

**JOAN E. FRYXELL**

**Contact information:**

**Work:**

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**Employment History:**

**Graduate Coordinator**, M.S. in Earth and Environmental Sciences Program, CSUSB, Fall 2011-present.

**Professor**, Dept. of Geological Sciences, CSUSB, 2000-present.

**Visiting Professor**, Dept. of Geology, California State University, Hayward (now CSU East Bay), summer 2000.

**Associate Professor**, Dept. of Geological Sciences, CSUSB, 1994-2000.

**Interim Chair**, Dept. of Geological Sciences, CSUSB, 1997-98.

**Assistant Professor**, Dept. of Geological Sciences, CSUSB, 1989-94.

**Adjunct Assistant Professor**, Dept. of Earth Sciences, Montana State University, 1991-94.

**Postdoctoral Fellow**, Dept. of Earth and Planetary Sciences, Harvard University, 1987-89.

**Lecturer**, Dept. of Earth and Planetary Sciences, Harvard University, 1987-88.

**Geologist**, Arizona Geological Survey, January through April 1987. Mapping in the Wickenburg and Hieroglyphic Mountains, Arizona, part of the COGEMAP project cosponsored by the USGS.

**National Research Council Postdoctoral Research Associate**, 1984-86. Research at the USGS Field Center in Flagstaff, Arizona into the thermochronology of the Rawhide, Buckskin, Harcuvar, and Harquahala Mountains in west-central Arizona to constrain evolution of the Rawhide-Buckskin-Bullard detachment fault system.

**Academic Background:**

**Ph.D. in Geology**, University of North Carolina at Chapel Hill, 1984. Dissertation topic: structural, metamorphic, and geochronologic development of ductile and brittle superposed contractional and extensional deformations of rocks in the west-central Grant Range, Nye County, Nevada.

**M.A. in Botany**, The University of Texas at Austin, 1980. Thesis topic: taxonomic revision and expansion of section *Oligocarpae* in the genus *Abutilon* of the Malvaceae (cotton family).

**B.A. in Geology**, Earlham College, Richmond, Indiana, 1977.

**Field Experience:**

**Geologic field work, Commonwealth of Dominica, West Indies**, June 2005, June – July 2006, June – July 2007.

Investigating eruptive history of the island, and monitoring current temperatures and chemistry of hot springs. 2006 and 2007 work is part of an NSF-REU grant.

**Geologic mapping, Horse Range and Grant Range, NV**, August 1992, June 1993, July 1994, July - August 1995, July - August 1997, August 1998, August 1999, June-July 2000, August 2001, August 2002, August 2004, August 2005, August 2006, 2007, 2008, 2009, July 2010, July/August 2011, August 2012, August 2013, August/September 2014. Examining Cenozoic normal and oblique-slip faults to identify boundary structures for the Horse Camp basin and to identify post-Horse Camp Formation dismembering faults, and examining older structures, including thrust faults, to determine relative contributions to the overall structural state of the region. The 1997 and 2000 mapping was carried out as part of the Field Camp course taught to advanced undergraduate students, which involved them in ongoing field research. Most subsequent work also included undergraduate students, for advanced mapping courses or senior project purposes.

**Geologic mapping, Yunmeng Shan, China**, August 1991. Mapping Archean and Proterozoic rocks, ductilely contracted, intruded by granites, then extended both ductilely and brittlely, all in Cretaceous time. Collected samples for  $^{40}\text{Ar}/^{39}\text{Ar}$  dating to constrain thermal history of area.

**Geologic mapping, central Grant Range, NV**, July 1990. Mapping Mesozoic thrust-related folds and Tertiary normal faults to understand geometric and kinematic relations of the faulting history of the region.

**Geologic mapping, South Virgin Mountains, NV**, January and February 1988; Reconnaissance work to constrain fault geometry and distribution in a possible tilted crustal section. October to December 1988, and February to May 1989; detailed mapping and sampling for thermochronology and thermobarometry across the crustal section.

**Geologic mapping, SE Grant Range, NV**, June to September 1988. Mapping Mesozoic thrust faults and Tertiary normal faults to correlate structures in the Quinn Canyon Range with those in the central Grant Range, and to constrain movement directions of those structures.

**Geologic mapping, Wickenburg and Hieroglyphic Mountains, AZ**, January through April 1987, with the Arizona Geological Survey.

**Geologic mapping, northern Grant Range, NV**, May and June 1986, for the Riordan Well Wilderness Study Area for the Bureau of Land Management through the USGS.

**Sample collecting and reconnaissance mapping, Rawhide, Buckskin, Harcuvar, and Harquahala Mountains, AZ**, February to June 1985 and February to May 1986 for  $^{40}\text{Ar}/^{39}\text{Ar}$  incremental release dating.

**Geologic mapping, central Grant Range, NV**, summers of 1981, 1982, and 1983. Dissertation mapping of Mesozoic folds, ductile shear zones in the western portion of the range to determine the thermal history and structural development of the rocks in the range. Work during the 1983 field season included supervising two master's students mapping in an adjacent range.

**Research Assistant**, Dept. of Biology, University of Colorado at Colorado Springs, summer 1980. Floral phenology data collection, and assistance with other projects in a five-year pollination ecology study of the tundra and krummholz on Pennsylvania Mountain near Fairplay, Colorado.

### Laboratory Experience:

**Guest Worker**,  $^{40}\text{Ar}/^{39}\text{Ar}$  facility at UCLA, intermittently from fall 1990-93. Analysis of samples from NV and China to constrain thermal histories of extensional systems.

**Laboratory Supervisor**, mineral separation and rock crushing facilities, Dept. of Earth and Planetary Sciences, Harvard University, September 1987-89. Supervision of preparation and maintenance of equipment and training of operators. Mineral Separation for the South Virgin Mountains project.

**NRC postdoctoral research**: preparation of amphibole, biotite, muscovite, and K-feldspar mineral separates for  $^{40}\text{Ar}/^{39}\text{Ar}$  incremental release analysis. Analysis of these samples on the Argon mass spectrometer at the USGS in Reston during 1986-89.

**Dissertation research**: sample preparation and Rb/Sr whole-rock geochronologic analysis at UNC of the Troy granite in the west-central Grant Range of NV, during 1984.

**Research Assistant**, Dept. of Geology, University of North Carolina, spring 1982. Preparation of amphibole mineral separates for  $^{40}\text{Ar}/^{39}\text{Ar}$  incremental release analysis.

### Teaching Experience:

**Assistant, Associate, and Full Professor**, Dept. of Geological Sciences, CSUSB. Standard teaching load is 12-16 contact hours per week. Courses taught: *Structural Geology* (lecture and labs), *Tectonics*, *Field Camp*, *Geology of California*, *Introduction to Geological Mapping* (lecture and labs), *Introductory Geology* (lecture and labs), *Field Geology of the \_\_\_ Series* (taught: *Grand Canyon*, *Colorado Plateau*, and *Mojave Desert*), *Natural Sciences Capstone*, *Natural Disasters*, *Advanced Geologic Mapping*, *Advanced Structural Geology*, *Graduate Geologic Mapping*, and *Graduate Seminar in Earth and Environmental Sciences*.

