of Geological Sciences, University of Saskatchewan, Saskatoon, Canada, April 12, 2012.

Structural diagenesis, resource plays, the Highlands of Scotland, and curriculum development: AAPG Distinguished Lecture presented to Montana Geological Society, Billings, Montana, April 11, 2012.

Structural diagenesis, resource plays, the Highlands of Scotland, and curriculum development: AAPG Distinguished Lecture presented to Canadian Society of Petroleum Geologists, Calgary, Canada, April 10, 2012. Webcast: <http://cspg.insinc.com/cspglwebcast-laubach20120412/>

Structural diagenesis, resource plays, the Highlands of Scotland, and curriculum development: AAPG Distinguished Lecture presented to Utah Geological Association, Salt Lake City, Utah, April 9, 2012.

Structural diagenesis, resource plays, the Highlands of Scotland, and curriculum development: AAPG Distinguished Lecture presented to Department of Geological Sciences, Texas A&M University, College Station, Texas, April 3, 2012.

Structural diagenesis, resource plays, the Highlands of Scotland, and curriculum development: AAPG Distinguished Lecture presented to Department of Geological Sciences, Michigan State University, East Lansing, Michigan, September 23, 2011.

Structural diagenesis, resource plays, the Highlands of Scotland, and curriculum development: AAPG Distinguished Lecture presented to Department of Geology, Southern Illinois University, Carbondale, Illinois, September 21, 2011.

Structural diagenesis, resource plays, the Highlands of Scotland, and curriculum development: AAPG Distinguished Lecture presented to Department of Geological Sciences, University of Missouri, Columbia, Missouri, September 20, 2011.

Structural diagenesis, resource plays, the Highlands of Scotland, and curriculum development: AAPG Distinguished Lecture presented to Department of Geology and Geophysics, Louisiana State University, Baton Rouge, Louisiana, September 19, 2011.

Structural diagenesis, resource plays, the Highlands of Scotland, and curriculum development: AAPG Distinguished Lecture presented to Department of Geology, Tufts University, Medford, Massachusetts, September 16, 2011.

Structural diagenesis, resource plays, the Highlands of Scotland, and curriculum development: AAPG Distinguished Lecture presented to Department of Geosciences, University of Massachusetts, Amherst, Massachusetts, September 15, 2011.

[SPE Distinguished Lecture tour 2003-2004](#)

Fractures in reservoirs: prediction, characterization, and incorporation in fluid-flow simulations: SPE Distinguished Lecture: presented to Society of Petroleum Engineers, Ho Chi Minh City, Vietnam, November 17, 2004.

Fractures in reservoirs: prediction, characterization, and incorporation in fluid-flow simulations: SPE Distinguished Lecture: presented to Society of Petroleum Engineers, Bartlesville, Oklahoma, October 16, 2004.

Fractures in reservoirs: prediction, characterization, and incorporation in fluid-flow simulations: SPE Distinguished Lecture: presented to Society of Petroleum Engineers, Duncan, Oklahoma, October 15, 2004.

Fractures in reservoirs: prediction, characterization, and incorporation in fluid-flow simulation: SPE Distinguished Lecture: presented to Society of Petroleum Engineers, Austin, Texas, February 24, 2004.

Fractures in reservoirs: prediction, characterization, and incorporation in fluid-flow simulations: SPE Distinguished Lecture: presented to Society of Petroleum Engineers, Villahermosa, Mexico, January 9, 2004.

Fractures in reservoirs: prediction, characterization, and incorporation in fluid-flow simulations: SPE Distinguished Lecture: presented to Society of Petroleum Engineers, Farmington, New Mexico, January 8, 2004.

Fractures in reservoirs: prediction, characterization, and incorporation in fluid-flow simulations: SPE Distinguished Lecture: presented to Society of Petroleum Engineers, Seoul, Republic of South Korea, November 20, 2003.

Fractures in reservoirs: prediction, characterization, and incorporation in fluid-flow simulations: SPE Distinguished Lecture: presented to Society of Petroleum Engineers, Tokyo, Japan, November 19, 2003.

Fractures in reservoirs: prediction, characterization, and incorporation in fluid-flow simulations: SPE Distinguished Lecture: presented to Society of Petroleum Engineers, Manila, The Philippines, November 18, 2003.

Fractures in reservoirs: prediction, characterization, and incorporation in fluid-flow simulations: SPE Distinguished Lecture: presented to Society of Petroleum Engineers, Dongying, China, November 24, 2003.

