

CURRICULUM VITAE

JAMES L. KALBAS, Ph.D.

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Personal Information and Education

James L. Kalbas

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CURRENT POSITION

Director, Kansas Geological Survey
 State Geologist of Kansas
 Professor of Geology, University of Kansas
 Chief Technical Officer, HARVEST Hydrogen Inc.

EDUCATION

Ph.D. Purdue University, 2006, W. Lafayette, IN

Stratigraphic and mechanical expression of oblique terrain accretion and strain partitioning in central and southwestern Alaska; Dissertation: Geological and geodynamic investigations of Alaskan tectonics: Responses in the ancient and modern geologic records to oblique plate convergence

Chairs of Dissertation Committee: Dr. Kenneth D. Ridgeway and Dr. Andrew M. Freed

M.S., University of Tennessee, 2002, Knoxville, TN

Thesis: Geology of the southern Brushy Mountains, North Carolina Inner Piedmont

Chair of Thesis Committee: Dr. Robert D. Hatcher

B.S., Furman University, 2000, Greenville, SC

Thesis-1: Geologic map of the Slater 7.5-minute quadrangle, Greenville County, South Carolina:

Department of Natural Resources, Geological Survey

Thesis-2: Paleoclimatic changes in Southern Africa during the intensification of Northern

Hemisphere glaciation, ODP leg 175 Site 1085

EXECUTIVE EDUCATION

- **Thunderbird School of Global Management School, 2017, 'Advanced Management Program'**
- **University of North Carolina – Kenan-Flagler Business School, 2012, 'Enterprise Leadership Program'**
- **Advanced Negotiations: Governmental and Multi-party Organizations, 2018**

Research Interests

Stratigraphy of fine-grained rocks
 Sedimentary basin analysis and sequence stratigraphy
 Geologic mapping

Industry Focus and Experience

Subsurface appraisal and development
 Joint venture management and regulatory compliance
 Unconventional and offshore conventional resources

Project Management and change leadership

Summary of Experience and Expertise

- Seventeen years of industry leadership, research, and teaching experience

Project Management and Leadership

- Led development of hydrogen industries and economies in Kansas and western Missouri. Developed industry partnerships to co-found HARVEST Hydrogen Inc., a company focused on energy diversification throughout the Midwest region.
- Seven years of experience leading international offshore projects: ExxonMobil Guyana Development, Atlantic Operations, North Atlantic Captures & Divestments
- Technical committee chair for four industry joint ventures
- Industry point contact for state, provincial and federal regulatory agencies
- Directed the planning and execution of eleven offshore exploratory drilling projects involving several hundred geologists and engineers working domestically, internationally, and offshore
- Four years of experience as team lead for applied mudstone research at ExxonMobil's Upstream Research Company
- Led planning and execution of thirty-two production wells in the US mid-continent
- Integrated 'Connector Leader' management approach across four cross-functional teams

Highlights

- Led teams in the discovery of part of >10 billion oil-equivalent barrels while developing operations plan improvements that significantly reduced capital expenditures
- Chosen to co-lead the largest offshore exploratory drilling campaign in industry history
- Successfully negotiated agreements on seafloor environmental safety assessments and risk analysis protocols, bridging interests between government and third-party representatives
- Developed and implemented new 'gold-standard' controls methodologies for capital budget management; resulted in superlative external audit
- Competed successfully to attract capital investments for 2019-20 offshore exploratory and appraisal drilling programs in Newfoundland (2019-20) and Guyana (2020-2022)

Research and Teaching

- Seven years of post-doctoral research experience at ExxonMobil's Upstream Research Company focusing on the sedimentology and stratigraphy of fine-grained rocks
- Co-developed analytical approaches for quantifying unconventional resource distribution based on outcrop, core, and petrophysical datasets; applied to twelve US and international basins
- Integrated sedimentological and stratigraphic studies of Cretaceous marine strata in SW Alaska with detrital zircon geochronology to quantify the timing of orogenic uplift and exhumation
- Published 1:24,000-scale bedrock geologic maps of two quadrangles in the Carolina Inner Piedmont, coordinating between State and University research groups

Highlights

- Developed and operationalized analytical results that boosted productivity in the company's Bakken acreage while reducing capital investments

