

CATHY J. BUSBY- ABBREVIATED CV

Publications posted at:

www.geol.ucsb.edu/faculty/busby

PERSONAL

Three daughters, born 1986 and 1989

PROFESSIONAL PREPARATION:

University of California at Berkeley, Geological Sciences, B.S. 1977

Princeton University, Geological Sciences, Ph.D., 1983

APPOINTMENTS:

Full Professor, UC Santa Barbara, 1993-present (Level 6, 2010).

Judd H. and Cynthia S. Oualline Centennial Lectureship in Petroleum

Geology, Jackson School of Geoscience, University of Texas at Austin, 2010-2011.

U.S. Geological Survey, summer 1997, 1998.

Associate Professor, UCSB, 1988-1993.

Assistant Professor, UCSB, 1982-1988.

Research Associate, Smithsonian Institution, 1980-1989.

Research Assistant, Geochemistry, Caltech, 1981-1982.

Research Assistant, Geology, Princeton University, 1978-1982.

Lab Assistant, K-Ar Laboratory, UC Berkeley, 1976-1977.

2010 – 2013 HIGHLIGHTS:

Co-Chief Scientist Scientist IODP Leg 350 (with Yoshi Tamura), Izu-Bonin rear arc, March 30 – May 30 2014.

Guest Editor, Special Issue of Geosphere, Origin of the Sierra Nevada and Walker Lane (with K. Putirka), in progress (26 published so far).

Editorial Board, International Geology Review, July 1, 2013.

Convenor, Penrose Conference “Origin and Uplift of the Sierra Nevada” (with K. Putirka), August 2010.

Textbook published: Wiley-Blackwell: Recent Advances in Tectonics of Sedimentary Basins (with Antonio Azor), 2012.

National Geographic “80’s Greatest Tragedies” episode, discussing volcanic eruptions (including Mount St. Helens): <http://natgeotv.com/uk/80s-greatest>

Geological Society of America MGPV (Mineralogy Geochemistry Petrology Volcanology) Division Vice Chair, Chair and Past Chair (2009-2012); Committee on Penrose Conferences and Field Forums, 2010-present.

Invited talks: GSA Tectonic Crossroads (Ankara, Turkey), Texas Bureau of Economic Geology, University of Texas Institute of Geophysics, Jackson School Geology Department, Baylor University, Texas Christian University, University of Houston, University of Barcelona, University of California at Los Angeles, Cal Tech, CSU Bakersfield, Scripps Institution of Oceanography.

Advisory board member, California Geological Survey.

Pardee Keynote Speaker honoring Arthur Holmes: GSA, Fall 2011: Growth of Continents at Extensional Arcs: A View from the Upper Crust.

Guest lecturer in several UT Austin courses and **Field trip leader** for Jackson School graduate students, faculty and research scientists: Walker Lane Rift, Reno to Las Vegas.

Short course “Interpretation of Volcanic Arc Lithofacies”, Chilean Geological Survey, Santiago, March 27 – April 1, 2011.

TEACHING

Summer Field Camp (Poleta folds, Long Valley, and Sierra Nevada), Volcanic Stratigraphy and Structure, Geological Catastrophes, Tectonics of Sedimentary Basins, Sedimentology and Stratigraphy, Geology of Convergent Margins and Continental Rifts, Cordilleran Tectonics, Submarine Volcanism, Turbidite Sedimentology, Sequence Stratigraphy, California Geology, Physical Volcanology.

SHORT COURSES:

Tectonics of Sedimentary Basins (with R.V. Ingersoll): A.A.P.G.-S.E.P.M. Annual Meeting, 1996; I. A. S. International Congress, Spain, 1998; A.A.P.G.-S.E.P.M. Annual Meeting, 1998; Second Latinamerican Sedimentological Congress, Argentina, 2000; NORFA North European PhD Training Course, Norway, 2000.

State-of-the-Art Turbidites (with Ben Kneller): Arco British, May 1996; BHP, May 1998.