Fractures in reservoirs: prediction, characterization, and incorporation in fluid-flow simulations: presented to Society of Petroleum Engineers Distinguished Lecture Committee, Houston, Texas, May 8, 2003.

[AAPG Short Course \(Fractured Reservoir School\)](#)

Fractures in reservoirs (various presentations): presented at AAPG Fractured Reservoir School, Austin, Texas, November 10–14, 2004.

Fractured reservoir characterization and modeling: Professional school sponsored by American Association of Petroleum Geologists, Austin, Texas, 2001.

Fractured reservoir characterization and modeling: Professional school sponsored by American Association of Petroleum Geologists, Austin, Texas, November 2000.

Fractured reservoir characterization and modeling: Professional school sponsored by American Association of Petroleum Geologists, Austin, Texas, 1999.

[Bureau of Economic Geology Colloquia](#)

Publishing ethics and writing strategies: Bureau of Economic Geology publication panel discussion (panelist), The University of Texas at Austin, Austin, Texas, November 2016

Deformation of the Earth: Bureau of Economic Geology research seminar, The University of Texas at Austin, Austin, Texas, July 2000.

Specifying lengths of horizontal wells: Bureau of Economic Geology research seminar, The University of Texas at Austin (with J. Stowell and R. Marrett), Austin, Texas, February 2000.

Integrated study of Mara Este field (with Edgar Guevara, Steve Ruppel): presented at Bureau Seminar Series, Austin, December 1999.

Degradation beyond the emergent threshold: presented at Bureau Seminar Series, Austin, September 1999.

Current research on reservoir fractures: presented to Bureau of Economic Geology, The University of Texas at Austin, February 1998.

Advancements in Sandstone Analysis through Axial Point-Load Testing (with S. J. Clift): November 1992.

Current views of fracture development in rock: March 1991.

The uses and limitations of borehole-imaging logs (with E. H. Guevara): November 1988.

Wellbore ellipticity in East Texas (with R. W. Baumgardner, Jr.): November 1987.

Subsurface fracture analysis: April 1987.

[Selected Corporate Schools, Research Seminars](#)

Fracture analysis: professional development course module presented to Statoil, Austin, Texas, January 17, 2017

Structure and diagenesis of reservoirs in NE Venezuela: presented to Repsol YPF, Houston, Texas, January 26, 2004.

Fracture opening history reconstructions: presented at Fracture Research and Application Consortium Annual Research Meeting, Jackson, Wyoming, July 21, 2003.

Surrogate analysis and microstructure imaging: presented at Fracture Research and Application Consortium Workshop, Jackson, Wyoming, July 17, 2003.

Geometry of normal faults and the structure of fault zones: Field Seminar presented to Exxon Production Research, Salome, Arizona, March 1990.

[Workshops \(Selected\) Organized and led](#)

The long view in publication and proposal preparation, BEG workshop, Austin, April 6, 2023.

Information is in the noise: Signatures of evolving of fracture systems, disentangling signals from evolving fracture systems, the machine learning/deep learning challenge, Department of Energy Basic Energy Sciences, workshop, Leesburg, VA, March 28 - 30, 2018.

Fracture mechanics and fracture pattern evolution in deep, hydrothermal, and reactive environments, Department of Energy Basic Energy Sciences, workshop, Leesburg, VA, May 8-10, 2016.

Approaches to fracture characterization: Workshop, Petroleum Technology Transfer Council, San Antonio, Texas, April 2001.

Producibility in tight gas reservoirs: why should you care about fracture quality scaling, major controls on fracture quality: Workshop: Petroleum Technology Transfer Council, San Antonio, Texas, April 2001.

Review of natural fracture research: Workshop: Petroleum Technology Transfer Council, Jackson, Mississippi, April 2001.

Innovations in fracture characterization and modeling of clastic and carbonate reservoirs: presented to Petroleum Technology Transfer Council, Midland, Texas, February 2001.

Fracture quality map of East Texas: Workshop: Fracture Research and Application Consortium Meeting, Austin, Texas, February 2001.

Case studies in application of new fracture characterization methods: Workshop: Fracture Research and Applications Industrial Associates Applications meeting, Austin, Texas, May 2000.

Horizontal cores: presented to Fracture Research and Application Consortium, Austin, December 1999.