**Degree Development and Related Activities**: participated in developing the B.S. in Geology, Minor in Geology, and Honors in Geology; coordinated the implementation of the B.A. in Geology; wrote the Departmental Self-Study in 1995, 2000, and 2005. Developed the Environmental Geology Option for the B.S. in Geology, including the new courses *Hydrogeology*, *Field Methods in Hydrology*, and *Engineering Geology*. Wrote description for new elective course, *Scientific Issues in Surface and Groundwater Management*, for the MPA specialty in water resources management.

**Member of the ad hoc committee** that developed the M.S. in Environmental Sciences program, implemented as a pilot degree Fall 2006, and was approved for permanent status in 2012.

**Coordinator**, working group to develop and refine the *Introductory Geology* Lab Manual, 1990-present. This manual is designed to highlight the unique geological setting at CSUSB, provide *Introductory Geology* students with direct, experimental, and hands-on activities that will prove relevant to the general public, and do so efficiently within the quarter system.

**Adviser**, 1993, for development of the Virtual Geology CD, an interactive supplement the Lab Manual discussed above.

**Lecturer**, Dept. of Earth and Planetary Sciences, Harvard University. Courses taught: *Structural Geology* and *Introductory Geology*. Courses team-taught with Brian Wernicke.

**Instructor**, Dept. of Geology, Northern Arizona University. *Field Camp* course for advanced undergraduates, with field projects in northern Arizona and southeastern Utah.

**Teaching Assistant**, Dept. of Geology, University of North Carolina. Fall 1980 and 1981, labs for *Structural Geology*. Spring 1981, labs for *Introductory Geology* and for *Igneous and Metamorphic Rocks*.

**Teaching Assistant**, Dept. of Botany, University of Texas. Fall 1978, labs for *Plant Kingdom*: survey of taxonomy and life histories of non-vascular plants. Spring 1979, labs for *General Botany*: structure and function of vascular plants.

**Graduate Student Committee Chair for:**

**Malcolm Thomas**, CSUSB, Environmental Sciences, to graduate December 2014. M.S. Thesis topic: Refraction microtremor analysis of areas surrounding California State University, San Bernardino.

**Catherine Lytle**, CSUSB, Environmental Sciences, graduated 2014. M.S. Thesis topic: Mitigation of invasive *Arundo donax* in the San Timoteo Canyon area.

**Graduate Student Committee Member for:**

**Thomas Crane**, CSUSB Environmental Sciences, to graduate December 2014. M.S. Thesis topic: Qualitative comparison of offset surfaces between the central and western Garlock Fault

**Cody Hanford**, CSUSB Environmental Sciences, M.S. Thesis topic: Environmental assessment of legacy mining operations in the Panamint City Mining District of Death Valley National Park

**Laura Saucedo**, CSUSB Environmental Sciences, M.S. Thesis topic: Elemental Carbon / Black Carbon analysis comparisons.

**Megan D. Engel**, CSUSB Environmental Sciences, graduated 2014. M.S. Thesis topic: Feasibility of chaparral restoration on type-converted slopes.

**Amanda Lopez**, CSUSB Environmental Sciences, graduated 2013. M.S. Thesis topic: Stable isotopes in stichtite.

**Christina Velasquez**, CSUSB Environmental Sciences, graduated 2012. M.S. Thesis topic: Geochemistry and production estimates of gold deposits in the Quartzsite mining district, Arizona.

**Zablon Adane**, CSUSB Environmental Sciences, graduated 2010. M.S. Thesis topic: estimated area of impervious parking surfaces of commercial, industrial, and institutional land uses and the potential groundwater recharge increase through permeable pavement retrofit in the Chino Basin.

**Gavan Albright**, CSUSB Dept. of Biology, graduated 2003. M.S. Thesis topic: Cranial structure in members of the reptilian family Captorhinidae.

**Natalia K. Wideman**, CSUSB Dept. of Biology, graduated 2002. M.S. Thesis topic: The postcranial skeleton of the family Limnoscelidae and its taxonomic implications for understanding basal amniotes.

**James B.D. Walliser**, CSUSB Dept. of Biology, graduated 1999. M.S. Thesis title: Reconsideration of post-cranial characteristics and phylogenetic position of *Tseajaia campi* Vaughn (a Permian tetrapod) 75 p.

**Brian Horton**, Montana State University, graduated 1994. M.S. Thesis title: Sedimentology, provenance, and tectonic setting of the Miocene Horse Camp Formation (member 2), east-central NV, 90 p.

**Cheryl L. Brown**, Montana State University, graduated 1993. M.S. Thesis title: Early Tectono-Sedimentary History of a Neogene Extensional Basin in East-Central NV, 157 p.

**Undergraduate Senior Project Supervisor for:**

2014-2015: **Ashleigh N. Covarrubias**, Geomorphologic and paleoenvironmental change in Glacier National Park, Montana, USA: analysis of near-surface lake core sediment (part of Keck Geology Consortium)

**Marissa D. De Hoyos**, The effects of soil compaction on coastal sage scrub on the Land Lab at CSUSB

**Corey B. Rattray**, Nature of transverse fault deformation in the Horse Range, Nevada

2013-2014: **James E. Burns**, Effects of remediation and time on compacted coastal sage scrub soil

**Joyce A. Goode**, Geologic deformation of the eastern flank of the Horse and northern Grant Ranges, NV

2012-2013: **Amy K. Kearney**, Oreodont Tuff comparison, Barstow Formation, Rainbow Basin area, California

**Garrett R. McElhenny**, Analysis of the Mudcrack Tuff in Rainbow Basin near Barstow California

**Kimberley A. Montano**, Mudcrack Tuff faulting pattern, Rainbow Basin, CA

**Ali N. Snowden**, Quaternary basalts in and near Grant Range, Nevada

2011-2012: **Michelle L. Smith**, The effects of large dirt piles on soil compaction

2010-2011: **Kyle P. Meade**, Petrologic analysis of Railroad Valley Rhyolite, Nye County, NV

**Keith T. Rivera**, Determination of a displaced block sequence in Horse Range in east central Nevada

2009-2010: **Jonathan J. Stephens**, The effects of large dirt piles on soil compaction

2008-2009: **Jeffrey S. Decker**, Tertiary ignimbrites of the northern Grant and Horse Ranges, East Central Nevada

**Terrance L. Emershy**, Project title: ???

2007-2008: **Jeffrey S. Fitzsimmons**, Surface lineament analysis, San Bernardino Valley, CA

2005-2006: **Kyle Kilgore**, Variations in ignimbrite deposits of the Horse Range: consequences of geography or geology?