Submarine Volcanism: Universidad Nacional Autónoma de México, March 2005.

Tectonics and Turbidite Sedimentation: Japanese Oil, Gas and Metals National Corporation, August 2006.

Interpretation of Volcanic Arc Lithofacies: Chilean Geological Survey, March 2011; National University of Columbia, 2013.

REFERENCES

James Gill, UCSC: gillord@ucsc.edu

John Dewey, Distinguished Professor Emeritus: jfdewey@ucdavis.edu

Ray Ingersoll, UCLA: ringer@ess.ucla.edu

Peter Lipman, U.S. Geological Survey: plipman@usgs.gov

Eldridge Moores, Distinguished Professor Emeritus: emmoores@ucdavis.edu

Jason Saleeby, California Institute of Technology: jason@gps.caltech.edu

Keith Putirka, CSU Fresno: kputirka@csufresno.edu

Richard Fiske, Smithsonian (Emeritus): fisker@si.edu

Joann Stock jstock@gps.caltech.edu

Angela Jayko ajayko@usgs.gov

EXTRAMURAL GRANTS IN PAST TEN YEARS:

NSF (pending, with Sue DeBari, July 2013), "Outstanding Exposure of Intact Unmetamorphosed Upper to Middle Crustal Oceanic Arc Section, Baja California: Analog to IODP Ultra-Deep Drilling Site, Izu-Bonin Arc".

NSF (pending, with Axel Schmitt, July, 2013), "Location and Timing of Super-Volcano Eruptions, Shortening and Altiplano Uplift: Western Cordillera of Northern Chile".

NSF grant (pending, with Tina Niemi, resubmitted August 2013), REU Site: Collaborative Research: Field-based Research on the Gulf of California Rift Margin Basins, Baja California Sur, Mexico (\$345,410).

IODP Leg 350 Izu-Bonin Reararc Expedition Co-Chief Scientist: Six months of salary, beginning April 1, 2014.

NSF grant, 2011-2013, "Steady State to Flare-Up Arc Magmatism In The Largest Cenozoic Silicic Igneous Province on Earth: The Sierra Madre Occidental, Mexico (\$220,000).

Spanish Ministry of Education research grant, Spring 2010: "Recent Advances in Tectonics of Sedimentary Basins" (3,000 Euros).

NSF supplemental grant, 2010 - 2013, "Geologic constraints on landscape evolution of the Sierra Nevada, California: Paleochannels, Magmatism and Structure" (\$30,000).

UC Mexus grant (with Elena Centeno Garcia), 2009-2010, Transition from steady state to flareup arc magmatism in the largest Cenozoic silicic igneous and epithermal deposit on Earth: Sierra Madre Occidentale, Mexico (\$25,000).

NSF grant, 2007 - 2010, "Geologic constraints on landscape evolution of the Sierra Nevada, California: Paleochannels, Magmatism and Structure" (\$225,000).

NSF grant (with Keith Putirka, CSUF), 2007 - 2009, Collaborative Research: Origin and Significance of High-Potassium Volcanism: Insights from the Ancestral Cascades Arc, California (\$160,000 to Busby and \$160,000 to Putirka).

GeoEarthScope geochronology grant, 2007 - 2010, "Geologic constraints on landscape evolution of the Sierra Nevada, California: Paleochannels, Magmatism and Structure" (Berkeley Geochronology Center for Busby's dating, \$30,000).

USGS-EDMAP grant, 2009, "Landscape evolution of the Sierra Nevada, California: Paleochannels, magmatism and structure" (\$27,000).

Spanish Ministry of Education research grant, July 2007 – 2008: "Neogene Tectonics and Sedimentation in the Betic Cordillera, Spain" (32,500 Euros).

USGS EDMAP grant, 2006, Spatial Variation in Structural Styles along the Central Sierra Nevada Range Front (California): Clues from Volcanic Stratigraphy (\$15,000).