- Coordinated mapping expeditions in Central and SW Alaska with the US Geological Survey, Bureau of Land Management, and Purdue University researchers over the span of four years
- Visiting Assistant Professor, Department of Geology, Bucknell University, Lewisburg, PA
- Awarded 'Outstanding Instructor' for efforts developing and delivering a curriculum for post-graduate industry geologists and geophysicists

Leadership in Business

ExxonMobil Corporation (Houston, TX; Calgary, AB)

2006-Present

Guyana Subsurface Development

2020-Present

Manager responsible for integrated subsurface analysis, appraisal drilling strategy and execution, and field development planning for three of ExxonMobil's flagship deep-water projects in offshore Guyana. Overseeing the professional development of staff on four cross-functional teams.

- **Well Planning and Execution:** directed strategic planning and drilling operations for three continuously operating rig lines in the South Atlantic
- **Subsurface Analysis:** oversaw development planning (reservoir delineation, fluid flow modeling, and depletion planning) for three flagship projects; helped prepare "Yellowtail" project for 2021/22 multi-billion-dollar capital investment decisions
- **Regulatory Advocacy and Compliance:** subsurface lead for SE Stabroek fields with the Government of Guyana Ministry of Natural Resources and Geology and Mines Commission
- **International Joint Ventures:** led Stabroek block joint venture technical committee – responsible for aligning stakeholders on technical and strategic investment decisions
- **Capital Budget Management and Financial Controls:** managed exploration and appraisal investment decisions and financial reporting for nine fields
- **Culture and Diversity:** integrated the 'connector leader' management approach across teams to develop new talent through enriched mentorship and facilitate interdepartmental teamwork

Highlights: led a cross-functional organization of geologists and engineers in the 2020-22 execution of 10 offshore exploratory drilling programs; led teams in the discovery of several billion oil-equivalent barrels while optimizing operations plans for significant costs savings

Atlantic Canada Operations Manager

2017-2020

Co-developed the company's North Atlantic exploration strategy and oversaw its implementation. Oversaw the professional development of staff on two cross-functional teams.

- **Subsurface Analysis:** led teams in Alberta, Newfoundland, and Texas progressing the geological, engineering, and economic analysis of offshore oil prospects
- **Well Planning and Execution:** co-led multi-year drilling operations planning for two complex exploratory programs; operated one well in 2018-19
- **Regulatory Advocacy and Compliance:** facilitated multi-party negotiations with provincial regulatory and third-party stakeholders to establish standards for seafloor environmental hazards and risk assessments. Oversaw execution of seafloor surveys and co-led development of a comprehensive Environmental Impact Statement and Marine Environmental Risk Assessment
- **Capital Budget Management and Financial Controls:** competed successfully for internal and joint venture funding of multiple drilling projects; managed capital expenditures and financial controls for program for large CAPEX programs; developed and implemented new 'gold-standard' financial controls methodologies; independent third-party audit demonstrated superlative results
- **International Joint Ventures:** led joint ventures for 3 ExxonMobil-operated offshore exploration licenses and served as technical committee representative for 4 non-operated licenses

Highlights: Led a safe and effective North Atlantic exploration drilling campaign in 2019 involving several hundred geologists and engineers working in Alberta, Newfoundland, and aboard our remote

offshore vessels. Achieved safe operations despite unprecedented weather and ice conditions and satisfied all data collection and regulatory compliance objectives.

Atlantic Canada New Opportunities Supervisor

2015-2017

Led cross-functional organization of geoscientists, engineers, and financial analysts in the volumetric and economic assessment of frontier oil resources in the offshore North Atlantic.

- **Subsurface Analysis:** led the integration of geological, engineering, and economic assessments to form the basis of a winning investment and licence bid strategy
- **International Joint Ventures:** oversaw the alignment of joint venture technical interpretations and participated in investment strategy development for license bid rounds; organized external stakeholders to fund a successful multi-million-dollar offshore 3D seismic campaign

Highlights: subsurface and economic analyses and investment strategies enabled the capture of three offshore exploration licenses (1.7 million acres) and development of a large 3D seismic dataset at reduced net cost

Williston Basin Unconventional Resources Operations and Research Integration Lead

2013-2015

Integrated findings from three research projects into investment, development planning, and completions strategies for the Williston Basin (Bakken and Three Forks resources), North Dakota. Led production planning and drilling operations execution for two continuously operating rig lines.