**Grants:**

2011:	<b>NSF DUE Program</b> , “Maturation of an S-STEM Scholarship Program at a HSI/MSI”, 7/2011 – 6/2015. PI: K. Cousins, Co-PIs: Fryxell, Middleton, Qiao, and Wallace	<b>\$591,231</b>
2007:	<b>CSUSB Professors Across Borders Travel Grant</b> , for supplementary funding for boat rental to circumnavigate the island of Dominica, West Indies to develop a photographic archive of all sea cliff bedrock exposures.	<b>\$1,800</b>
	<b>CSUSB Minigrant</b> “Exploratory study for <sup>40</sup> Ar/ <sup>39</sup> Ar dating of volcanic rocks on Dominica”	<b>\$5,000</b>
	<b>CSUSB Summer Research Fellowship</b> , to partially cover salary for field work in Dominica	<b>\$3,000</b>
2006:	<b>NSF Research Experience for Undergraduates</b> “Collaborative research: REU site in Dominica, West Indies: Integrated examination of dynamic volcanic systems using field volcanology, satellite geodesy, and modeling” 2006-2008, with Dr. Smith	<b>\$154,799</b>
	<b>NSF DUE Program</b> , “Mathematics and Science Scholars at California State University, San Bernardino”, 6/2006 – 5/2008. with Drs. Georgiou, Wallace, Polcyn, Cousins, Schubert, and Renteln	<b>\$500,000</b>
	<b>Southern California Earthquake Center</b> “Holocene and Latest Pleistocene Slip Rate of the San Andreas Fault in the San Bernardino Valley”, 2/2006 – 1/2007, with Dr. McGill	<b>\$35,000</b>
2004:	<b>CSUSB Teaching Resource Center</b> Course Development Grant, to revise the Introductory Geology Laboratory Manual, with Dr. Melchiorre, summer 2004	<b>\$5,000</b>
	<b>CSUSB Teaching Resource Center</b> Teaching Skills Study Award, for travel expenses to attend the Teaching Structural Geology in the 21 <sup>st</sup> Century workshop, June, 2004	<b>\$650</b>
2002:	<b>USDA HSI</b> “Instrumentation for Digital Field Data Collecting”, 6/2002-6/2004, with Drs. Kumler and Meek, (plus \$107,285 match from CSUSB)	<b>\$148,318</b>
2001:	<b>NSF Enhancing Diversity in the Geosciences Program</b> , “Earth Science Pipeline: Recruiting and Retaining Under-represented Ethnic Groups in the Earth Sciences from 6 <sup>th</sup> Grade to Post-college”, 9/2001-9/2004 with Drs. Smith, McGill, Leatham, and Brunkhorst, (plus \$285,646 match from CSUSB)	<b>\$644,797</b>
	<b>Federal Geographic Data Committee, U.S. Geological Survey</b> , “San Bernardino Regional Geospatial Data Clearinghouse Development”, 7/2001-6/2002	<b>\$5,933</b>
	<b>Water Resources Institute of CSUSB</b> , Grant Development Support, to provide time to write a proposal to the Federal Geographic Data Committee in the U.S. Geological Survey for follow-on funding for the San Bernardino Regional Geospatial Data Clearinghouse, 1/2001-4/2001	<b>\$3,400</b>
2000:	<b>CSUSB Community-University Partnerships Service-Learning Fellowship</b> , 11/2001-6/2002, with Dr. McGill, to develop departmental internship program	<b>\$5,000</b>
	<b>USDA HSI</b> , “Educating and Training a Diverse Workforce of Water Professionals”, 7/2000 - 6/2002, with Dr. McDowell	<b>\$150,000</b>
1999:	<b>Faculty Grant Preparation Support</b> Proposal to the College of Natural Sciences, CSUSB, to provide time to write the NSF proposal described above	<b>\$3,359</b>
	<b>USGS</b> “San Bernardino Regional Geospatial Data Clearinghouse”, submitted to the National Geospatial Data Clearinghouse, U.S. Geological Survey, with Dr. Kumler	<b>\$12,960</b>
1998:	<b>CSUSB Faculty-Community Interaction Fellowship</b> , with Drs. Kumler and McDowell	<b>\$5,000</b>
	<b>CSUSB Academic Affairs</b> support for curricular initiatives related to the Water Resources Institute Co-PIs: Drs. Fryxell, Kumler, and McDowell, 24 WTU release for AY1998-1999	<b>\$18,894</b>
1996:	<b>CSUSB Faculty Professional Development</b> Mini-Grant (Landslides)	<b>\$4,325</b>
1995:	<b>CSUSB Faculty Professional Development</b> Mini-Grant (Vincent Thrust)	<b>\$3,842</b>
1993:	<b>CSUSB Affirmative Action Professional Development</b> Grant (course development)	<b>\$2,793</b>
	<b>CSUSB Faculty Professional Development</b> Mini-Grant	<b>\$2,000</b>
1991:	<b>CSUSB Affirmative Action Professional Development</b> Grant (proposal development),	<b>\$3,053</b>
	<b>CSUSB Summer Fellowship</b> (Yunmeng Shan, China)	<b>\$3,039</b>
	<b>CSUSB Faculty Professional Development</b> Mini-Grant (Yunmeng Shan, China)	<b>\$2,248</b>
1990:	<b>NSF</b> subcontract on EAR-8916886 (South Virgin Mountains, NV)	<b>\$7,070</b>
	<b>CSUSB Summer Fellowship</b> (Grant Range, NV)	<b>\$2,766</b>
	<b>Marathon Oil Company</b> (Grant Range, NV)	<b>\$2,200</b>
1988:	<b>Marathon Oil Company</b> (Grant Range, NV)	<b>\$4,000</b>
1982:	<b>Atlantic Richfield Oil Company</b> Research Grant (Grant Range, NV)	<b>\$2,500</b>
	<b>Gulf Oil Company</b> Research Grant (Grant Range, NV)	<b>\$2,000</b>
	<b>McCarthy Fellowship</b> of the University of North Carolina (Grant Range, NV)	<b>\$500</b>
	<b>Sigma Xi Grant-in-Aid</b> of Research (Grant Range, NV)	<b>\$400</b>
	<b>Cordilleran Geological Survey, Inc.</b> (Grant Range, NV)	<b>\$300</b>
1981:	<b>Geological Society of America</b> Penrose Fund (Grant Range, NV)	<b>\$900</b>
	<b>Sigma Xi Grant-in-Aid</b> of Research (Grant Range, NV), for dissertation field work	<b>\$350</b>
	<b>Smith Fund</b> of the University of North Carolina, for dissertation-related reference materials	<b>\$125</b>

### **Honors:**

Outstanding Research, Scholarly and Creative Activities Award, College of Natural Sciences CSUSB, 2013-2014.  
Distinguished Service Award, CSUSB 1993-94.  
Outstanding Instructionally Related Activity Award, School of Natural Sciences, CSUSB, 1993-94.  
Early promotion to Associate Professor, 1994.  
Member, Sigma Xi. Elected 1985.  
National Research Council Postdoctoral Research Associate, USGS, December 1984 to December 1986.  
Petroleum Research Fund Fellow, University of North Carolina, August 1983 through May 1984.  
McCarthy Fellow, University of North Carolina, summer 1982.

