Bradley D. Ritts School of Earth, Energy, and Environmental Sciences Stanford University, Stanford CA 94305-2115

(+1) 650-736-2716 office phone (+1) 415-361-1911 mobile phone work email: ritts@stanford.edu personal email: ritts@stanfordalumni.org

EDUCATION

Ph.D., 1998, Geological and Environmental Sciences, Stanford University

Dissertation: "Mesozoic Tectonics and Sedimentation, and Petroleum Systems of the Qaidam and Tarim Basins, NW China" Primary Advisor: Stephan Graham Other Committee Members: J. Michael Moldowan, W. Gary Ernst, Mike McWilliams

M.S., 1994, Earth and Planetary Sciences, Massachusetts Institute of Technology

Thesis: "Depositional Facies and Detrital Composition of the Paleoproterozoic Et-Then Group, NWT, Canada: Signature of Intracratonic Indentation Tectonics" *Advisor: John Grotzinger*

B.S. summa cum laude, 1993, Geology and Biology with high honors and high distinction, University of Rochester

Field camp: Indiana University Geological Field Station, Cardwell, MT, 1992

EXECUTIVE EDUCATION

Strategic Financial Skills

Cox School of Business, Southern Methodist University, Dallas, April 2012

Negotiation and Influence Program

National University of Singapore Business School, Singapore, July 2011

PROFESSIONAL APPOINTMENTS

Stanford University School of Earth, Energy and Environmental Sciences and Precourt Institute for Energy, Stanford, CA

Managing Director, Stanford Natural Gas Initiative

• Start-up and technical and administrative leadership of a new cross-campus, crossdisciplinary research initiative, including strategic direction, budgetary and financial authority, organizational capability, and development of industry partnerships

- More than 40 faculty research groups from five of seven school at Stanford participating
- 17 corporate affiliate members providing more than \$1.7MM direct funding annually

(8/15 - present)

Chevron Asia Pacific Exploration and Production Company, Singapore

Team Leader, Asia-Pacific New Ventures

- Start-up and leadership of new group to identify and evaluate new exploration opportunities in the Asia-Pacific region, with focus on frontiers and new basin entries
- Successful new basin entries in Cooper basin, Australia (2013), Bight basin, Australia (2014), and East Coast-Pegasus basins, New Zealand (2014) and numerous evaluations elsewhere in Asia-Pacific region
- Team operational budget \sim \$10MM with project capture commitments up to \$1B

Chevron Asia Pacific Exploration and Production Company, Singapore (09/10 - 11/12)

Exploration Advisor

- Management of \$800MM+ exploration budget and strategic plan in Asia-Pacific region
- Member of Chevron Corporation Global Exploration Leadership Team
- New ventures and business development in Asia-Pacific region •

Chevron Energy Technology Company, San Ramon, CA

Team Leader, Stratigraphic Services

- Managed team of 10 clastic and carbonate stratigraphy subject matter experts working on exploration and major capital projects globally
- Major project work throughout Eurasia (especially Black Sea and Caspian Sea region), Eastern Mediterranean, Brazil, Indonesia, and South Asia
- Team operational budget ~\$10MM

Chevron-Stanford Relationship Manager

• Coordinated relationship between Chevron and Stanford across all disciplines in both organizations (deployed university relationship budget of ~\$1MM annually)

Chevron Energy Technology Company, San Ramon, CA

Basin Analyst and Reservoir Stratigrapher

Technical work and technical leadership on exploration projects, primarily in Eurasia

Indiana University, Bloomington, IN

Robert R. Shrock Professor of Sedimentary Geology and Associate Professor (tenured), Department of Geological Sciences (08/05 - 08/07)

- Research focused on continental tectonics and sedimentation and interactions between tectonics and climate (Tibet, northern and northwest China)
- Teaching at undergraduate and graduate level
- Advisor for undergraduate, graduate (M.S. and Ph.D.) and post-doctoral research

Utah State University, Logan, UT

Assistant Professor, Department of Geology

- Research focused on continental tectonics and sedimentation (Tibet, northern and • northwest China, western U.S.) and petroleum geology (China, western U.S., Angola)
- Teaching at undergraduate and graduate level
- Advisor for undergraduate, graduate (M.S.) and post-doctoral research

(12/08 - 08/10)

(12/12 - 7/15)

(12/08 - 08/10)

(08/07 - 11/08)

(08/99 - 07/05)

Chevron Overseas Petroleum, Inc., San Ramon, CA

Earth Scientist, New Ventures Strategic Business Unit

(07/98 - 07/99)

• Technical work on exploration projects (captured acreage and new ventures) in China