- **Application of Research Findings:** integrated reservoir properties analysis, induced fracture analysis, and data analytics findings into development strategies. Originated statistical analyses to develop procedural changes that maximized production rates in long-reach horizontal wells while reducing CAPEX.
- **Regulatory Advocacy and Compliance:** developed permit applications and advocacy statements for docket review with the North Dakota Industrial Commission; testified as expert witness in regulatory permitting hearings
- **Well Planning and Execution:** led planning and drilling operations for 32 long-reach horizontal Bakken and Three Forks wells
- **Team Development:** facilitated improved team dynamic between on-site and office personnel, and worked with field operators to develop updated operations protocols

Unconventional Resources Research Team Lead

2012-2013

Led a cross-functional geoscience and engineering team quantifying geologic, induced fracture, and completions controls on unconventional oil and gas production rates

- **Research:** developed advanced petrophysics techniques and conducted chemical tracer, microseismic, and fracture modeling studies to delineate producing intervals in unconventional fields. Combined empirical results into nonlinear multivariate statistical models to quantify controls on production trends in unconventional gas oil plays.

Highlights: study results were applied to affiliate development plans and resulted in improved well performance with simultaneous reductions in capital expenditures

Research Projects and Initiatives

Conducted research on the sedimentology and stratigraphy of fine-grained rocks in ExxonMobil's Upstream Research Company from 2009 to 2015. Developed analytical approaches for quantitative unconventional resources assessments and applied in twelve US and international basins. Published new methodologies in siliciclastic sequence stratigraphy while working as an internal business unit consultant.

Prior to work in industry, field and laboratory investigations centered on (1) mapping the Cretaceous stratigraphy of central and southwestern Alaska; (2) modeling fault mechanics from records of modern seismicity; (3) mineral resources surveys coordinated with the US Geologic Survey and Bureau of Land Management; (4) 1:24,000-scale quadrangle geologic mapping of the Carolina Inner Piedmont belt; and (4) International Ocean Drilling Program paleoclimatology studies.

1. Multivariate geostatistical model of completions effectiveness in the Bakken Formation, Williston Basin, North Dakota. Integrated geosteering and petrophysical datasets from horizontal wells in the Bakken formation to quantify controls on well productivity. Final report submitted 2014.
2. Distribution of producing facies and controls on oil production rates in the Three Forks Formation, Williston Basin, North Dakota. Multi-year applied research program in partnership with affiliate production company. Conclusions informed investment strategies and production pilot well plans. Reports submitted in 2013 and 2014.
3. Quantification of sedimentological properties, stratigraphy, and resource potential of the Middle and Upper Devonian carbonate and mudstone successions of the Mackenzie Mountains, Northwest Territories, Canada. Field research team quantified the distribution and sedimentological properties of the Canol Formation. Final report submitted in 2013.
4. Characterization of the sequence stratigraphy of the Toarcian 'Jet Rock' and Cleveland Ironstone Formations, Whitby, England. Developed meter-scale measurements of condensed sections for comparison with marine successions from the Lower Saxony basin and for use in field schools.
5. Quantitative assessment of unconventional oil reservoirs of the [Arabian basin]. Core and log-based analysis in partnership with Qatar Petroleum. Restricted distribution report filed, 2013.
6. The distal expression of shoreline progradation of the Blackhawk Formation, Lower Gray Canyon, UT. Mapped and measured Mancos Shale successions and identified sequence stratigraphic correlation tie points with classic outcrops of the Blackhawk Formation. Field school guidebook published internally, 2013.
7. Ancient deltaic incursions into the Luman tongue member of the Eocene Green River Formation near Rock Springs, WY. Multi-year field campaign to map and measure shoreline and deltaic successions of the Green River formation, WY and CO. Final report submitted in 2012.
8. Resource potential and stratigraphic framework of source-associated carbonate-rich mudstones of the Niobrara Formation, Colorado, Kansas, and Utah. Originated a genetic