### **Professional Societies:**

American Geophysical Union  
Geological Society of America  
Inland Geological Society  
Nevada Petroleum and Geothermal Society  
Sigma Xi

### **Editorial Experience:**

Associate Editor, Geological Society of America Bulletin, 2000-2002 and 2002-2004 terms.

### **Reviewed Manuscripts and Proposals For:**

Economic Geology	Mountain Geologist
Educational Testing Service, for Geology GRE questions	National Park Service Transactions and Proceedings Series
Geological Society of America Bulletin	National Science Foundation
Geological Society of America 1997 Annual Meeting	Nevada Bureau of Mines and Geology
Field Trip Guide	Nevada Petroleum Society 1996 Field Trip Guide
Geological Society of America Special Volumes	Petroleum Research Fund
Journal of Geophysical Research	Tectonics
	Utah Geological Association

### **Scientific Meeting Contributions:**

Member, Organizing Committee, Cordilleran Section Annual Meeting, to be held April 2016 in Ontario, CA.

Richard Harris, NPR Science Correspondent, 2013 Distinguished Lecturer, Geology and Society Division, GSA Annual Meeting, "Why people trust scientists, but not science – climate denial in context".

Co-convenor, with J. Greenberg and G.T. LaVanchy, "Geosciences and international development", Technical Session, 2013 GSA Annual Meeting, <https://gsa.confex.com/gsa/2013AM/webprogram/Session33138.html>

Dr. Mohamed El-Ashry 2012 Distinguished Lecturer, Geology and Society Division, GSA Annual Meeting, "Energy and sustainability linkages".

Co-convenor, with D.W. Szymanski, and T.S. Ledley, "Understanding risk and communicating uncertainty to the public" Technical Session, 2012 GSA Annual Meeting, <https://gsa.confex.com/gsa/2012AM/webprogramadap/Session30897.html>

Dr. Edward Maibach, 2011 Distinguished Lecturer, Geology and Society Division, GSA Annual Meeting, "Improving the effectiveness of communication about climate science: a communication scientist's perspective".

Co-convenor, with D.W. Szymanski, "STEMming the tide: how can we promote science literacy?" Technical Session, 2011 GSA Annual Meeting, <https://gsa.confex.com/gsa/2011AM/webprogramcd/Session28801.html>

Chair, Organizing Committee, and Member of Technical Program Committee for Geological Society of America Cordilleran Section Annual Meeting, March 21-23 1994. Meeting had about 850 registrants, 45 technical sessions, 30 exhibitors, and coordinated 16 field trips.

### **Special Conferences, Workshops, and Short Courses Attended:**

Teaching Structural Geology in the 21<sup>st</sup> Century, June 26-July 2, 2004, Smith College, Northampton MA, part of the NAGT/DLESE On the Cutting edge Project (<http://serc.Carleton.edu/NAGTWorkshops/index.html>).

Digital Mapping Methods: Accurate Digital Data Capture and Analysis for the Field Geoscientist, Geological Society of America (GSA) Short Course, Reno NV, 11-12 November 2000.

Metadata Training Workshop, CSUSB, May 24-25, 2000, conducted by M.L. Anthony, EROS Data Center, Sioux Falls, SD.

Introduction to ArcView GIS, Environmental Systems Research Institute (ESRI), Redlands CA, 6-7 July 1998.  
Introduction to ArcView GIS, Professional Development workshop at CSUSB, 7 March 1997.  
Eastern California Shear Zone Workshop, Institute for Crustal Studies, UC Santa Barbara, 4-6 September, 1991.  
Penrose Conference, Cordilleran Metamorphic Core Complexes, Revisited: Implications for crustal extension and shortening in the North American Cordillera, Elko, NV 11-17 September 1987.  
Principles of Rock Mechanics, GSA Short Course, Texas A&M University, College Station TX, 14-15 November 1986.

**Field Trips Led:**

Hydrocarbon Habitat & Special Geologic Problems of the Great Basin, Nevada Petroleum Society 1998 Field Trip, co-chairs: D. French, R. Schalla, contributors: T. Flanigan, J.E. Fryxell, D.C. Greene, J.B. Hansen, D.M. Herring, J. Hulen, E.H. Johnson, K.L. Ransom, W.J. Taylor, 11-13 September 1998.  
Mesozoic(?) Contraction in Central Nevada: The Central Nevada Thrust Belt, led with W.J. Taylor, J.M. Bartley, and J.G. Schmitt, for the GSA Cordilleran Section Meeting, May 1993.  
Cenozoic Tectonics of a Transect Through Eastern Nevada Near 38° N. Latitude, led with J.M. Bartley, G.J. Axen, and W.J. Taylor, for the GSA Cordilleran Section Meeting, March 1988.

**Field Trips Attended:**

Detachment and Attenuation in Eastern Nevada and its Application to Petroleum Exploration, Nevada Petroleum Society Annual Field Trip, led by C.T. Walker and D. Francis, 9-11 August 2002.  
A Transect of the Southern Canadian Cordillera -- Calgary to Vancouver, led by R.A. Price and J.W.H. Monger, 24-26 April 2000.  
Grand Tour of the Ruby - East Humboldt Metamorphic Core Complex, Northeastern NV, led by A.W. Snoke, K.A. Howard, A.J. McGrew, B.R. Burton, C.G. Barnes, M.T. Peters, and J.E. Wright, 16-19 Oct. 1997.  
Far Western Sect. NAGT 1992 Field Trip, San Andreas and Garlock Faults, led by S.F. McGill, 10-12 April, 1992.  
Miocene Extension, Volcanism, and Sedimentation in the Eastern Basin and Range Province, Southern NV, led by E.I. Smith, R.E. Anderson, R.J. Bohannon, and G.J. Axen for the GSA Annual Meeting 22-25 Oct. 1987.  
Beaver Dam Mountains, UT to Death Valley, CA, examining extensional structures, led by B.P. Wernicke of Harvard University, 6-15 Sept. 1985.  
Cordilleran Cross Section, Calgary to Vancouver, led by J.W.H. Monger, R.A. Price, and J.A. Roddick for the GSA Cordilleran Section Meeting, 4-7 May 1985.  
Geology of the Ruby Mountains-East Humboldt Range, NV: A Cordilleran Metamorphic Core Complex, led by A.W. Snoke and K.A. Howard for the GSA Annual Meeting, 1-4 Nov. 1984.  
Tertiary Extension Tectonics in the Sevier Belt of Southern NV, led by B.P. Wernicke, P.L. Guth, and G.J. Axen for the GSA Annual Meeting, 8-11 Nov. 1984.  
Timing and Style for Tertiary Extension and Magmatism in East-central NV, led by E.L. Miller and P.B. Gans for the GSA Cordilleran Section Meeting 4-7 May 1983.  
Metamorphic Core Complexes in Northern Sonora and Southern Arizona, led by G.H. Davis and T.H. Anderson for the GSA Cordilleran Section Meeting, 28-30 March 1981.