PUBLICATIONS

- Zhuang, G., Zhang, Y., Hourigan, J., **Ritts, B.D**., Hren, M., Hou, M., Wu, M., and Kim, B., in review, Microbial, isotopic, and geochronologic constraints on Neogene paleotopography in the northern Tibetan Pleateau, Geology.
- Zhuang, G., Johnstone, S., Hourigan, J., **Ritts, B.D**., Robinson, A., and Sobel, E., in press, Partitioning of the crustal shortening in the northern Tibetan Plateau: constraints from thermochronology studies, Gondwana Research.
- **Ritts B.D.**, 2017, Can methane hydrates spark another natural gas revolution?, Natural Gas Brief n. 2, Stanford University.
- Archer, R., Robbana, E., Ritts, B.D., Moore Ali-Adeeb, J., Johnson, C., and Taylor, A., 2012, Reservoir simulation models of an Eocene lacustrine delta, Green River Formation, SW Uinta Basin, Utah: In: Sandstones in Lacustrine Depositional Settings, Y. Bartov and D. Nummedal, eds., AAPG Memoir, v. 95, p. 209-222.
- Moore Ali-Adeeb, J., Taylor, A., Johnson, C., **Ritts, B.D,** and Archer, R., 2012, Facies analysis reservoir characterization and lidar modeling of an Eocene lacustrine delta, Green River Formation, southwest Uinta Basin, Utah, In: Sandstones in Lacustrine Depositional Settings, Y. Bartov and D. Nummedal, eds., AAPG Memoir, v. 95, p. 183-208.
- Charreau, J., Kent-Corson, M.L., Barrier, L., Augier, R., Ritts, B.D., Chen, Y., France-Lannord, C., and Guilmette, C., 2012, A high-resolution stable isotopic record from the Junggar basin (NW China): Implications for the paleotopographic evolution of the Tianshan Mountains, Earth and Planetary Science Letters: v. 341-344., p. 158-169. DOI: 10.1016/j.epsl.2012.05.033.
- Graham, S.A., Cope, T., Johnson, C.L., and Ritts, B.D., 2012, Sedimentary basins of the late Mesozoic extensional domain of China and southeast Mongolia, In: Regional Geology and Tectonics: Phanerozoic Rift Systems and Sedimentary Basins, D. Roberts and A. Bally, eds., Elsevier, p. 443-461. DOI: 10.1016/B978-0-444-56356-9.00016-X.
- Johnson, C.L., and **Ritts, B.D.**, 2012, Plate Interior Poly-Phase Basins, In: Busby and Azor, eds., Recent Advances in Tectonics of Sedimentary Basins, Blackwell Publishing Ltd Ch. 28, p. 567-582.
- Zhuang, G., Hourigan, J., Koch, P.L., **Ritts, B.D**., Kent-Corson, M., 2011, Isotopic Constraints on Intensified Aridity in the Central Asia around 12 Ma and Implications, Earth and Planetary Science Letters, v. 312, p. 152-163.

- Zhuang, G., Hourigan, J.K., Ritts, B.D., Kent-Corson, M.L., 2011, Cenozoic Multiple-Phase Tectonic Evolution of the Northern Tibetan Plateau: Constraints from Sedimentary Records from Qaidam Basin, Hexi Corridor, and Subei Basin, Northwest China, American Journal of Science, v. 311, p. 116-152. DOI: 10.2475/02.2011.02.
- **Ritts, B.D.**, Berry, A.K., Johnson, C.J., Darby, B.J., and Davis, G.A., 2010, Characteristics and evolution of supradetachment basins in the Hohhot metamorphic core complex, Inner Mongolia, China: Basin Research, v. 22, p. 45-60, doi: 10.1111/j.1365-2117.2009.00433x.
- Kent-Corson, M.L., Mulch, A., Graham, S.A., Carroll, A., Ritts, B.D., and Chamberlain, P., 2010, Diachronous isotopic and sedimentary responses to topographic change as indicators of mid-Eocene hydrologic reorganization in the western United States: Basin Research, doi: 10.1111/j.1365-2117.2009.00456.x.
- Liu, S., Zhang, G., Ritts, B.D., Gao, M., and Zhang, H., 2009, Tracing exhumation of the Dabie Shan ultrahigh-pressure metamorphic complex using the sedimentary record in the Hefei basin, China: Geological Society of America Bulletin, v. 112, p. 198-218; doi: 10.1130/B26524.1
- Kent-Corson, M.L., Ritts, B.D., Zhuang, G., Bovet, P.M., Graham, S.A., Chamberlain, C.P., 2009. Stable isotopic constraints on the tectonic, topographic, and climatic evolution of the northern margin of the Tibetan Plateau. Earth and Planetary Science Letters: v. 282, p. 158-166.
- **Ritts, B.D.,** Weislogel, A., Graham, S.A, and Darby, B.J., 2009, Mesozoic Tectonics and Sedimentation of the Giant Polyphase Nonmarine Intraplate Ordos Basin, Western North China Block: International Geology Review, v. 51, p. 95-115. DOI: 10.1080/00206810802614523
- Bovet, PM., Ritts, B.D., Gehrels, G.G., Abbink, O.A., Darby, B.J., and Hourigan, J., 2009,
 Evidence of Miocene Crustal Shortening in the North Qilian Shan From Cenozoic
 Stratigraphy of the Western Hexi Corridor: American Journal of Science, v. 309, p. 290-329.
 DOI: 10.2475/00.4009.02
- **Ritts B.D.,** Yue, Y., Graham, S.A., Sobel, E.R., Abbink, O.A., and Stockli, D., 2008, From sea level to high elevation in 15 million years: Uplift history of the northern Tibetan Plateau margin in the Altun Shan: American Journal of Science, v. 308, p. 657-678.
- Darby, B.J. and **Ritts, B.D.**, 2007, Mesozoic structural architecture of the Lang Shan, North-Central China: Intraplate contraction, extension, and synorogenic sedimentation: Journal of Structural Geology, v. 29, p. 2006-2016
- Hanson, A.D., **Ritts, B.D.**, and Moldowan, J.M., 2007, Organic geochemistry and thermal maturity of oils and Upper Paleozoic and Mesozoic potential source rocks in the Ordos basin, north-central China: American Association of Petroleum Geologists Bulletin, v. 91, p. 1273-1293.