- framework for the Niobrara Formation based on petrophysical analyses and mapped the distribution of resources across a multi-state play area. Final report submitted in 2011.
9. Sequence stratigraphy and resource delineation of the Toarcian Posidonia Formation, Lower Saxony Basin, Germany. Developed core-based sedimentological and stratigraphic interpretations for the Posidonia Formation; identified and characterized target reservoir zones and correlated throughout the region. Final report submitted in 2011.
 10. Sequence stratigraphy and resource delineation of the Early Cretaceous Wealden Formation, Lower Saxony Basin, Germany. Described sedimentology and stratigraphy of >1,000m of core and integrated analyses with outcrop, petrophysical, and laboratory datasets to delineate the volume and distribution of lacustrine organic-rich mudstones throughout the Lower Saxony basin. Final report submitted in 2011.
 11. Model-based prediction of Marcellus Formation productivity based on play-scale geological variability. Blind study to develop and test model-based technologies for predicting unconventional gas well productivity. Report submitted in 2011.
 12. Revised resource assessment for the Dakota Formation across the greater LaBarge field, WY, based on sequence-stratigraphic analysis. Analyzed log and core from 109 penetrations of the Dakota Formation; revised stratigraphic models and volumetric assessments; identified candidate wells for recompletions. Final report submitted in 2009.
 13. 'Sevier Orogenic Systems Analysis' project (in collaboration with the University of Arizona): participated in planning, sampling, and analysis strategy for detrital zircon geochronology studies of the Mesa Verde Group throughout Utah.
 14. U.S. Onshore New Opportunity Identification Tight Oil Task Force – served on research team evaluating 120 unconventional oil and gas resources in the lower 48 United States.
 15. Mineral Investigations in the Aniak mining district, southwestern Alaska; Alaska Minerals Surveys – BLM, BLM-Alaska Open File Report 100, 2005.
 16. Geologic mapping and helicopter-based reconnaissance of the western Alaska Range and Kuskokwim Mountains, central and southwestern Alaska, 2003-2006.
 17. Geologic map of the Kings Creek 1:24,000-scale quadrangle, Inner Piedmont Belt, North Carolina. Funding from EdMap program, 200-2002.
 18. Geologic map of the Slater 1:24,000-scale quadrangle, Inner Piedmont Belt, South Carolina. Funding through S.C. Department of Natural Resources Geological Survey, 1999-2005.
 19. Paleoclimatic changes in Southern Africa during the intensification of northern hemisphere glaciation - evidence from ODP Leg 175 Site 1085. Analyzed the geochemistry of Pliocene cores from offshore Namibia to quantify marine organic productivity rate changes during a period of climate change. Findings published in 1999-2002.

Teaching

- 2009-19** 'Applied Methods in Sequence Stratigraphy'. Developed and delivered short courses for senior undergraduate and graduate students at Purdue University, University of Iowa, Louisiana State University
- 2009-12** Course Coordinator and instructor - 'Concepts in Structure and Stratigraphy'. Post-graduate school examining the analysis of shallow- and deep-water siliciclastic and carbonate depositional systems within extensional and contractional basin settings. Earned 'Outstanding Instructor' awards from 2010-2012.
- 2013-15** Course developer and instructor - 'Unconventional Resources'. Post-graduate-level school examining the stratigraphy of fine-grained marine and lacustrine successions along with exploration and production strategies.
- 2009-13** Instructor - 'Seismic Stratigraphy'. Course teaching seismic interpretation strategies and methodologies.
- 2005** Visiting Assistant Professor, Department of Geology, Bucknell University, Lewisburg, PA. Developed and delivered courses and labs in 'Physical Geology' and 'Environmental Geology' earning 'outstanding' student feedback and peer assessments
- 2004** Funded and instructed an undergraduate student in field mapping techniques in Alaska; work included geologic mapping, measurement of stratigraphic sections, and airborne reconnaissance mapping; funding through the 'Furman Advantage' student research program.
- 2001** Carolina Geological Society, fieldtrip leader, Brushy Mountains, NC. Led society members on a multi-day field trip through Inner Piedmont, North Carolina, presenting new observations from quadrangle mapping; published guidebook.
- 2000** Field Instructor, Indiana University Geologic Field Camp (G-429). Assistant Instructor for intensive field mapping school near Cardwell, MT.
- 1997-98** Developer and Instructor, 'Operation Chemistry' teacher training program, Hillsborough County Schools, FL. Developed and taught curriculum for multi-week summer symposium on introductory physical science, inorganic chemistry, and teaching strategies for secondary science teachers.