NSF Grant (PI C. Busby and Co-PI P. Gans), 2002-2005, Miocene Volcanism in the Sierra Nevada, California: Stratigraphy, Volcanology, Geochronology and Structure (\$300,000), collaborative with Ian Skilling (University of Mississippi, \$100,000).

UC Mexus grant, 2005-2006 (with Elena Centeno Garcia, UNAM, Mexico): Exotic vs. Fringing Arcs: Implications for the Growth of Continents (\$15,000 to Busby and \$10,000 to Centeno Garcia).

USGS EDMAP grant, 2005, Geologic Mapping of the Central Sierran Frontal Fault System with Implications for the Tahoe Basin and the Carson City-Bridgeport Population Corridor (\$30,000).

USGS EDMAP grant, 2003, Geologic mapping of Tertiary volcanic-volcaniclastic rocks in the northern Sierra Nevada: Paleotopographic and structural evolution (\$30,000).

INDUSTRY RESEARCH AND EXPLORATION SUPPORT IN PAST FIVE YEARS:

GeoGlobal Energy LLC, 2009-2012, "Volcanic Stratigraphy and Structure of the Puchidiza Geothermal District, Chilean Andes".

Energy Source LLC, Salton Trough California, Hudson Ranch Geothermal Power Facility: Quaternary to Recent tephra and lava domes, 2010-2011.

Hannon Armstrong LLC, 2010, "Volcanology of the Eastern Snake River Plain, Idaho", June 2010 to present (geothermal exploration).

Paramount Gold and Silver, 2008, "Volcanology and Structural Geology of the Guazapares Mining District, Sierra Madre Occidental, Mexico".

CURRENT AND RECENT PROFESSIONAL SERVICE:

Past Chair (2011-2012), Chair (2010-2011) and First Vice Chair (2009 – 2010), Mineralogy Petrology Geochemistry and Volcanology Division of the Geological Society of America.

Penrose Conference Organizer (with Keith Putirka), “Origin and Uplift of the Sierra Nevada”, August 16 – 20, 2010 (included 2 days of formal field trips and 2 days of informal field trips, 2 days of them led by Busby).

California Geologic Mapping Advisory Committee, Sacramento (meets twice annually).

National Science and Engineering Council of Canada (NSERC), Earth Sciences, Research Awards Committee, 2007 – 2009 (reading and scoring of 80-120 proposals across a broad spectrum of Earth Science, and week-long panel).

STUDENTS COMPLETED IN LAST TEN YEARS:

Grant Yip, MS, 2003 (Exxon Mobil); Noah Garrison, MS, 2004 (Attorney in Environmental Protection); Hilario Camacho, PhD, 2004 (Signal Hill Petroleum); Fabrice Roulet, MS, 2006 (Amarada Hess Petroleum); Stephen DeOreo, MS, 2006; Carolyn Gorny, Senior Honors Thesis, 2008 (PhD student at Otago University); Megan Gambs, Senior Honors Thesis, 2009 (PhD student at University of Washington, Seattle); Jeanette Hagan PhD, 2010 (Exxon Mobil); Alice Koerner MS, 2010 (Chevron).

EDITORSHIPS

Origin of the Sierra Nevada and Walker Lane, K. Putirka and C. Busby (eds.), **December 2011 and in progress, Special Issue of Geosphere** (26 papers published to date).

Recent Advances in Tectonics of Sedimentary Basins, 2012, C.J. Busby and A. Azor (eds.), 32 chapters, Wiley-Blackwell Publishing, 632 pp

Tectonics of Sedimentary Basins, 1995, C.J. Busby and R.V. Ingersoll (eds.), Blackwell Science, Oxford, 579 pp.

Editor (with M. Talbot and S. Burley), Sedimentology, 1990-1994 (International Association of Sedimentologists).

Jurassic Magmatism and Tectonics of the North American Cordillera, 1995, D. Miller and C. Busby (eds.), Geological Society of America Special Paper 299, 425 pp.