- Liu, S., Zhang, J., Hong, S., and Ritts, B.D., 2007, Early Mesozoic basin development and its response to thrusting in the Yanshan fold-and-thrust belt, China: International Geology Review, v. 49, p. 1025-1049.
- Rigby, J.K., Kessel, B.J., **Ritts, B.D.**, Friedman, S.J., 2006, A new Ordovician Chiastoclonellid sponge from Inner Mongolia, China: Journal of Paleontology, v. 80, p. 775-779.
- **Ritts, B.D**., Keele, D., Darby, B.J., and Liu, S., 2006, Ordos basin gas reservoir outcrop analogs: Permian braided fluvial sandstone of the Zhuozi Shan and Helan Shan, China: International Geology Review, v. 48, p. 573-584.
- Darby, B.J., **Ritts, B.D**., Yue, Y., and Meng, Q., 2005, Did the Altyn Tagh fault extend beyond the Tibetan Plateau?: Earth and Planetary Science Letters, v. 240, p. 425-435.
- Graham, S.A., Chamberlain, P., Yue, Y., **Ritts, B.D**., Hanson, A.D., Horton, T.W., Waldbauer, J.R., Poage, M.A., and Feng, X., 2005, Stable isotope records of Cenozoic climate and topography, Tibetan Plateau and Tarim basin: American Journal of Science, v. 305, p. 101-118.
- Cope, T., **Ritts, B.D**., Darby, B.J., Fildani, A., and Graham, S.A., 2005, Carboniferous-Permian sedimentation on the northern margin of North China: implications for regional tectonics and climate change: International Geology Review, v. 47, p. 270-296.
- Yue, Y., Graham, S.A., Ritts, B.D., and Wooden, J.L., 2005, Detrital Zircon Provenance Evidence for Large-Scale Extrusion along the Altyn Tagh Fault: Tectonophysics, v. 406, p. 156-178.
- Ritts, B.D., Yue, Y., and Graham, S.A., 2004, Oligocene-Miocene tectonics and sedimentation along the Altyn Tagh fault, northern Tibetan Plateau: Analysis of the Xorkol, Subei, and Aksay basins: Journal of Geology, v. 112, p. 207-230.
- Yue, Y., Ritts, B.D., Hanson, A.D., and Graham, S.A., 2004, Sedimentary Evidence against Large Strike-Slip Translation on the Northern Altyn Tagh Fault: Earth and Planetary Science Letters, v. 228, p. 311-323.
- **Ritts, B.D**., Hanson, A.D., Darby, B.J., Nanson, L., and Berry, A.K., 2004, Triassic Intraplate Extension in North China: Evidence from the Nonmarine NW Ordos Basin: Tectonophysics, v. 386, p. 177-202.
- Taylor, A.W. and **Ritts, B.D**., 2004, Sedimentology, Facies Architecture, and Reservoir Characterization of Lacustrine Rocks, Eocene Green River and Colton Formations, Uinta Basin, Utah: Journal of Petroleum Geology, v. 27, p. 3-26.
- Yue, Y., **Ritts, B.D.**, Graham, S., Wooden, J., Gehrels, G., and Zhang, Z., 2003, Slowing extrusion tectonics: Lowered estimate of post-Early Miocene long-term slip rate for the Altyn Tagh fault: Earth and Planetary Science Letters, v. 217, p. 111-122.