Integrated case studies and progress on fundamental understanding of fracture closure: presented at Fracture Research and Application Consortium Annual Meeting, Austin, September 1999.

Current progress in fracture evaluation: presented to New Methods of Fracture Characterization and Simulation workshop, Austin, Texas, May 1997.

Fracture orientation and fracture quality prediction case studies: lessons for practical application: presented to New Methods of Fracture Characterization and Simulation workshop, Austin, Texas, May 1997.

Overview of reservoir simulation project, Summary of fractured reservoir analyses completed to date, New fracture characterization methods, Inferring fracture conductivity from sidewall core samples: presented to industry workshop, Austin, Texas, July 1996.

Fracture, fault, and stress research, Wilcox Lobo natural gas trend, South Texas: presented to Industry Operator Workshop, Houston, Texas, September 1994.

Is cleat-domain overlap real?: presented to Geology of Open-Hole Cavity Completions Workshop, Austin, Texas, September 1993.

Natural fractures in Cretaceous sandstones of the western United States: profiting from a widespread reservoir element: presented to GRI/DOE Greater Green River Basin Natural Gas Technology Workshop, Denver, Colorado, April 1993.

Summary of issues pertaining to detection and characterization of fractures in the subsurface: presented to GRI/BEG Natural Fracture Workshop, Austin, Texas, March 1993.

Selected Short Courses

Short courses taught for Fracture Research & Application Consortium, various years and topics, not listed separately.

Fractures and structural diagenesis in the energy transition, 4th School on Sandstone Diagenesis, sponsored by University of Erlangen, Iowa City, Iowa, 3 August, 2023

Recent trends in fractured reservoir analysis: presented to Society of Petroleum Engineers, Dongying, China, November 23, 2003.

Various short courses taught in other venues not listed separately

Selected University Teaching

Advanced and Graduate courses

Brittle Structure and Structural Diagenesis, GEO 491/381E (27078), Fall 2020

Research in Structural Diagenesis, Geology 394 (GEO 394) 2012-present.

Formal individual instruction, thesis and dissertation courses, various course numbers and years not listed separately, Department of Geological Sciences, The University of Texas at Austin, Austin, Texas, 2006 – present.

Lecturer, Graduate classes in advanced structural geology and tectonics/geophysics and undergraduate classes in structural geology: Lehigh University, Spring 1986.

Lecturer, Graduate classes in advanced structural geology and tectonics/geophysics and undergraduate classes in structural geology: Lehigh University, Fall 1985.

Other Instruction

How rocks fracture. Presented to U.T. Structural Geology class (Cloos), GEO 428 and 380C, December 5, 2018.

Panelist, Academic Career Start Faculty Panel, November 13, 2015.

New methods for fracture prediction and evaluation: presented to U.T. Reservoir Geology class (Tinker/Fisher), Austin, Texas, November 4, 2003.

Diagenetic processes in fractures: presented to U.T. Structural Geology class (Marrett), Monterrey, Mexico, October 31, 2003.

Microfractures: presented to structural geology class, Department of Geological Sciences, The University of Texas at Austin, Austin, Texas, September 30, 2002.

Fracture porosity evolution: presented to structural geology class, Department of Geological Sciences, The University of Texas at Austin, Austin, Texas, September 27, 2002.

Fracture pattern assessment and fractured reservoirs, Brittle structure: GEO 381E, Department of Geological Sciences, The University of Texas at Austin, Austin, Texas, 2002.

New methods in fracture analysis, Structural geology Geo 228, Department of Geological Sciences, The University of Texas at Austin, Austin, Texas, April 2001.

Geoscience issues in fractured reservoir assessment, naturally fractured reservoirs: Petroleum and Geosystems Engineering class PGE 383, Department of Petroleum and Geosystems Engineering, The University of Texas at Austin, Austin, Texas, September 2000.

Graduate Seminar (Informal)

Structural diagenesis seminar: The University of Texas at Austin, Department of Geological Sciences, Austin, Texas, Fall 2005 – present.

Research and writing workshop: The University of Texas at Austin, Department of Geological Sciences, Austin, Texas, Fall 2005 and subsequent semesters (see SDI web site).

Selected Field Trips

Leader, Brittle structure and the energy transition: field trip to outcrops in upstate New York, consortium industry representatives and students and staff, UT and Cornell, Burlington, VT, October 24-26, 2023.