Sedimentary Geology, 1991, R. Cas and C. Busby-Spera, Special Issue on Volcanogenic Sedimentation, V. 4, nos. 1-4.

EXTRAMURAL EDUCATIONAL PROGRAMS (LAST TEN YEARS):

SPANISH MINISTRY OF EDUCATION GRANT, 2007 – 2008, University of Granada, Spain, Geodynamics Department: lectures in graduate courses and department seminars, and participation in field research trips in the Betic Cordillera.

AMERICAN ASSOCIATION OF PETROLEUM GEOLOGISTS DISTINGUISHED LECTURER, 2001-2002: six weeks of lectures in the U.S. and Canada.

RECENT ORGANIZED FIELD TRIPS LED:

National Association of Geoscience Teachers, Fall 2006, Fall 2012.

Penrose Conference field trips (2 days formal trips plus 2 days informal trips), “Origin and Uplift of the Sierra Nevada”, August, 2010.

Sierra Nevada Earthscope – Sierra Drip Continental Dynamics Meeting, Central Sierra, Fall 2006.

RECENT KEYNOTE/INVITED ADDRESSES:

Tectonic Crossroads, Geological Society of America, Ankara, Turkey, 2010; International Sedimentological Congress, Patras, Greece 2007; International Sedimentological Congress, Fukuoka, Japan, 2006; Penrose Conference on Arc Collisions, 2005

RECENT POSTDOCTORAL RESEARCHER:

Graham Andrews (PhD, Leicester University): now Assistant Professor at California State University.

BOOKS PUBLISHED:

Tectonics of Sedimentary Basins: Recent Advances, 2012, C.J. Busby and A. Azor (eds.), 32 chapters, Wiley-Blackwell Publishing, 632 pp.

Tectonics of Sedimentary Basins, 1995, C.J. Busby and R.V. Ingersoll (eds.), Blackwell Science, Oxford, 579 pp.

PUBLICATIONS

(*students and postdoctoral researchers in italics*).

Papers are posted on my website at: www.geol.ucsb.edu/faculty/busby

IN PAST TEN YEARS:

2013

Busby, Cathy, *Koerner, Alice, Melosh, Ben, Andrews, Graham and Hagan, Jeanette*, 2013a, Sierra Crest graben-vent system: A Walker Lane pull apart within the ancestral Cascades arc: Geosphere, Special Issue (*Eds K. Putirka and C. Busby*) "Origin of the Sierra Nevada and Walker Lane", Geological Society of America, v. 9, no. 4, p. 736-780; doi: 12.1130/GES00670.1

Busby, Cathy, *Hagan, Jeanette*, and Renne, Paul, 2013b, Initiation of Sierra Nevada range front - Walker Lane faulting at ~12 Ma in the ancestral Cascades arc: Geosphere, Special Issue Geosphere (*Eds K. Putirka and C. Busby*) "Origin of the Sierra Nevada and Walker Lane", Geological Society of America, v. 9, no. 5, 22 pp. doi: 10.1130/GES00927.1

Murray, B., Busby, C.J., Ferrari, L., and Solari, L.A., 2013, Synvolcanic crustal extension during the mid-Cenozoic ignimbrite flare-up in the northern Sierra Madre Occidental, Mexico: Evidence from the Guazapares Mining District region. Western Chihuahua: Geosphere, Special Issue (*Eds K. Putirka and C. Busby*) "Origin of the Sierra Nevada and Walker Lane", Geological Society of America, v. 9, no. 5, 35 pp. doi:10.1130/GES00862.1

Busby, Cathy, 2013, Birth of a plate boundary at ~12 Ma in the Ancestral Cascades arc, and implications for transtensional rift propagation, Walker Lane belt: Geosphere, Special Issue (*Eds K. Putirka and C. Busby*) "Origin of the Sierra Nevada and Walker Lane", Geological Society of America, v. 9, no. 5, 14 pp., doi:10.1130/GES00928.1

2012

Busby, Cathy J., *Koerner, Alice, Hagan, Jeanette, and Andrews, Graham*, 2012, Sierra Crest graben: a Miocene Walker Lane Pull-apart in the Ancestral Cascades Arc at Sonora Pass, *in*, N. Hughes and Garry Hayes (eds), Geological Excursions in the Sonora Pass Region of the Sierra Nevada, Far Western Section, National Association of Geoscience Teachers field guide, Fall 2012 (<http://nagt-fws.org/>), p. 8-36.