- Yang, Y., **Ritts, B.D**., Zhang, B., Xu, T., and Xi, P., 2003, Upper Triassic-Middle Jurassic strata and sedimentary record in northeast Qaidam basin, Northwest China: Journal of Petroleum Geology, v. 26, p. 429-449.
- Darby, B.J., and **Ritts, B.D.**, 2002, Mesozoic contractional deformation in the middle of the Asian tectonic collage: the enigmatic Western Ordos fold-thrust belt, China: Earth and Planetary Science Letters, v. 205, p. 13-24.
- **Ritts, B.D.,** Darby, B.J., and Cope, T., 2001, Early Jurassic extensional basin formation in the Daqing Shan segment of the Yinshan belt, northern North China Block, Inner Mongolia: Tectonophysics, v. 339, p. 235-253.
- Yue, Y., **Ritts, B.D**., and Graham, S., 2001, Initiation and long-term slip history of the Altyn Tagh fault: International Geology Review, v. 43, p. 1087-1093.
- **Ritts, B.D.,** and Biffi, U., 2001, Mesozoic Northeast Qaidam basin: response to contractional reactivation of Qilian Shan, and implications for extent of Mesozoic intracontinental deformation in central Asia. In: Paleozoic and Mesozoic Tectonics of Central Asia -- From Continent Assembly to Intracontinental Deformation; Hendrix, M. S., and Davis, G. A., eds., Geological Society of America Memoir 194, p. 293-316.
- Sobel, E.R., Arnaud, N., Jolivet, M., Ritts, B.D., and Brunel, M., 2001, Jurassic Exhumation history of the Altyn Tagh, NW China. In: Paleozoic and Mesozoic Tectonics of Central Asia -- From Continent Assembly to Intracontinental Deformation; Hendrix, M. S., and Davis, G. A., eds., Geological Society of America Memoir 194, p. 247-268.
- Hanson, A.D., **Ritts, B.D.,** Zinniker, D., Moldowan, J.M., and Biffi, U., 2001, Upper Oligocene lacustrine source rocks and petroleum systems of the northern Qaidam basin, northwest China: American Association of Petroleum Geologists Bulletin, v. 85, p. 601-619.
- **Ritts, B.D**. and Biffi, U., 2000, Magnitude of post–Middle Jurassic (Bajocian) displacement on the central Altyn Tagh fault system, northwest China: Geological Society of America Bulletin, v. 112, p. 61-74.
- **Ritts, B.D**., Hanson, A.D., Zinniker, D, and Moldowan, J.M., 1999, Lower-Middle Jurassic Nonmarine Source Rocks and Petroleum Systems of the Northern Qaidam Basin, Northwest China: American Association of Petroleum Geologists Bulletin, v. 83, p. 1980-2005.
- Lockley, M., **Ritts, B.D**., and Leonardi, G., 1999, Mammal Track Assemblages From the Early Tertiary of China, Peru, Europe and North America: Palaios, v. 14, p. 398-404.
- Ritts, B.D., 1998, Mesozoic Tectonics and Sedimentation, and Petroleum Systems of the Qaidam and Tarim Basins, NW China: Ph.D. Dissertation, Stanford University, Stanford, CA. 691 p.
- **Ritts, B. D.,** and Grotzinger, J.P., 1994, Depositional facies and detrital composition of the Paleoproterozoic Et-Then Group, NWT, Canada: sedimentary response to intracratonic indentation tectonics: Canadian Journal of Earth Sciences, v. 31, p. 1763-1778.

- **Ritts, B. D.,** 1994, Depositional facies and detrital composition of the Paleoproterozoic Et-Then Group, NWT, Canada: signature of intracratonic indentation tectonics: M.S. Thesis, Massachusetts Institute of Technology, Cambridge, Massachusetts. 64 p.
- **Ritts, B. D**., 1994, The sedimentology and provenance of the Et-Then Group as a record of deformation on the McDonald fault zone, East Arm, Great Slave Lake, Northwest Territories. In: Current Research 1994-C; Geological Survey of Canada, p. 39-48.

EXTERNAL GRANTS AND FINANCIAL SUPPORT OF RESEARCH

2015 – present <u>Stanford Natural Gas Initiative Industrial Affiliates Program</u>: Industry consortium funded on annual membership basis; \$975,000 in 2015, \$1,335,000 in 2016, \$1,751,000 in 2017; \$1.688,000 YTD in 2018

2007-2011 <u>National Science Foundation</u>: Collaborative Research: Cenozoic Tectonics and Surface Uplift in North-Central Tibet \$39,015 (Ritts PI/PD)

2006-2010 <u>National Science Foundation</u>: Collaborative Research: Did the Altyn Tagh Fault Continue Beyond the Northern Margin of Tibet? Implications for Strain Accommodation During Continent-Continent Collision \$223,166 (Ritts PI/PD; R. Coe, UCSC, co-PI)

2005-2009 <u>National Science Foundation</u>: Collaborative Research: Vertebrate Paleontology and Paleoenvironments of the Richest Endemic-Dominated Vertebrate Assemblage in the Cenozoic of Qaidam Basin, \$202,108 (X. Wang, LA Museum, PI/PD; Ritts co-PI).