**Invited Lectures (\* indicates primarily undergraduate students in group being addressed):**

Guest Speaker at Desert R.A.T.S. (Radio Amateur Transmitting Society), Palm Springs, CA, "Disaster Myths vs. Preparedness" 16 November 2014.  
Guest Speaker at 4<sup>th</sup> Annual Amateur Radio Emergency Service (ARES) seminar and training, Orange Section of the Amateur Radio Relay League (RRL) [Inyo, Orange, Riverside, and San Bernardino Counties] "Earthquake Myths vs. Preparedness", 2 August 2014.  
Guest Speaker at Upland Rotary Club, "Earthquake Myths", 15 January 2014.  
Science on Tap Speaker at Claremont Craft Ales, "Disaster Myths", 25 September 2013.  
San Bernardino County Museum Guest Lecture Series, "Volcanic Geology on Dominica: Undergraduate Students and Boiling Springs", 25 April 2007.  
12<sup>th</sup> Annual Math - Science Conference for Eighth Grade Girls, sponsored by the AAUW Redlands Branch, workshop presenter, 27 February 2006.  
Claremont Manor, Claremont CA, "Living with Uncertainty", 2 February 2006.  
Hi-Desert Nature Museum, Yucca Valley CA, "Living with Uncertainty - the Landers Earthquake, the Next One, and Beyond", 9 February 2006.  
Branner Club, Athenaeum at California Institute of Technology, February 2003.  
\*Dept. of Geology, Pomona College, November 2002.  
\*Dept. of Geosciences, California State University, Fullerton, October 1999.  
\*Dept. of Geology, Pomona College, March 1999.  
Dept. of Geosciences, Texas Tech University, February 1999.  
Dept. of Geological and Planetary Sciences, California Institute of Technology, October 1996.

Dept. of Geoscience, University of NV, Las Vegas, September 1994.  
\*Dept. of Earth Sciences, Montana State University, May 1992.  
\*Dept. of Geological Sciences, San Diego State University, April 1992.  
Inland Geological Society, San Bernardino CA, March 1992.  
\*Dept. of Geological Sciences, California State University, Northridge, October 1991.  
Dept. of Geology, Northern Arizona University, February 1991.  
Dept. of Earth Sciences, University of California, Riverside, November 1989.  
\*Dept. of Geological Sciences, California State University, San Bernardino, March 1989.  
Lamont-Doherty Geological Observatory, February 1989.  
\*Dept. of Geology, Tufts University, February 1987.

**Major Service** (the Geological Society of America is referred to as GSA):

Member, Academic & Applied Geoscience Relations Committee, GSA, 2014-2017 term  
(<http://www.geosociety.org/aboutus/committees/>).

College of Natural Sciences CSUSB, Professional Awards Committee Member, 2014-2016 term.  
College of Natural Sciences Representative (1 of 2), CSUSB Graduate Council, 2013-2015 term.  
Coordinator, Master of Science in Earth and Environmental Sciences Program, CSUSB, Fall 2011 to present.  
Past Chair, Division of Geology and Society, GSA, 2011-2012 (<http://www.geosociety.org/divisions/>)  
Chair, Division of Geology and Society, GSA, 2010-2011.  
1<sup>st</sup> Vice Chair, Division of Geology and Society, Geological Society of America, 2009-2010.  
Chair, Review Committee for Five-Year Review of the Dean of the College of Natural Sciences, CSUSB, 2009-2010 AY.  
Member, GSA Ad Hoc Committee to develop logo standards, 2010-2011.  
Chair, Dept. of Geological Sciences Evaluation Committee, 2007-2008, 2008-2009, and 2009-2010 AY.  
Member, Dept. of Art Evaluation Committee, 2008-2009 AY.  
Member, Dept. of Physics Evaluation Committee, 2007-2008 AY.  
Member, Search Committee for Associate Provost for Research, 2007-2008 AY. Dr. J. Thompson was confirmed in the position.  
Member, GSA Ad Hoc Committee to examine need for accreditation for geology undergraduate programs, 2006-2008.  
Member, GSA Ad Hoc Committee to examine role of Divisions in the Society, 2005-2006.  
Member, GSA Ad Hoc Committee to examine role of Sections in the Society, 2004-2005.  
Member, Search Committee for fifth geology faculty position, 2001-2002. Dr. E.B. Melchiorre was hired.  
Secretary/Treasurer, Cordilleran Section of the GSA, 2001-2009 (<http://www.geosociety.org/sections/cord/>).  
Chair, College of Natural Sciences Evaluation Committee (four-member panel for retention, promotion and tenure of faculty), 2001-2002, 2002-2003, and 2006-2007 AY.  
Member, College of Natural Sciences Evaluation Committee CSUSB, 2000-2002 and 2002-2004 terms; 1-year fill-in position 2006-2007.  
Vice-Chair, Executive Committee of the Water Resources Institute Faculty Council CSUSB, 2000-01, 2001-02, and 2002-03 terms.  
Member, Search Committee for geology chair position, 1999-2000. Dr. A.L. Smith was hired.  
Chair, College of Natural Sciences CSUSB Curriculum Committee, 1999-2004.  
Member, College of Natural Sciences CSUSB Curriculum Committee, 1997-2004.  
Coordinator of College of Natural Sciences CSUSB Self-Study 1999-2000.  
Wrote Departmental Five-Year Self-Study for Department, 1995, 2000, 2005.  
Co-wrote proposal for B.S. in Geology, with General Geology Option and Environmental Geology Option, assisted by S.F. McGill, 1999. Plan approved 12/99.  
Member, Water Resources Institute Faculty Council CSUSB, 1998-present. This group founded the WRI.  
Co-wrote proposal for B.A. in Geology degree, with S.F. McGill, 1997. Degree approved 6/97.  
Proposed Minor and Departmental Honors for Geology, 1996-97. Both approved.  
Member, Search Committee for Dean of the School of Natural Sciences CSUSB, 1995-96. No hire.  
Chair, Cordilleran Section Meeting, Geological Society of America, 1994 (*see Scientific Meeting Organized, above*).  
Member, Search Committee for Dean of the School of Natural Sciences CSUSB, 1990-91. Dr. L.A. Fernandez was hired.  
Chair, Search Committee for fourth geology faculty position, 1990-91. Dr. S.F. McGill was hired.