Busby, Cathy, 2012, Extensional and transtensional continental arc basins: Case studies from the southwestern United States: *in*, C. Busby and A. Azor (eds), Tectonics of Sedimentary Basins: Recent Advances, Wiley-Blackwell, p. 382-404.

2011

Putirka, K.D. and Busby, C.J., 2011, Introduction: Origin of the Sierra Nevada and Walker Lane: *In*, K. Putirka and C. Busby (eds), Geosphere Special Issue: Origin of the Sierra Nevada and Walker Lane; Geological Society of America, v. 7, p. 1269-1272.

Centeno-Garcia, E., Busby, C., *Busby, M.*, Talavera, O. and Gerhels, G., 2011, Evolution of the Cretaceous Guerrero terrane along the Mexican margin, from extensional arc through retroarc to continental arc settings: Geological Society of America Bulletin, v. 123, no. 9/10, p. 1776-1797, doi:10.1130/B30057.1

2010

Busby, C.J. and Putirka, K., Penrose Conference Report: Origin and Uplift of the Sierra Nevada, California, USA: GSA Today, Geological Society of America, v. 20, no. 12, p. 18-20.

2009

Busby, C.J. and Putirka, K., 2009, Miocene evolution of the western edge of the Nevadaplano in the central and northern Sierra Nevada: Paleocanyons, magmatism and structure: in, Gary Ernst, editor, The Rise and Fall of the Nevadaplano, International Geology Reviews, v. 51, nos. 7 – 8, p. 670-701.

Gorny, C., Busby, C., Pluhar, C., Hagan, J., and Putirka, K., 2009, An in-depth look at distal Sierra Nevada paleochannel fill: drill cores through the Table Mountain latite near Knight's Ferry: in, Gary Ernst, editor, The Rise and Fall of the Nevadaplano, International Geology Reviews, v. 51, nos. 9-11, p. 824-842.

Pluhar, C., Deino, A., King, N., Busby, C., Hausback, B., Wright, T., and Fischer, C., 2009, Lithostratigraphy, magnetostratigraphy, geochronology and radiometric dating of the Stanislaus Group, CA, and age of the Little Walker Caldera: in, Gary Ernst, editor, The Rise and Fall of the Nevadaplano, International Geology Reviews, v. 51, nos. 9-11, p. 873-899.

Hagan, J., Busby, C., Renne, P., and Putirka, K., 2009, Cenozoic evolution of paleochannels, Ancestral Cascades magmas, and range-front faults in the Kirkwood - Carson Pass - Markleeville region (Central Sierra Nevada): in, Gary Ernst, editor, The Rise and Fall of the Nevadaplano, International Geology Reviews, v. 51, nos. 9-11, p. 777-823.

Koerner, A., Busby, C., Putirka, K., and Pluhar, C., 2009, New evidence for alternating effusive and explosive eruptions from the type section of the Stanislaus Group in the "cataract" paleocanyon, central Sierra Nevada (CA): in, Gary Ernst, editor, The Rise and Fall of the Nevadaplano, International Geology Reviews, v. 51, nos. 9-11, p. 962-985.

2008

Busby, C., DeOreo, S., Skilling, I., Gans, P., and Hagan, J., 2008, Carson Pass-Kirkwood paleocanyon system: implications for the Tertiary evolution of the Sierra Nevada, California: Geological Society of America Bulletin, v. 120, no. 3/4, p. 274-299.