Leader, Structural Geology of NW Scotland, JSG students and staff, Ullapool, Scotland, 13-15 May, 2023

Leader, Geothermal reservoir analog outcrops, JSG and Cornell students, Chazy, New York, October 2021

Leader, Traverse of the Tetons, JSG students and industry representatives, Jackson, Wyoming, September 2018 and 2019

Leader, Geology of Unconventional Gas: BEG/EM Cooperative Field Trip, Jackson, Wyoming, June 2010.

Leader, Polyphase Fracture History and Reservoir Analogs, Eriboll Formation: Fracture Research and Application Consortium, Field Research Meeting, Gairloch, Scotland, May 2007.

Co-Leader, Snake River Range Geology and Structural Diagenesis: Fracture Research and Application Consortium, Jackson Hole, Wyoming, October 2006.

Leader, Diagenesis and Fractures in Tight Gas Sandstone Analogs, NE Mexico: Fracture Research and Application Consortium, Galeana Mexico, June 2005.

Leader, Fractures in Frontier Formation: Fracture Research and Application Consortium, Kemmerer, Wyoming, June 2002.

Leader, Geology of Central Texas: Schlumberger, Austin, Texas, 2001.

Leader, Geology of Central Texas: BP Amoco, Austin, Texas, 1999.

Leader, Quantification of Fractures: North American Council on Geostatistics, Austin, Texas, 1999.

Leader, Evaluating natural fractures in carbonate reservoir development, field seminar: Amoco-Norway, Austin, Texas, June 1998.

Leader, Fractures in Central Texas: Amoco Production Company geophysics group, Austin, Texas, 1996.

Leader, Continental Margins Symposium, Geology of the Balcones Fault Zone, Central Texas: Austin, Texas, 1992.

Leader, Fractures in Frontier Formation: Wyoming Geological Association/American Association of Petroleum Geologists, Casper, Wyoming, 1992.

Leader, Mesozoic Thrusting, Synplutonic Deformation, and Miocene Overprinting, Harcuvar Complex: A Section through the Pre-Tertiary Crust of West-Central Arizona: Geological Society of America, Phoenix, Arizona, 1990.

Leader, Fractures and Subsidiary Faults Associated with Normal Faults of the Balcones Fault Zone: Austin Geological Society, Austin, Texas, 1990.

Leader, Mesozoic Thrust Faults, Tertiary Detachment Faults, and Associated Rocks, Fabrics, and Mineralization, Whipple-Buckskin-Harcuvar Area, Western Arizona and Southeastern California: Geological Society of America, Phoenix, Arizona, 1987.

Leader, Gas Research Institute Natural Gas Supply Project Meeting, Frontier Formation and Grand Teton National Park: Jackson, Wyoming, 1987 (with David Love).

Leader, Tectonic Evolution of the British Isles: Lehigh University, London and Edinburgh, United Kingdom, May 1986.

Leader, Structural Geology of New England: Lehigh University, Connecticut and Massachusetts, April 1986.

[Continuing Education-Short Courses \(Selected\)](#)

AAPG Fractured Reservoir School (1999-2004) See above.

Using microstructure observations to quantify natural fracture properties and improve reservoir simulations: EDM/DOE Fractures Project Workshop, Austin, Texas, July 1996

New methods to quantify natural fracture attributes: Geological Society of America Workshop, March 1996

Techniques of Comprehensive Evaluation and Completion of Tight Gas Sand Reservoirs: Gas Research Institute Forum / Workshop in Association with the Society of Petroleum Engineers Gas Technology Symposium, June 1989

Fractures in Sedimentary Rocks: Gas Research Institute Fracture Workshop, Bureau of Economic Geology, February 1987

Principals of Rock Mechanics: Geological Society of America Short Course, November 1986

Graduate Student Committee Supervision and Participation

In Progress

Supervisor, Ph.D. Dissertation Committee, Stephanie R. Forstner, The University of Texas at Austin, Department of Geological Sciences, passed qualifying exam 2021

Endowed Presidential Fellowship, 2023-2024

Member, Ph.D. Dissertation Committee, B.T. Lee, The University of Texas at Austin, Department of Petroleum and Geosystems Engineering, passed qualifying exam 2020

Member, Ph.D. Advisement committee, Sean Fulcher, Department of Earth & Planetary Sciences, Cornell University, 2023

Member, M.S. Thesis Committee, Syed Talha Tirmizi, Department of Petroleum and Geosystems Engineering, in progress 2023

Examiner and Member, Ph.D. Dissertation Committee, Felix Allgaier, Karlsruhe Institute of Technology, in progress 2023

Complete—International

External examiner, Ph.D., Ajoy Kumar Padhi, Indian Institute of Technology (Indian School of Mines) Dhanbad, 2023

Habilitation referee, Habilitation à diriger des recherches, Alain Zanella, Assistant Professor, Le Mans Université, 2021

Korreferent, Ph.D. Dissertation Committee, Ivy Becker, Karlsruhe Institute of Technology, 2018

Rapporteur, Ph.D. Jury, Christophe Matonti, Docteur d'Aix-Marseille Université, Aix-Marseille Université, 2015.