**Additional Service:**

Intellectual Life and Visiting Scholars Committee, CSUSB, 1998-2000.  
Performance Salary Increase Appeals Committees, CSUSB, 1996 and 1997  
Emergency Operations Committee Faculty Volunteer, CSUSB, 1996-2001.  
Faculty Senate CSUSB, 1995-96 AY.  
College of Natural Sciences CSUSB, Elections Officer, 1995-96 AY.  
Departmental Academic Advisor 1991-96, protocol changed, and now we are all assigned advisees.

Sigma Xi CSUSB Chapter Treasurer, 1991-present.  
Geological Society of America Campus Representative, 1990-present.

**Teaching Interests:**

My primary teaching strengths for geology students are basic and advanced structural geology, tectonics, regional geology, and field methods. I teach other courses as needed. I feel strongly that all students, not just geology students, need to understand the integrative nature of most geologic questions. I encourage them to relate specific geologic ideas and techniques to wider contexts, including everyday life, without sacrificing rigor in so doing.

My motivation for general undergraduate education is my conviction that science must be made more accessible to the general public. Geology is an effective avenue through which to pursue that goal, due to its tangibility and integrative nature. In the past several years, this has expanded to include teaching about natural disasters, including preparation and evaluating information that includes uncertainty (such as climate change). Moreover, these ideas are irrepressibly cool, although the puns are terrible.

**Research Interests:**

My current research program is twofold:

1. Crustal extension in the central Basin and Range province, North America: mechanisms of crustal extension, including how normal faults initiate, evolve, change character as they cut upward through the crust, and affect overall crustal structure.
2. Volcanic history and eruptive hazard assessment of selected volcanoes in the Caribbean area, in collaboration with Alan L. Smith.

My general research interests include the timing and distribution of orogenic events, the mechanisms of deformation, from microscopic to regional scales, and synthesis of these studies into regional tectonic models.

**Personal Information:**

Born 6 June 1955 in Las Cruces, NM, married, two children, excellent health. Languages include conversant Spanish and vestigial Norwegian. Pastimes include beer brewing, gardening, hiking, reading, running, skiing, and whitewater boating, all engaged in sporadically as time and water (phase and levels) permit.



## PUBLICATIONS OF JOAN E. FRYXELL

## ARTICLES (\* indicates refereed publication, underline indicates student author):

- \*McGill, S.F., Spinler, J.C., McGill, J.D., Bennett, R.A., Floyd, M.A., **Fryxell, J.E.**, and Funning, G.J., 2015, Kinematic modeling of fault slip rates using new geodetic velocities from a transect across the Pacific-North America plate boundary through the San Bernardino Mountains, California: *Journal of Geophysical Research: Solid Earth*, v. 120, doi:10.1002/2014JB011459.
- \*Smith, A.L., Roobol, J.M., Mattioli, G.S., **Fryxell, J.E.**, Daly, G.E., and Fernández, L.A., 2013, The volcanic geology of the mid-arc island of Dominica, Lesser Antilles - the surface expression of an island arc batholith, *Geological Society of America Special Paper 496*, 249 p.
- \*Brady, R.J., **Fryxell, J.E.**, Wernicke, B.P., 2011, Geologic map of the Iceberg Canyon quadrangle, Clark County, Nevada and Mohave County, Arizona, with text entitled Overview of the stratigraphy and structure of the Iceberg Canyon quadrangle, Clark County, Nevada and Mohave County, Arizona: Nevada Bureau of Mines and Geology Map 166, 1:24,000 scale, 16 p. text.
- \*Duebendorfer, E.M., Faulds, J.E., and **Fryxell, J.E.**, 2010, The South Virgin – White Hills detachment fault, southeastern Nevada and northwestern Arizona: Significance, displacement gradient, and corrugation formation, *in* Umhoefer, P.J., Beard, L.S., and Lamb, M.A., eds., Miocene Tectonics of the Lake Mead Region, Central Basin and Range: Geological Society of America Special Paper 463, p. 275-287, doi: 10.1130/2010.2463(12).
- \***Fryxell, J.E.**, Smith, A.L., and Fernández, L.A., 2008, Geological research with undergraduate students on the island of Dominica, Lesser Antilles – a progress report: *Nova Hedwigia, Beiheft 133*, p. 305-315.
- \***Fryxell, J.E.**, and Duebendorfer, E.M., 2005, Origin and trajectory of the Frenchman Mountain block in southern Nevada through Tertiary time: *Journal of Geology*, v. 113, p. 355-372.
- \*Proffett, J.M., Brady, R.J., Wernicke, B., and **Fryxell, J.**, 2002, Discussion and reply: Kinematic evolution of a large-offset continental normal fault system, South Virgin Mountains, Nevada: *Geological Society of America Bulletin*, v. 114, p. 124–128.
- \*Taylor, W. J., Gilbert, J.J., **Fryxell, J.E.**, Williams, N.D., and Novack, H., accepted in 2001, Discussion on the role of attenuation in the formation of the Railroad Valley structural basin, east-central Nevada: Detachment control of petroleum reservoirs, *American Association of Petroleum Geologists Bulletin*.
- \*Taylor, W.J., Bartley, J.M., Martin, M.W., Geissman, J. Wm., Walker, J.D., Armstrong, P.A., and **Fryxell, J.E.**, 2000, Relation between hinterland and foreland shortening, Sevier Orogeny, central North American Cordillera, *Tectonics*, v. 19, p. 1124-1143.
- \*Brady, R., Wernicke, B., and **Fryxell, J.**, 2000, Kinematic evolution of a large-offset continental normal fault system, South Virgin Mountains, Nevada, *Geological Society of America Bulletin*, v. 112, p. 1375-1397.
- \*Reiners, P.W., Brady, R., Farley, K.A., **Fryxell, J.E.**, Wernicke, B., and Lux, D., 2000, Helium and argon thermochronometry of the Gold Butte block, south Virgin Mountains: *Earth and Planetary Science Letters*, v. 178, no. 3-4, p. 315-326.
- French, D.E., Schalla, R.A., Taylor, W.J., **Fryxell, J.E.**, Hulen, J., Hansen, J.B., and Ransom, K., 1998, Day 2: Ely to Railroad Valley and Return (road log and discussion): *in* French, D.E., and Schalla, R.A., eds., *Hydrocarbon habitat and special geologic problems of the Great Basin: 1998 Field trip Guidebook*, Nevada Petroleum Society, 109 p.
- \*Davis, G.A., Qian, X., Zheng Y., Tong H.-M., Yu H., Wang C., Gehrels, G.E., Shafiquallah, M., and **Fryxell, J.E.**, 1996, Mesozoic deformation and plutonism in the Yunmeng Shan: a metamorphic core complex north of Beijing, China: *in* Yin, A., and Harrison, T.M., eds., *The Tectonic Evolution of Asia*, Cambridge University Press, p. 253-280.
- \*Davis, G.A., Qian, X., Zheng Y., Tong H.-M., Yu H., Wang C., Gehrels, G.E., Shafiquallah, M., and **Fryxell, J.E.**, 1996, The Huairou (Shuiyu) ductile shear zone, Yunmengshan Mtns., Beijing: *in* Deng, N., and Zhou, J., eds., 30th International Geological Congress Field Trip Guide T209, 25 p.
- \***Fryxell, J.E.**, Taylor, W.J., Schmitt, J.G., French, D.E., Camilleri, P.A., Hulen, J., and Langrock, H., 1996, Field trip guide to the Cenozoic structure and stratigraphy of the White Pine and Grant Ranges, Nevada: *in* Taylor, W.J., and Langrock, H., eds., *Cenozoic structure and stratigraphy of central Nevada: 1996 Field Conference Volume*, Nevada Petroleum Society, Inc., Reno, p. 75-84.
- \*Taylor, W.J., Bartley, J.M., **Fryxell, J.E.**, Schmitt, J.G., and Vandervoort, D.S., 1993, Tectonic style and regional relations