2004-2008 <u>National Science Foundation</u>: CAREER: Giant Nonmarine Sedimentary Basins of China and Intracontinental Tectonics – an Integrated Research and Education Plan in Asia and Western North America \$548,188 (Ritts PI/PD)

2003-2004 <u>National Science Foundation</u>: International: Cretaceous Extensional Basins above the Louzidan Detachment, Inner Mongolia China – Reconnaissance and Project Planning \$8994 (Ritts PI/PD)

2003-2004 <u>National Science Foundation</u>: Collaborative Research: Initiation and Long Term Slip History of the Altyn Tagh Fault: A Tertiary Sedimentary Basins Piercing Point Study, REU Supplement \$5,265 (Ritts PI/PD)

2003-2006 <u>American Chemical Society, Petroleum Research Fund:</u> Mesozoic NW Ordos Basin: A Well-Preserved Example of the Giant Intracontinental Oil-Bearing Basins of China, \$50,000 (Ritts PI/PD)

2002-2004 <u>National Science Foundation</u>: Collaborative Research: Initiation and Long Term Slip History of the Altyn Tagh Fault: A Tertiary Sedimentary Basins Piercing Point Study, \$85,334 (Ritts PI/PD) 2002-2004 <u>State of Utah:</u> University-Community Research Initiative: New Techniques to Improve Petroleum Reservoir Characterization in the Uinta Basin, Utah: Methods to Maximize an Important Energy Resource and Economic Asset with Better Management, \$28,250 (Ritts PI/PD)

2001-2004 <u>Seismic Microtechnology</u>: Grant of KINGDOM Suite Geophysical Interpretation Software (\$569,940 value) (Ritts PI/PD)

2000-2003 <u>Landmark Graphics Corporation</u> Global University Grant: Landmark Software Suite for Geophysical and Geological Interpretation: Software Grant (\$620,004 value) (Ritts PI/PD)

2000-2002 <u>American Chemical Society, Petroleum Research Fund</u>: Facies architecture of lacustrine reservoirs in contractile basins: genetic models to improve exploration and development, \$25,000 (Ritts PI/PD)

2000-2002 <u>Chevron/Cabinda Gulf Oil Company</u>: Evaluation of Chela Formation in the Kambala-Livuite Area, Cabinda, Angola, and its influence on seismic attributes of the upper TOCA Formation, \$66,484 (Ritts PI/PD)

1999-2001 <u>Seismic Microtechnology</u>: Grant of KINGDOM Suite of Geophysical Interpretation Software (\$36,000 value) (Ritts PI/PD)

Externally-Funded participation in other research as Faculty Associate:

2006-2010 <u>National Science Foundation</u>: INDEPTH IV (International Deep Profiling of Tibet and the Himalaya).

B.D. Ritts and J. Hourigan (UC-Santa Cruz) were funded Faculty Associates in the Stanford University budget directed by PI/PD S. Klemperer and were responsible for companion geological studies near the northern end of the INDEPTH IV profile. The budget for geological studies by Ritts and Hourigan is \$60,000.

HONORS

- Chevron Leadership Forum (2015)
- Chevron Mentoring Excellence in Technology Program (2008)
- National Science Foundation CAREER Grant Recipient (2004-2008)
- Member of The Alliance of Distinguished and Titled Professors, Indiana University (2005-2007)
- University Award for Departmental Excellence in Teaching, Utah State University (2004)
- Wilford R. and Marjorie C. Gardner Fellow (Junior Faculty International Research Fellowship), Utah State University (2000, 2001, 2002, 2003)
- National Science Foundation Graduate Research Fellow (1993-1998)
- Best Student Paper Award, 1997 AAPG Annual Meeting
- Sigma Xi (elected 1993)
- Phi Beta Kappa (elected 1992)