Co-Supervisor, M.S. thesis committee and Supervisor, visiting scholar, Romain Lacube, Aix-Marseille Université, March-November 2015.

Examineur, Ph.D. Jury, Arthur Lavenu, Docteur d'Aix-Marseille Université, Aix-Marseille Université, 2013.

Complete—US

Supervisor, Ph.D. Dissertation Committee, Rodrigo Correa, The University of Texas at Austin, Department of Geological Sciences. *Endowed Presidential Fellowship, 2022-2023*

Supervisor, Ph.D. Dissertation Committee, Qiqi Wang, The University of Texas at Austin, Department of Geological Sciences, 2023

Supervisor, M.S. Thesis Committee, Nina Hebel, The University of Texas at Austin, Jackson School of Geosciences, Energy & Earth Resources Program, 2022

Supervisor, M.S. Thesis Committee, Bethany Rysak, The University of Texas at Austin, Department of Geological Sciences, 2020

Supervisor, Ph.D. Dissertation Committee, Matthew J. Ramos, The University of Texas at Austin, Department of Geological Sciences, Statoil Fellow, 2018

Member, Ph.D. Dissertation Committee, Weiwei Wang, The University of Texas at Austin, Department of Petroleum and Geosystems Engineering, 2017

Supervisor, M.S. Thesis Committee, Elizabeth McKinnon, The University of Texas at Austin, Department of Geological Sciences, 2017

Supervisor, M.S. Thesis Committee, John Li, The University of Texas at Austin, Department of Geological Sciences, 2017

Co-Supervisor, M.S. Thesis Committee^x, Hal Hundley, The University of Texas at Austin, Department of Geological Sciences, 2017

Supervisor, M.S. Thesis Committee, Abdulaziz Almansour, The University of Texas at Austin, Energy and Earth Resources program, completed 2017. Energy & Earth Resources *Director's Award*, 2017.

Supervisor, M.S. Thesis Committee, Qiqi Wang, The University of Texas at Austin, Department of Geological Sciences, 2016

Supervisor, M.S. Thesis Committee, Lauren K. Copley, The University of Texas at Austin, Department of Geological Sciences, 2015

Member, M.S. Thesis Committee, Yaser Alzayer, The University of Texas at Austin, Department of Geological Sciences, 2013

Member, Ph.D. Dissertation Committee, Ji Li, The University of Texas at Austin, Department of Petroleum and Geosystems Engineering, 2013

Supervisor, Ph.D. Dissertation Committee, John N. Hooker, The University of Texas at Austin, Department of Geological Sciences, 2012

Co-Supervisor, M.S. Thesis Committee, Laura Pommer, The University of Texas at Austin, Department of Geological Sciences, 2012-2013

Member, M.S. Thesis Committee, Harris Alan (Rudy) Reynolds, The University of Texas at Austin, Department of Petroleum & Geosystems Engineering, 2012

Co-Supervisor, Ph.D. Dissertation Committee, Faustino Monroy, The University of Texas at Austin, Department of Geological Sciences, 2012

Member, Ph.D. Dissertation Committee, Gareth Cross, The University of Texas at Austin, Department of Geological Sciences, 2012.

Co-Supervisor, M.S. Thesis Committee, Celia Xu, The University of Texas at Austin, Department of Geological Sciences, 2012.

Supervisor, M.S. Thesis Committee, Luke Fidler, The University of Texas at Austin, Department of Geological Sciences, September 2011

Co-Supervisor, M.S. Committee, Autumn Kaylor, The University of Texas at Austin, Department of Geological Sciences, September 2011

Co-Supervisor, Ph.D. Dissertation Committee, Ouyang Xuecheng, The University of Texas at Austin, Department of Geological Sciences, suspended 2010.