of the central Nevada thrust belt: *in* Lahren, M.M., Trexler, J.H., Jr., and Spinosa, C., eds., *Crustal Evolution of the Great Basin and Sierra Nevada: Cordilleran / Rocky Mountain Section*, Geological Society of America Guidebook, Department of Geological Sciences, University of Nevada, Reno, p. 57-96.

- \***Fryxell, J.E., Salton, G.G.,** Selverstone, J., and Wernicke, B., 1992, Gold Butte crustal section, South Virgin Mountains, Nevada: *Tectonics*, v. 11, no. 6, p. 1099-1120.
- Davis, G.A., Qian, X., Zheng Y., Wang C., Tong H.-M., Yu H., Gehrels, G.E., Shafiquallah, M., and **Fryxell, J.E.**, 1991, *Geologic Introduction and Field Guide to the Yunmeng Shan, northern Beijing Municipality: a Chinese Metamorphic Core Complex (in Chinese)*, Guidebook, Conference on Extensional Tectonics, Department of Geology, Peking University, Beijing 100871, P.R.C.
- \*Fitzgerald, P.G., **Fryxell, J.E.**, and Wernicke, B.P., 1991, Apatite fission track constraints on the extensional evolution of the Gold Butte crustal section, South Virgin Mountains, Nevada: *Geology*, v. 19, no. 10, p. 1013-1016.
- Fryxell, J.E.**, 1991, Outline of structural geology in the Red Rock area, Spring Mountains, Nevada (invited paper): *in* Reynolds, J., ed., *Crossing the Borders: Quaternary Studies in Eastern California and Southwestern Nevada*, San Bernardino County Museum Association Special Publication, Mojave Desert Quaternary Research Center 1991 Field Trip Guidebook, p. 127-132.
- \***Fryxell, J.E.**, 1991, Tertiary tectonic denudation of an igneous and metamorphic complex, west-central Grant Range, Nye County, Nevada: *Geology and Ore Deposits of the Great Basin Symposium* sponsored by the Geological Society of Nevada, p. 87-92.
- \*Bryant, B.H., Naeser, C.W., and **Fryxell, J.E.**, 1991, Implications of low- temperature history across the Colorado Plateau - Basin and Range boundary, west-central Arizona, CACTIS Special Section, *Journal of Geophysical Research*, v. 96, no. B7, p. 12,375-12,388.
- \*Richard, S.M., **Fryxell, J.E.**, Reynolds, S.J., and Sutter, J.F., 1990, Thermal history of the Buckskin and Harquahala Mountains; implications for denudation of footwall rocks in a major detachment fault system, west-central Arizona: CACTIS Special Section, *Journal of Geophysical Research*, v. 95, no. B12, p. 19,973-19,987.
- Bartley, J.M., Axen, G.J., Taylor, W.J., and **Fryxell, J.E.**, 1988, Tertiary tectonics of a transect through eastern Nevada near 38° N. Latitude: *in* Weide, D.L., and Faber, M.L., eds., *This Extended Land*, Geological Journeys in the Southern Basin and Range, Geological Society of America, Cordilleran Section, Field Trip Guidebook, p. 1-20.
- \***Fryxell, J.E.**, 1988, Geologic map and descriptions of stratigraphy and structure of the west-central Grant Range, Nye County, Nevada: Geological Society of America Map and Chart Series MCH064, 16 p., 2 plates.
- Stimac, J.A., **Fryxell, J.E.**, Reynolds, S.J., Richard, S.M., Grubensky, M.J., and Scott, E.A., 1987, Geologic Map of the Wickenburg, southern Buckhorn, and northwestern Hieroglyphic Mountains, central Arizona: Arizona Bureau of Geology Open-File Report 87-9, 13 p., 2 plates.
- Fryxell, J.E.**, 1984, Structural development of the west-central Grant Range, Nye County, Nevada [Ph.D. thesis]: The University of North Carolina at Chapel Hill, 139 p., 2 plates.
- \***Fryxell, J.E.**, 1983, A revision of *Abutilon* section *Oligocarpae* (Malvaceae), including a new species from Mexico: *Madroño*, v. 30, p. 84-92.
- Fryxell, J.E.**, 1980, A taxonomic study of *Abutilon* section *Oligocarpae* (Malvaceae) [M.A. thesis]: The University of Texas at Austin, 117 p.

#### IN REVIEW:

Smith, A.L., Wright, J.V., Roobol, M.J., Mattioli, G.S., and **Fryxell, J.E.**, Ash hurricane hazard from Mt. Pelée, Martinique, Lesser Antilles, submitted to the Geological Society of America Bulletin.

#### IN PREPARATION:

**Fryxell, J.E.**, and Ross, T.M., Geologic Map of the Bullwhacker Springs 7.5' Quadrangle, Nye County, Nevada: to be submitted to the Nevada Bureau of Mines and Geology.

**Fryxell, J.E.**, and Ross, T.M., Geologic Map of the Calloway Well 7.5' Quadrangle, Nye County, Nevada: to be submitted to the Nevada Bureau of Mines and Geology.

**Fryxell, J.E.**, and Ross, T.M., Geologic Map of the Currant 7.5' Quadrangle, Nye County, Nevada: to be submitted to the Nevada Bureau of Mines and Geology.

**Fryxell, J.E.**, Geologic Map of the Troy Canyon 7.5' Quadrangle, Nye County, Nevada: to be submitted to the Nevada Bureau of Mines and Geology.