UNIVERSITY COURSES TAUGHT

- Physical Geology (Utah State U.) 1999, 2001, 2002, 2003, 2004, 2005 (average course quality rating: 4.7/6.0; average instructor effectiveness rating: 4.8/6.0)**
- Advanced Physical Sedimentology (Utah State U.) 2000, 2002 (average course quality rating: 5.3/6.0; average instructor effectiveness rating: 5.5/6.0)**
- **Basin Analysis** (Utah State U.) 2000, 2001, 2003 (average course quality rating: 5.6/6.0; average instructor effectiveness rating: 5.6/6.0)**
- **Petroleum Geology and Exploration** (Utah State U.) 2001, 2005 (average course quality rating: 5.0/6.0; average instructor effectiveness rating: 5.5/6.0)**
- Sedimentation and Stratigraphy (Utah State U.) 2002 (course quality rating: 5.4/6.0; instructor effectiveness rating: 5.7/6.0)**
- Advanced Sandstone Petrology (Utah State U.) 2001 (course quality rating: 5.8/6.0; instructor effectiveness rating: 5.8/6.0)**
- Active Margins Field Seminar (Utah State U.) 2002, 2005 (average course quality rating: 5.1/6.0; average instructor effectiveness rating: 5.0/6.0)**
- Lacustrine Depositional Systems Seminar (Utah State U.) 2000 (course not rated)
- Field Geology (Utah State U.) 2000, 2002 (course not rated)
- **Tectonics of Asia** (Utah State U.) 2002, 2003 (average course quality rating: 6.0/6.0; average instructor effectiveness rating: 6.0/6.0)**
- Tectonics of Asia (Indiana U.) 2005 (course not rated)
- Basin Analysis and Hydrocarbons (Indiana U.) 2006, 2007 (course rating: 3.1/4.0; instructor rating: 3.1/4.0)^{##}
- Advanced Field Techniques in Sedimentary Geology (Indiana U.) 2006 (course rating: 3.5/4.0; instructor rating: 3.5/4.0)^{##}
- Field Geology in the Northern Rocky Mountains (Indiana U.) 2006 (course not rated)

Evolution of the Earth (Indiana U.) 2007

Directed Reading in Environment and Resources (Stanford U.) 2017

**USU ratings based on student evaluations: 6, excellent; 5, very good; 4, good; 3, fair; 2, poor; 1, very poor;

^{##}IU ratings based on student evaluations: students are asked whether course and instructor are "outstanding": 4, strongly agree; 3, agree; 2, undecided; 1, disagree; 0, strongly disagree

GRADUATE/POSTDOCTORAL SCHOLAR ADVISING

M.S. Advisees:

- Andrew Taylor 2000-2002 (now employed by Anadarko Petroleum)
 Thesis: "Sedimentology, Facies Architecture, and Reservoir Characterization of Lacustrine Rocks, Eocene Green River and Colton Formations, Uinta Basin, Utah"
- Alba Dos Santos 2000-2003 (now employed by Chevron) Thesis: "Stratigraphy, Reservoir Characteristics, and Seismic Attributes of the Chela Formation, offshore Cabinda, Angola"
- Adrian Berry 2001-2003 (now employed by Anadarko Petroleum) Thesis: "Structural Controls on Supradetachment Basin Evolution and Stratigraphy, Hohhot Detachment, Inner Mongolia, China"
- Lynde Nanson 2001-2003 (went to University of Michigan for M.S. in statistics) Thesis: "Sedimentology and Depositional Systems of Triassic Strata, NW Ordos Region, North-Central China"
- Ben Kessel 2003- 2005 (now employed by Anadarko Petroleum) Thesis: "Sequence stratigraphy and reservoir potential of Cambrian-Ordovician strata, Ordos basin, China"
- Scott Friedman 2003-2005 (now employed by Chesapeake Energy) Thesis: "Genetic stratigraphy of a polyphase extensional basin, Chifeng, Inner Mongolia, China"
- Aaron Peterson 2003-2005 (now employed by Sinclair Oil) Thesis: "Geochemical provenance of North American sandstones" Co-advised by John Shervais
- Paul Bovet 2004-2006 (now employed by Chevron) Thesis "Sedimentary constraints on shortening, surface uplift, and exhumation of the Qilian Shan, NE Tibetan Plateau China"
- Todd Engelder 2005-2007 (continued on to *Ph.D. at Univ. of Arizona, now employed by Chevron*) Thesis: "Numerical models of sediment transport and filling in rift basins" *Co-advised by Mark Person*

Ph.D. Advisees:

Guangsheng Zhuang 2006-2011 (now Professor at Louisiana State University) Thesis: "Structural Chronology and Paleoaltimetry of the Eastern Qaidam Basin and Southern Qilian Shan, NE Tibetan Plateau" Primary advisor at UCSC: Jeremy Hourigan.