Publications - Geologic Maps

- Kalbas, J.L., and Ridgway, K.D., (2006) Geologic map of part of the McGrath A2 quadrangle, 1:63,360-scale. In: Kalbas, J.L., *Geological and geodynamic investigation of Alaskan tectonics: Responses in the ancient and modern geologic records to oblique plate convergence*. Ph.D. Dissertation, Purdue University. 495 p.
- Garihan, J.M., and Kalbas, J.L., (2005) Geologic map of the Slater 7.5-minute quadrangle, Greenville, South Carolina. *South Carolina Department of Natural Resources Geological Quadrangle Map GQM-34*, 1:24,000 scale.

- Kalbas, J.L., (2002) Geologic map of the Kings Creek 7.5-minute quadrangle, Brushy Mountains, North Carolina. *North Carolina Geological Survey Open File Report*, 1:24,000 scale.
- Kalbas, J.L., Bream, B.R., and Bier, S.E., (2002) Geologic map of the Brushy and South Mountains, eastern and western Inner Piedmont, North Carolina; Plate 1. In: Inner Piedmont geology in the South Mountains-Blue Ridge Foothills and the southwestern Brushy Mountains, central-western North Carolina (Ed. by R.D. Hatcher, Jr., and B.R. Bream), *Carolina Geological Society Guidebook*, North Carolina Geological Survey, 1:100,000 scale.
- Garihan, J.M., and Kalbas, J.L., (2000) Geologic map of the Slater 7.5-minute quadrangle, Greenville County, South Carolina: *Department of Natural Resources, Geological Survey, Open file report 129*, 1:24,000 scale.

Publications - Papers

- Flaum, J.A., and Kalbas, J.L., (2022) Facies identification through lithologic and geochemical observation of the Oceanic Anoxic Event 2 Interval in the Cretaceous Western Interior Seaway – Examples from the Rebecca K. Bounds core. In, *The Cenomanian-Turonian Stratigraphic Interval Across the Americas: Argentina to Alaska*, Proceedings of the 38th Annual GCSSEPM Foundation Perkins-Rosen Research Conference and Core Workshop, 65-72.
- Kalbas, J.L., Neal, J.E., and Abreu, V., (2010) The time-space expression of depositional sequences and systems tracts. Chapter 11 in, *Sequence Stratigraphy of Siliciclastic Systems – The ExxonMobil Methodology* (Ed. by V. Abreu, J.E., Neal, K.M. Bohacs, and J.L. Kalbas), SEPM Concepts in Sedimentology and Paleontology, #9.
- Neal, J.E., Abreu, V., and Kalbas, J.L., (2010) Seismic stratigraphy of the West Siberia basin, Beaufort Sea shelf margin. Chapter 5 in, *Sequence Stratigraphy of Siliciclastic Systems – The ExxonMobil Methodology* (Ed. by V. Abreu, J.E., Neal, K.M. Bohacs, and J.L. Kalbas), SEPM Concepts in Sedimentology and Paleontology, #9.
- Ramsayer, G.R., Schroeder, F.W., Neal, J.E., Abreu, V., and Kalbas, J.L., (2010) Seismic facies analysis of a prograding deltaic succession, Cretaceous Woodbine Formation, east Texas. Chapter 3 in, *Sequence Stratigraphy of Siliciclastic Systems – The ExxonMobil Methodology* (Ed. by V. Abreu, J.E., Neal, K.M. Bohacs, and J.L. Kalbas), SEPM Concepts in Sedimentology and Paleontology, #9.
- Campion, V.D., Van Wagoner, J.C., Mitchum, R.M., and Kalbas, J.L., (2010) Parasequence associations in a wave-dominated shoreline. Chapter 2 in, *Sequence Stratigraphy of Siliciclastic Systems – The ExxonMobil Methodology* (Ed. by V. Abreu, J.E., Neal, K.M. Bohacs, and J.L. Kalbas), SEPM Concepts in Sedimentology and Paleontology.
- Kalbas, J.L., and Ridgeway, K.D., (2006) *Geological and geodynamic investigation of Alaskan tectonics: Responses in the ancient and modern geologic records to oblique plate convergence*. Ph.D. Dissertation, Purdue University. 495 p.
- Kalbas, J.L., Freed, A.M., Ridgeway, K.D., and Flesch, L.M., (2008) Contemporary fault mechanics in Southern Alaska. In: *Active Tectonics and Seismic Potential of Alaska* (Ed. by J. Freymueller, P. Haeussler, R.L. Wesson, and G. Ekström), AGU Monograph Series, 179, 321-336.
- Kalbas, J.L., Ridgeway, K.D., and Gehrels, G.E., (2007) Stratigraphy, depositional systems, and provenance of the Lower Cretaceous Kahiltna assemblage in the western Alaska Range: Basin development in response to oblique collision. In: *Tectonic Growth of a Collisional Continental*