Busby, C.J., Hagan, J., Putirka, K., Pluhar, C., Gans, P., Rood, D., DeOeo, S., Skilling, I. and Wagner, D., 2008, The ancestral Cascades arc: Implications for the development of the Sierran microplate and tectonic significance of high K₂O volcanism: in, J. Wright and J. Shervais (eds), Ophiolites, Arcs and Batholiths: Geological Society of America Special Paper 438, p. 331-378.

Garrison, N., Busby, C.J., Gans, P.B., Putirka, K. and Wagner, D.L., 2008, A mantle plume beneath California? The mid-Miocene Lovejoy flood basalt, northern California: in, J. Wright and J. Shervais (eds), Ophiolites, Arcs and Batholiths: Geological Society of America Special Paper 438, p. 551-572.

Saleeby, J., Ducea, M.N., Busby, C., Nadin, E., and Whetmore, P.H., 2008, Chronology of pluton emplacement and regional deformation in the southern Sierra Nevada batholith, California: in, J. Wright and J. Shervais (eds), *Ophiolites, Arcs and Batholiths: Geological Society of America Special Paper 438*, p. 397 – 428.

Busby, C.J., “Geology of the Sierra Madre Occidental, Mexico”, Large Igneous Province of the Month, posted on the IAVCEI website:
<http://www.largeigneousprovinces.org/08nov.html>

2007

Busby, C.J. and *Bassett, K.*, 2007, Volcanic facies architecture of an intra-arc strike-slip basin, Santa Rita Mountains, Arizona: *Bulletin of Volcanology*, v. 70, no. 1, p. 85 – 103.

Putirka, K., and Busby, C.J., 2007, The tectonic significance of high K₂O volcanism in the Sierra Nevada, California: *Geology*, V. 35, no. 10, p. 923 – 926.

Purucker, M., Le, G., Sabaka, T., Slavin, J., Strangeway, R., and Busby, C., 2007, Magnetic field gradients from the ST-5 constellation: Improving magnetic and thermal models of the lithosphere: *Geophysical Research Letters*, v. 34, L24306, doi:10.1029/2007GL031739

2006

Busby, C. J., *Fackler Adams, B.*, Mattinson, J., and *De Oreo, S.*, 2006, View of an intact oceanic arc, from surficial to mesozonal levels: Cretaceous Alisitos Arc, Baja California, Mexico: *Journal of Volcanology and Geothermal Research*, v. 149, p.1 – 46.

Busby, C.J. and Wagner, D., 2006, Mapping of Cenozoic volcanic rocks in the central high Sierra: clues to understanding landscape evolution and range-front faulting: *National Association of Geoscience Teachers, Guidebook*, 60 pp.

2005

Busby, C.J., 2005, Possible distinguishing characteristics of deepwater silicic volcanism: *Geology*, v. 33, no. 11, p. 845-848.

Busby, C.J., *Bassett, K.*, Steiner, M.B. and *Riggs, N.R.*, 2005, Climatic and tectonic controls on Jurassic intra-arc basins related to northward drift of North America, in, T.H. Anderson, J.A. Nourse, J.W. McKee and M.B. Steiner, (eds), *The Mojave-Sonora megashear hypothesis: Development, assessment, and alternatives: Geological Society of America Special Paper 393*, p. 359-376.

Bassett, K. and Busby, C., 2005, Structure and tectonic setting of an intra-arc strike-slip basin (Bisbee Basin, Southern Arizona): in, T.H. Anderson, J.A. Nourse, J.W. McKee and M.B. Steiner, (eds), *The Mojave-Sonora megashear hypothesis: Development, assessment, and alternatives: Geological Society of America Special Paper 393*, p. 359-376.

2004

Busby, C.J., 2004, Continental growth at convergent margins facing large ocean basins: a case study from Mesozoic Baja California, Mexico: *Tectonophysics*, v. 392, p. 241-277.