Postdoctoral Scholars:

Dr. Mohammad Ahmad Farooqui 2001-2002 (now Professor at COMSATS Institute of Information Technology, Labore, Pakistan)

"Inorganic geochemistry of clastic rocks and its applications to interpret the depositional environment, provenance and petroleum reservoirs - A case study of Diz Formation, Makran, Pakistan"

Dr. Julien Charreau 2007-2008 (now Professor at University of Nancy, France) "Tectonics and stable isotope stratigraphy of Cenozoic strata, northern Xinjiang, China"

UNDERGRADUATE RESEARCH ADVISING

Dustin Keele 2002-2005 (continued on to graduate school at Utah State University, now employed by Chevron)

Thesis: "Stratigraphy of Permian Strata, NW Ordos Basin, China" Publication: Ritts, B.D., <u>Keele, D</u>., Darby, B.J., and Liu, S., 2006, Ordos basin gas reservoir outcrop analogs: Permian braided fluvial sandstone of the Zhuozi Shan and Helan Shan, China: International Geology Review, v. 48, p. 573-584.

Kevin Randall 2003-2005 (continued on to graduate school at Utah State University) Thesis: "Characteristics, geometry, and heterogeneity of paleokarst reservoirs, Ordos basin, China"

Autumn Kaylor 2005-2006 (continued on to graduate school at University of Texas, now employed by Chevron)

Research in eastern Ordos basin, China

Poppy Coulter 2005-2006 Research in eastern Ordos basin, China

William Simmons 2005-2007 (continued on to graduate school at Indiana University) Thesis: "Influence of Permian-Triassic tectonism on paleoclimate, NE Ordos basin, China"

PROFESSIONAL AFFILIATIONS

- American Geophysical Union
- Society of Petroleum Engineers
- American Association of Petroleum Geologists
- Southeast Asia Petroleum Exploration Society

PROFESSIONAL SERVICE

2012 - 2014	AAPG Technical Program Committee Chairman, 2014 Offshore Technology Conference, Asia, March 2014, Kuala Lumpur, Malaysia
2013	Session convener and co-chair, 2013 AGU Fall Meeting (New Frontiers in Asia Pacific Earth Sciences)
2010	Conference organizer and field trip leader, 2010 Himalaya-Karakoram- Tibet Workshop (25 th HKT), June 2010, San Francisco.
2006 - 2007	Vice Chairman, 2007 International Conference on Nonmarine Basin Systems: Depositional Processes and Products, Stratigraphy, and Petroleum Reservoir Exploration. May 2007, Beijing
2001 – 2007	AAPG International Regions Committee (formerly International Liaison Committee)
2000 - 2005	SEPM Rocky Mountain Section Scholarship Committee
2005	Session Chair, 2005 GSA Annual Meeting (Orogenic Plateaus from Top to Bottom, I and II)
2004	Utah Geological Association Governing Board Member and Program Chair
2004	National Science Foundation Tectonics Panel
2001 - 2003	2003 AAPG Annual Meeting Technical Program Committee and SEPM Poster Session Chairman
2003	Session Chair, 2003 AAPG Annual Meeting (Sedimentary, Thermal, and Structural Evolution of Extensional Basins I and II)
2003	Session Convener and Chair, 2003 AGU Fall Meeting (Role of Large Strike-Slip Faults in the Tectonics of the Tibetan Plateau)

INVITED PRESENTATIONS

- Climate costs and benefits of increasing natural gas use: methane vents, leakage, and combustion: CEDIGAZ Annual Meeting and Symposium, Paris, 7-8 June 2018.
- The role of natural gas in near future energy systems: 2017 Harvard Business School Energy Symposium: Harvard University, 21 October 2017
- Increasing energy access in the developing world: How can natural gas help alleviate energy poverty: 2017 Marcellus Shale Coalition Shale Insight Meeting, Pittsburgh, PA, 28 September 2017.