Co-Supervisor, Ph.D. Dissertation Committee, Aysen Ozkan, The University of Texas at Austin, Department of Geological Sciences, 2010. *GDL Foundation Fellowship recipient*

Co-Supervisor, Undergraduate Honors Thesis, Frank Morgan, The University of Texas at Austin, Department of Geological Sciences, completed 2010

Member, Ph.D. Dissertation Committee, Don Slottke, The University of Texas at Austin, Department of Geological Sciences, 2009–2010.

Member, Ph.D. Dissertation Committee, Julia Schneider, The University of Texas at Austin, Department of Geological Sciences, during 2010.

Co-Supervisor, M.S. Thesis Committee, Alex Urquhart, The University of Texas at Austin, Department of Geological Sciences, completed September 2011

Supervisor, M.S. Thesis Committee, Juan Inigo, The University of Texas at Austin, Department of Geological Sciences, 2009

Supervisor, M.S. Thesis Committee, Magdalena Ellis, The University of Texas at Austin, Department of Geological Sciences, 2009

Supervisor, M.S. Thesis Committee, Peter Hargrove, The University of Texas at Austin, Department of Geological Sciences, completed 2010

Supervisor, M.S. Thesis Committee, Brandon Barber, The University of Texas at Austin, Department of Geological Sciences, 2010

Member, Ph.D. Dissertation Committee, Arash Dahi, The University of Texas at Austin, Department of Petroleum and Geosystems Engineering, 2009

Supervisor, M.S. Thesis Committee, Edgar Pinzon, Fracture pattern prediction using geomechanical models incorporating diagenesis with comparison to outcrop data (Cambrian Eriboll sandstone, northwestern Scotland) and core observations (Tertiary Mirador Formation sandstones, Llanos foothills Colombia), The University of Texas at Austin, Department of Geological Sciences, 158 p. 2007

Supervisor, M.S. Thesis Committee, Kira Diaz Tushman, Fracture tectonics, fracture porosity evolution and structural diagenesis, Cambrian Eriboll sandstones, Northwest Scotland, The University of Texas at Austin, Department of Geological Sciences, 363 p., 2006

Member, M.A. Thesis Committee, Natalia Kalitynska, Economic and engineering evaluation of hydraulic fracture completion practices in the Piceance Basin, CO, USA, The University of Texas at Austin, Department of Geological Sciences, Energy and Earth Resources Graduate Program, 2007

Member, Ph.D. Dissertation Committee, Younis Altobi, The University of Texas at Austin, Department of Geological Sciences, 2006

Member, Ph.D. Dissertation Committee, Namsu Park, Discrete element modeling of rock fracture behavior: fracture toughness and time-dependent fracture growth, The University of Texas at Austin, Department of Petroleum & Geosystems Engineering, 263 p., 2006

Supervisor, M.S. Thesis Committee, Meghan E. Ward, Opening history and porosity evolution of fractures in sandstone, Triassic to Jurassic La Boca Formation, Northeast Mexico, The University of Texas at Austin, Department of Geological Sciences, 313 p., 2006

Member, M.S. Thesis Committee, Hamid Adefashe, Determining the fracture mechanics properties of sedimentary rocks using double torsion testing, The University of Texas at Austin, Department of Petroleum & Geosystems Engineering, 94 p., 2006

Member, M.S. Thesis Committee, Tim Gibbons, The University of Texas at Austin, Department of Geological Sciences, 2006

Member, M.S. Thesis Committee, Matt Davis, The University of Texas at Austin, Department of Geological Sciences, 2005

Member, Ph.D. Dissertation Committee, Peggy Rijken, The University of Texas at Austin, Department of Petroleum & Geosystems Engineering, 2005

Member, M.S. Thesis Committee, John Hooker, Fault timing in the Sierra Madre Oriental, Northeastern Mexico, The University of Texas at Austin, Department of Geological Sciences, 169 p., 2004

Co-Supervisor, M.A. Thesis Committee, Chris Wilson, Predicting fracture degradation in the Piceance Basin, Colorado: Can a surrogate measurement guide the way to open fractures and highly productive wells? The University of Texas at Austin, Petroleum and Geosystems Engineering, EMR Program, 150 p., 2004

Member, Ph.D. Dissertation Committee, Myeong-Hwan Noh, The University of Texas at Austin, Austin, Texas, Department of Petroleum & Geosystems Engineering, 2004