Busby, C.J., Skilling, I., *Rood, D.*, *DeOreo, S.* and Gans, P., 2004, Cenozoic volcanology and structural geology of the Carson Pass – Sonora Pass areas, Central Sierra Nevada, California: *Field Guide, Volcanological Society of Sacramento Annual Field Trip, July 21-25*, 204.

2003

Busby, C.J., *Kessel, L.*, Schulz, K., Foote, M., and Slack, J., 2003, Volcanic setting of the Ordovician Bald Mountain Massive Sulfide Deposit, Northern Maine: in, W. Goodfellow, S.R. McCutcheon and J.M. Peter (eds.), *Massive Sulfide Deposits of*

- the Bathurst Mining Camp, New Brunswick and Northern Maine: Economic Geology Monograph 11, p. 219-244 plus 2 large plates in back pocket.
- Kessell, L. and Busby, C.J., 2003, Analysis of VHMS-Hosting Ignimbrites Erupted at Bathyal Water Depths (Ordovician Bald Mountain Sequence, Northern Maine), in, J. White, J. Smellie and D. Clague (eds.), Explosive Subaqueous Volcanism: American Geophysical Union, Geophysical Monograph Series, v. 140, p. 372-392.
- Foose, M.F., Slack, J.F., Busby, C.J., Schulz, K.J. and Scully, M.V., 2003, Geologic and structural setting of the Bald Mountain volcanogenic massive sulfide deposits, northern Maine - CU-Zn-Au-Ag mineralization in a synvolcanic sea floor graben: in, W. Goodfellow, S.R. McCutcheon and J.M. Peter (eds.), Massive Sulfide Deposits of the Bathurst Mining Camp, New Brunswick and Northern Maine: Economic Geology Monograph 11, p. 497-512.
- 2002**
- Busby, C.J., Yip, G., Blikra, L., and Renne, P., 2002, Pacific margin example of catastrophic sedimentation triggered by K/T bolide impact: *Geology*, v. 30, p. 687– 690.
- Busby, C.J., Schermer, E.R. and Mattinson, J.M., 2002, Extensional arc setting and ages of Middle Jurassic eolianites, Cowhole Mountains (Mojave Desert, CA): GSA Memoir 195 (A. Glazner, J.D. Walker and J.M. Bartley, eds), Geologic Evolution of the Mojave desert and Southwestern Basin and Range, p. 79 – 92.
- Camacho, H., Busby, C.J., and Kneller, B.C., 2002, A new depositional model for the classical turbidite locality at San Clemente State Beach, California: *American Association of Petroleum Geologists Bulletin*, v. 86, no. 9, p. 1543-156
- Schermer, E.R., Busby, C.J. and Mattinson, J.M., 2002, Paleogeographic and tectonic implications of Jurassic sedimentary and volcanic sequences in the west-central Mojave desert; GSA Memoir 195, Mojave Desert (A. Glazner, J.D. Walker and J.M. Bartley, eds) p. 93 – 116.
- Critelli, S., Marsaglia, K., and Busby, C., 2002, Tectonic and sedimentary controls on the composition of backarc volcanoclastic rocks; *Geological Society of America Bulletin*, v. 114, no. 4, p. 515 – 527

SELECTED PUBLICATIONS GREATER THAN TEN YEARS OLD:

- Busby, C.J., Smith, D.P., Morris, W.R. and Adams, B., 1998, Evolutionary model for convergent margins facing large ocean basins: Mesozoic Baja California (Mexico): *Geology*, v. 26, no. 3, p. 227-230.
- Fackler-Adams, B.N. and Busby, C.J., 1998, Structural and stratigraphic evolution of extensional oceanic arcs: *Geology*, v. 26, no. 8, p. 735-738.
- Adams, B.N., Busby, C.J. and Mattinson, J.M., 1997, Jurassic magmatism and sedimentation in the Palen Mountains, southeastern California: Implications for regional tectonic controls on the Mesozoic magmatic arc: *Geol. Soc. America Bull.*, v. 109, p. 1464-1484.
- Schermer, E. R. and Busby, C. J., 1994, Jurassic magmatism in the central Mojave Desert: implications for arc paleogeography and preservation of continental volcanic sequences: *Geol. Soc. America Bull.*, v. 106, p. 767-790.
- Smith, D. P., and Busby, C. J., 1993a, Mid-Cretaceous crustal extension recorded in deep-marine half-graben fill, Cedros Island, Mexico. *Geol. Soc. America Bull.*, v. 105, p. 547-562.
- Kokelaar, B. P., and Busby C. J., 1992, Subaqueous explosive eruption and welding of pyroclastic deposits: *Science*, Full Article, v. 257, p. 196-201.

- Saleeby, J. B., and Busby-Spera, C. J., 1992, Early Mesozoic evolution of the western U.S. Cordillera, In B. C. Burchfiel, P. W. Lipman and M. L. Zoback (eds.) *The Cordilleran Orogen: Conterminus United States: Decade of North American Geology*, Geological Society of America, v. G-3, p. 107-168.
- Riggs, N. R., and Busby-Spera, C. J., 1991, Facies analysis of an ancient large caldera complex and implications for intra-arc subsidence: middle Jurassic Cobre Ridge Group, Southern Arizona, USA: *Sedimentary Geology*, Special Issue on Volcanogenic Sedimentation, R. Cas and C. Busby-Spera (eds), v. 74, nos. 1-4, p. 39-70.
- Busby-Spera, C. J. and Saleeby, J. B., 1990, Intra-arc strike slip fault exposed at batholithic levels in the southern Sierra Nevada, California: *Geology*, v. 18, p. 255-259.
- Morris, W. R., and Busby-Spera, C. J., 1990, A submarine fan valley-levee complex in the Upper Cretaceous Rosario Formation, Baja California: Implications for turbidite facies models: *Geol. Soc. America Bull.*, v. 102, p. 900-914.
- Riggs, N. R., and Busby-Spera, C. J., 1990, Evolution of a multi-vent volcanic complex within a subsiding arc graben depression: Mount Wrightson Formation, southern Arizona. *Geol. Soc. America Bull.*, v. 102, no. 8, p. 1114-1135.
- Busby-Spera, C. J., 1988a, Speculative tectonic model for the Early Mesozoic arc of the southwest Cordilleran United States: *Geology*, v. 16, p. 1121-1125.
- Busby-Spera, C. J., 1988b, Evolution of a Middle Jurassic back-arc basin, Cedros Island, Baja California: Evidence from a marine volcanoclastic apron: *Geol. Soc. America Bull.*, v. 100, p. 218-233.
- Morris, W. R., and Busby-Spera, C. J., 1988, Sedimentologic evolution of a submarine canyon in a forearc basin, Late Cretaceous Rosario Formation, San Carlos, Mexico: *Am. Assoc. Petroleum Geologists*, v. 72/6, p. 717-737.
- Busby-Spera, C. J., and White, J. D. L., 1987, Variation in peperite textures associated with differing host sediment properties: *Bull. Volcanology*, v. 49, no. 6, p. 765-776.
- Busby-Spera, C. J., 1987, Lithofacies of deep marine basalts emplaced on a Jurassic backarc apron, Baja California (Mexico): *Jour. of Geology*, v. 95, p. 671-686.
- Busby-Spera, C. J., 1986, Depositional features of rhyolitic and andesitic volcanoclastic rocks of the Mineral King submarine caldera complex, Sierra Nevada, California: *Jour. Volcanology and Geothermal Res.*, v. 27, p. 43-76.
- Busby-Spera, C. J., 1984a, Large-volume rhyolite ash-flow eruptions and submarine caldera collapse in the lower Mesozoic Sierra Nevada, California: *Jour. Geophys. Res.*, v. 89, no. B10, p. 8417-8427.