- Margin: Crustal Evolution of Southern Alaska* (Ed. by K.D. Ridgway, J.M. Trop, M. O'Neil, and J. Glen), Geological Society of America Special Paper 106, 307-343.
- Gulick, S.P.S., Willems, B.A., Freymueller, J.T., Powell, R.D., Jaeger, J.M., Kalbas, J.L., Jaeger, J.M., Pavlis, T.I., Lowe, L.A., Mayer, L.A., and Gardner, J.V., (2006) Significant Tectonic and Climatic Events for the Yakutat Block Collision, Gulf of Alaska: Pleistocene Glacial Intensification in the St. Elias Mountains and the Relationship Between the Fairweather and Transition Faults; Geological Society of America: Backbone of the Americas. 578.
- Christensen, B.A., Kalbas, J.L., Maslin, M., and Murray, R.W., (2002) Paleoclimatic changes in Southern Africa during the intensification of northern hemisphere glaciation; evidence from ODP Leg 175 Site 1085. *Marine Geology*, 180, 117-131.
- Murray, R.W., Christensen, B.A., Kalbas, J.L., and Kryc, K.A., (2002) Pliocene export production and terrigenous provenance of the southern Cape Basin, Southwest African margin. *Marine Geology*, 180, 133-150.
- Merschat, A.J., and Kalbas, J.L., (2002), Geology of the southern Brushy Mountains, North Carolina Inner Piedmont: A summary and synthesis of recent studies. In: Inner Piedmont tectonics focused mostly on detailed studies in the South Mountains and the southern Brushy Mountains, North Carolina (Ed. by R.D. Hatcher, Jr., and B.R. Bream), *Carolina Geological Society Guidebook*, North Carolina Geological Survey, 101-126.
- Clendenin, C.W., Howard, C.S., Niewendorp, C.A., Garihan, J.M., Ranson, W.A., Blackwell, S.S., Hart, M.R., Kalbas, J.L., Maclean, J.S., Pederson, H.F., Roberts, M.D., Shaver, L.A., and Boland, I.B., (2001) Notes on a brittle-fault kinematic indicator identification on Granny Apple Farm, Laurens County, South Carolina, *South Carolina Geology*, 42, 19-27.

Invited Lectures

- 2022** 'Kansas Geological Survey – Vision'; Geology and Well Technology 27th Annual Seminar/Tech Fair.
- 2022** 'Kansas Geological Survey – Research Programs and Strategic Initiatives'; Fort Hayes State University workshop and presentation.
- 2022** 'Hydrogen Production and Use Cases, Hydrogen Hub Initiative, and Hydrogen Opportunities for Kansas'; Kansas Renewable Energy Conference.
- 2020** 'Geologic concepts for Development Planning Engineers', Global Projects Division, ExxonMobil. Originated lecture series on subsurface resource delineation methodologies for engineers.
- 2016** 'The impact of facies controls on horizontal well productivity in the Bakken Formation: a case for an improved geosteering and completions strategy', XTO Energy, Ft. Worth, TX.
- 2014-15** 'An outlook for global energy supply 2014-2046', 2015 Ft. Worth Geological Society luncheon keynote address; 2014 University of Iowa lecture.
- 2013** Kalbas, J.L., Macquaker, J.H., Heins, W.H., Rudnicki, M.D., and Bohacs, K.M., Understanding the implications of stratigraphic variation for tight liquid producibility – Examples from source-associated carbonates; 2013 CSPG Gussow Conference, Banff, Canada.
- 2005** 'Sedimentary basin development along oblique collisional margins', Bucknell University