Member, Ph.D. Dissertation Committee, Yuan Qiu, The University of Texas at Austin, Austin, Texas, Department of Petroleum and Geosystems Engineering, 2002

Member, Ph.D. Dissertation Committee, Orlando Ortega, Fracture size scaling and stratigraphic controls on fracture intensity, The University of Texas at Austin, Austin, Texas, Department of Geological Sciences, 426 p., 2002

Member, M.S. Thesis Committee, Javier G. Moros Otero, Relationship between fracture aperture and length in sedimentary rocks: The University of Texas at Austin, Department of Geological Sciences, 120 p., 1999

Member, Ph.D. Dissertation Committee, Stephen W. Grimes, The Grenville orogeny in West Texas: Structure, kinematics, metamorphism and depositional environment of the Carrizo Mountain Group: The University of Texas at Austin, Department of Geological Sciences, 1999

Member, M.S. Thesis Committee, Chris Zahm: The University of Texas at Austin, Department of Geological Sciences (Hydrology), 1998

Member, Ph.D. Dissertation Committee, Stefan S. Boettcher, Crustal shortening, extension, and unroofing in the Dome Rock Mountains, Arizona: The University of Texas at Austin, Department of Geological Sciences, 1996

Member, M.S. Thesis Committee, Rebecca C. Smyth-Boulton, Porosity and permeability controls in the Santana ash-flow tuff, Trans-Pecos Texas: The University of Texas at Austin, Austin, Texas, Department of Geological Sciences, 1995

Member, Ph.D. Dissertation Committee, Chris Laughton, Civil Engineering, The University of Texas at Austin, Austin, Texas, completed, 1994

Member, Ph.D. Dissertation Committee, Hwanjo Baek, Evaluation of fracture mechanics properties and microstructural observations of rock fractures: The University of Texas at Austin, Austin, Texas, Department of Civil Engineering, 1994

Member, M.S. Thesis Committee, Barbara A. Marin, Kinematic evolution of a ductile shear zone system, Granite Wash Mountains, West-Central Arizona: The University of Texas at Austin, Austin, Texas, Department of Geological Sciences, 1993

[Examining committee chair \(external\), Department of Geological Sciences](#)

Chair, Ph.D. Examining Committee, Neelarun Mukherjee, 2023

Chair, Ph.D. Examining Committee, Scarlett Hsia, 2020

Chair, Ph.D. Examining Committee, Catherine Ross, 2018

Chair, Ph.D. Examining Committee, Brooklyn Gose, 2017

Chair, Ph.D. Examining Committee, Kai Zhang, 2014

Chair, Ph.D. Examining Committee, Sarah Christian, 2012

Chair, Ph.D. Examining Committee, Kelly Hereid, 2009

Graduate Student Research Supervision (non-thesis)

Directed/supervised research, and supported numerous Graduate Research Assistants, Bureau of Economic Geology, 1986 – present.

Including: Leonel Gomez, Orlando Ortega, Eloise Doherty, Thomas Hoak, Aysen Ozkan, Astrid Makowitz, Pat Dickerson, Robert Buehring, Tim Diggs, Sabine Boardman, Mary Johns, Barbara Marin, Robert Reed, Karen Herrington, Karen Meador, Peter Hennings

Postdoctoral Fellows in SDI/FRAC program (various years)

Junpeng Wang, Xiang Shan, Vinyet Baques, Chris Landry, Estibalitz Ukar, Tobias Weisenberger, Andrés Fall, Stephen Becker, Julia F.W. Gale, Virginio Neumann.

External funded grants and contracts (selected)

Major programs, Principal Investigator (selected)

Tight Gas Sands project, Gas Research Institute, 1990-1994

Fracture Research and Application Consortium, The University of Texas at Austin, 1997-present

Reconstructing and predicting fracture pattern evolution, 2022-2025, Office of Basic Energy Sciences (Washington D.C., US), URL: <https://app.dimensions.ai/details/grant/grant.12968034>, GRANT_NUMBER: DE-SC0022968

Predicting fracture porosity evolution in sandstone, 2003-2019, Department of Energy, Office of Science (Washington, US), URL: <https://grants.uberresearch.com/100000015/DE-FG02-03ER15430/PREDICTING-FRACTURE-POROSITY-EVOLUTION-IN-SANDSTONE>, GRANT_NUMBER: DE-FG02-03ER15430

Information on external funds raised available upon request.

Laubach raises more than \$900,000+ annually in grants and contracts