- Methanol as an energy carrier: opportunities enabled by abundant natural gas: Pan Pacific Clean Energy Forum, Xiamen, China, 13 February 2017.
- Slip history of the Altyn Tagh fault determined from sedimentary basin analysis: Stanford University, 13 May 2016.
- Hydrocarbons and the changing energy and environmental landscape: China Underground Coal Gasification Symposium, Xu Zhou, China, April 2016.
- Miocene change from plate-like extrusion to distributed shortening on the northern Tibetan Plateau: San Francisco State University, April 2015.
- Geoscience Careers in the Energy Industry: California State University East Bay, 31 January 2008.
- Supradetachment Basin Systems: Examples from the Hohhot Metamorphic Core Complex, Inner Mongolia: International Conference on Nonmarine Basin Systems, Beijing, 10 May 2007
- Miocene change from plate-like extrusion to distributed shortening on the northern Tibetan Plateau: Miami University, Oxford, OH, 16 April 2007
- Miocene change from plate-like to continuum deformation on the northern Tibetan Plateau: Indiana University-Purdue University Indianapolis, 12 April 2007
- Analysis of Slip History on Strike-Slip Faults Using Sedimentary Basins: Examples from the NE Tibetan Plateau: American Association of Petroleum Geologists Annual Meeting, Long Beach, April 2007
- Structural, Paleogeographic and Topographic Evolution of the Northern Tibetan Plateau: American Geophysical Union Fall Meeting, San Francisco, 13 December 2006
- Miocene transition from plate-like to continuous deformation in northern Tibet: China University of Geosciences, Beijing, 9 November 2006
- Miocene transition from plate-like to continuous deformation in northern Tibet: Chinese Academy of Sciences, Institute of Geology and Geophysics, 8 November 2006
- Mid-Tertiary transition from plate-like to continuous deformation in northeastern Tibet: Montana State University, 23 February 2006
- Mid-Tertiary transition from plate-like to continuous deformation in northeastern Tibet: University of California-Santa Cruz, 27 September 2005
- Initiation and long-term slip history of the Altyn Tagh fault and implications for strike-slip and contractile deformation throughout the Tibetan Plateau: Louisiana State University, April 2005
- Initiation and long-term slip history of the Altyn Tagh fault and implications for strike-slip and contractile deformation throughout the Tibetan Plateau: University of Utah, January 2005
- Initiation and long-term slip history of the Altyn Tagh fault and implications for strike-slip and contractile deformation throughout the Tibetan Plateau: Chinese Academy of Geological Sciences 6 August 2004
- Initiation and long-term slip history of the Altyn Tagh fault and implications for strike-slip and contractile deformation throughout the Tibetan Plateau: China University of Geosciences, Beijing 9 June 2004
- Genetic Stratigraphy and Petroleum Systems of Giant Mesozoic Nonmarine Basins of China: Indiana University 29 March 2004.
- Tectonic Evolution of the NE Tibetan Plateau: Evidence from Analysis of Tertiary Sedimentary Basins: Indiana University, 28 March 2004.
- Sedimentation in Response to Complex Continental Intraplate Deformation: Jurassic-Cretaceous NW Ordos Basin, North-Central China: American Association of Petroleum Geologists Annual Meeting, Salt Lake City, May 2003

- Reconnaissance of Paleozoic Reservoirs, Ordos Basin, China: 2003 Stanford-China Geosciences Industrial Affiliates Annual Review, Stanford University, 5 December 2003.
- Structural and Sedimentary Evolution of the NW Ordos Basin, a 2002 Update: 2002 Stanford-China Geosciences Industrial Affiliates Annual Review, Stanford University, 6 December 2002.
- Initiation and Long-Term Slip History of the Altyn Tagh Fault, Northwest China: China University of Geosciences, Beijing, 23 May 2002.
- Structural and Sedimentary Evolution of the NW Ordos Basin: China University of Geosciences, Beijing, 23 May 2002.
- Structural and Sedimentary Evolution of the NW Ordos Basin: 2001 Stanford-China Geosciences Industrial Affiliates Annual Review, Stanford University, 7 December 2001.
- Basin Analysis and Petroleum Systems of the Qaidam Basin, NW China: Oil on the Roof of the World: Utah Geological Association, Salt Lake City, 12 November 2001.
- Mesozoic-Cenozoic Sedimentary Basins and Slip History of the Altyn Tagh Fault, NW China: University of Kansas, 25 October 2001.
- Cretaceous Sedimentary Basins Related to the Hohhot Metamorphic Core Complex: Field Conference on Mesozoic Extension in Eastern Asia, Hohhot, Inner Mongolia, China, 5 July 2001.
- Mesozoic tectonics of the Qaidam basin and Altyn Tagh region, NW China: University of Nevada, Las Vegas, 7 February 2001.
- Early Jurassic extensional deformation and basin formation in the Yinshan belt, northern North China Block: Stanford-China Geosciences Industrial Affiliates Annual Review, Stanford University, 10 November 2000.
- Current Research Activities in the western Ordos Basin and Helan Shan: Stanford-China Geosciences Industrial Affiliates Annual Review, Stanford University, 10 November 2000.
- Mesozoic tectonics of the Qaidam basin and Altyn Tagh region, NW China: University of Southern California, 30 October 2000.
- Geochemical Characteristics of Crude Oils in the Qaidam Basin: China Northwest University, Xian, China, 19 June 2000.
- Geochemical Characteristics of Crude Oils in the Qaidam Basin: China University of Geosciences, Beijing, China, 7 June 2000.
- Sedimentary record of the Mesozoic tectonic amalgamation of Asia: evidence from the Qaidam, Tarim, and Ordos basins, China: Idaho State University, 22 March 2000.
- Mesozoic petroleum systems of central Asia: geology and molecular organic geochemistry of source rocks and oils in the Qaidam and southern Tarim basins, NW China: University of Montana, 3 March 2000.
- Tectonic history of the Altyn Tagh fault, NW China: evidence from sedimentary basin analysis: University of Montana, 2 March 2000.

CITIZENSHIP

United States