- 2004** 'Stratigraphic architecture of a transect from submarine-fan to nearshore marine depositional systems, southwestern Alaska', ExxonMobil Upstream Research Company
- 2004** 'Mesozoic basin development and depositional systems along a zone of oblique convergence, southwestern Alaska', ExxonMobil Exploration Company
- 2004** 'Sedimentary basin development in collisional tectonic settings - examples from Mesozoic southwestern Alaska', Georgia State University
- 2004** 'Sedimentary basin development along oblique collisional margins - examples from Mesozoic southwestern Alaska', Furman University
- 1997** 'An overview of Marine Geology research at Furman University', Furman University Alumni Association

Consulting

- 2005** Trinidadian National Oil Company & ExxonMobil Exploration: Sand distribution and hydrocarbon systems in oblique collisional settings
- 2005** ExxonMobil Corporation, New Business Opportunities: Hydrocarbon play potential, SW Alaska and Bering Sea
- 1997** CF Industries Plant City Phosphate Complex, Plant City, FL,: Rapid-extraction analysis of P₂O₅ in synthetic fertilizers.

Awards and Leadership

- 2014 Awarded level of 'Advanced Expert' in Unconventional Resources development
- 2012 Awarded level of 'Advanced Expert' in Sequence Stratigraphy
- 2010-12 Awarded 'Outstanding Instructor' based on student and peer nominations
- 2011 Business Impact Award, Upstream Research Company. Unconventional resources delineation and project integration efforts working with international business units
- 2011 Division Safety Award nominee for efforts ensuring safe field research and schools
- 2002-06 Frederick N. Andrews Doctoral Fellow, Purdue University
- 2005 Student advisor for graduate recruiting, Earth & Atmos. Sciences, Purdue University
- 2004 Linda Horn Memorial Award, Purdue University
- 2003 Michael C. Gardner Memorial Award, Purdue University
- 2002 George D. Swingle Memorial Award, University of Tennessee (excellence and the potential for an outstanding professional career in field-oriented research in geology)
- 2000 Wallace E. Fallaw Memorial Award for outstanding senior geology major, Furman University
- 2000 Associate Instructor, Indiana University Geologic Field Camp (G429)
- 1999 Furman Advantage Research Fellow
- 1998 U.S. Dept. of Defense Commendation for Outstanding Academic Achievement in the Arts and Sciences
- 1996 Eagle Scout, Boy Scouts of America

Expeditions

- 2010-13 **Research, ExxonMobil**; NW Territories, Qatar, NW Germany, Wyoming, Colorado, Utah, and England
- 2006 **Kuskokwim Mountains, Alaska**; Expedition team member, USGS minerals resource survey
- 2004 **Northern Kuskokwim Mountains, Alaska** - stratigraphic analysis, geologic mapping, airborne reconnaissance mapping, and mineral resources surveys.
- 2003 **Southwestern Alaska Range and Northern Kuskokwim Mountains, Alaska** - stratigraphic analysis, high-resolution geologic mapping, and airborne reconnaissance mapping.
- 2002 **Earthquake Response Team** - winter expedition to measure earthquake damage and install permanent GPS monitoring stations throughout south-central Alaska following the Denali M_w-7.9 seismic event
- 2000-02 **Southern Appalachian Mountains, North Carolina**, geologic mapping of the Kings Creek Quadrangle
- 1999 **Southern Appalachian Mountains, South Carolina**, geologic mapping of the Slater Quadrangle

Society Participation and Service

Society for Sedimentary Geology - editor, Concepts in Sedimentology and Paleontology #9

American Geophysical Union

Geological Society of America

American Association of Petroleum Geologists

AAPG Memoir assistant editor 2013-14

International Association of Sedimentologists

National Association of Geoscience Teachers

Alaska Geological Society

Carolina Geological Society