Smith, A.L., Roobol, M.J., Mattioli, G.S., and **Fryxell, J.E.**, Providencia Island: A Miocene stratovolcano on the Lower Nicaraguan Rise, Western Caribbean – a geological enigma.

Smith, A.L., Roobol, M.J., Mattioli, G.S., **Fryxell, J.E.**, Stratigraphy, grain size analysis and geochemistry of the historic eruptions of Soufriere St. Vincent.

**ABSTRACTS (\*indicates speaker, underline indicates student author):**

\*Snowden, Ali N., Smith, A.L., and **Fryxell, J.E.**, 2014, The characterization and analysis of Quaternary basalts from Nye Co., NV, Geological Society of America Abstracts with Programs, v. 46, no. 5, p. 36.

Roobol, M.J., \*Smith, A.L., and **Fryxell, J.E.**, 2013, Seismo-thermal zones and a reassessment of The volcanic hazard on Dominica, Lesser Antilles: Geological Society of America Abstracts with Programs, v. 45, no. 2, p. 21.

\*Smith, A.L., Roobol, M.J., Mattioli, G., and **Fryxell, J.E.**, 2013, Volcanic geology of Dominica, Lesser Antilles: the surface expression of an island arc batholith: Geological Society of America Abstracts with Programs, v. 45, no. 2, p. TBA.

\*Smith, A.L., Mattioli, G.S., Storni, N., **Fryxell, J.E.**, Salazar, J.S., Hulett, A., and Velasquez, C., 2010, Comparison of the 1902 eruption to the other historic eruptions of Soufriere, St. Vincent, Lesser Antilles: Geological Society of America Abstracts with Programs, v. 42, no. 4, p. 101.

\*Harrell, S.R., Smith, A.L., Melchiorre, E.B., **Fryxell, J.E.**, 2008, Geochemistry of geothermal springs in northern Dominica, Lesser Antilles: Eos, Transactions, American Geophysical Union, v. 89, no. 53 Suppl., Abstract V11A-2005.

\*Smith, A.L., Daly, G., Killingsworth, N., Deuerling, K., Schneider, S., **Fryxell, J.E.**, 2008, Stratigraphic, granulometric and geochemical studies of a major plinian eruption on Dominica, Lesser Antilles: Eos, Transactions, American Geophysical Union, v. 89, no. 53, Suppl., Abstract V11C-2049.

\*Daly, G.E., Smith, A.L., Rheubottom, A.N., **Fryxell, J.E.**, 2008, The Morne Aux Diabes Volcano, Dominica, Lesser Antilles, a stratigraphic and petrologic study: Eos, Transactions, American Geophysical Union, v. 89, no. 53, Suppl., Abstract V41D-2115.

\*Daly, G.E., Smith, A.L., Roobol, M.J., **Fryxell, J.E.**, 2008, Grande Soufriere Hills Volcano, Dominica, Lesser Antilles: Annual meeting of Southern California Academy of Sciences, Bulletin - Southern California Academy of Sciences, v. 107, no. 2, p. 120.

\*Harrell, S., Smith, A.L., Melchiorre, E., **Fryxell, J.E.**, 2008, A study of geothermal springs in northern Dominica: Annual meeting of Southern California Academy of Sciences Bulletin - Southern California Academy of Sciences, v. 107, no. 2, p. 120-121.

\*Smith, A.L., Roobol, M.J., **Fryxell, J.E.**, Fernandez, L., 2008, Geological evolution of Dominica, Lesser Antilles: Annual meeting of Southern California Academy of Sciences, Bulletin - Southern California Academy of Sciences, v. 107, no. 2, p. 121.

\*Garcia, R.V., Smith, A.L., **Fryxell, J.E.**, Daly, G.E., Deuerling, K.M., 2008, Origin of a volcanic megabreccia on the eastern coast of the island of Dominica: Abstracts with Programs - Geological Society of America, v. 40, no. 1, p. 67.

Deuerling, K.M., Smith, A.L., **Fryxell, J.E.**, Daly, G.E., Garcia, R., 2007, Mapping sea cliffs on Dominica using photo mosaics: Abstracts with Programs - Geological Society of America, v. 39, no. 6, p. 391.

\*Herlihy, R., **Fryxell, J.E.**, and Smith, A.L., 2007, Physical and chemical characteristics of volcanic hot springs at Wotten Waven, Dominica, Lesser Antilles: Bulletin - Southern California Academy of Sciences, v. 106, no. 2, p. 107-108.

\*Tinnin, B., Smith, A.L., **Fryxell, J.E.**, and Daly, G., 2006, The Layou Tuff, Dominica; an example of an ignimbrite showing extensive vapor-phase crystallization: Eos, Transactions, American Geophysical Union, v. 87, no. Fall Meeting Suppl., Abstract V53C-1770.

\*Smith, A.L., Roobol, M.J., Mattioli, G.S., and **Fryxell, J.E.**, 2006, Distribution, stratigraphy and grain size characteristics of pyroclastic sequences from the Lesser Antilles: EGU Scientific Program, EGU06-A-09716, p. 351.

\*Fitzgerald, P.G., Duebendorfer, E.M., O'Sullivan, P.B., Faulds, J.E., and **Fryxell, J.E.**, 2006, The South Virgin – White Hills detachment fault system of SE Nevada and NW Arizona: the application of apatite fission track thermochronology to constraining displacement gradient accommodation along a major detachment fault: Goldschmidt Conference abstract.

- \*Herlihy, R., Smith A.L., Rheubottom, A., Kirkley, J., Melchiorre, E., **Fryxell, J.E.**, and Roobol, M.J., 2005, Geology and geochemistry of volcanic hot springs on the island of Dominica, West Indies: EOS, Transactions AGU, v. 86 (52), V43B-1588.
- \*Goldstein, A., Siddoway, C., **Fryxell, J.**, Malone, D., Markley, M., Hannula, K., Weil, A., Sak, P., Yule, D., and Gibson, D., 2004, Integrating classroom and lab projects with fieldwork and field trips: results of a TSG working group: Geological Society of America Abstracts, v. 36, no. 5, p. 438.
- \*Bailón, K., **Fryxell, J.E.**, Smith, A.L., McGill, S.F., Leatham, W.B., and Brunkhorst, B.J., 2003, Strategies for Enhancing Diversity in the Geosciences: Geological Society of America Abstracts, v. 35, no. 4, p. 83.
- Fitzgerald, P.G., O'Sullivan, P.B., Duebendorfer, E.M., Faulds, J.E., and **Fryxell, J.E.**, 2003, Thermochronologic constraints on extension via detachment faulting in the White Hills of NW Arizona and Gold Butte block of SE Nevada: Geological Society Of America Abstracts with Programs, v. 35, no. 6, p. 348.
- Fryxell, J.E.**, Hams, J., Barley, M., Hobart, K., Ramirez, J., McGill, S., Lyzenga G., 2003, Involving undergraduates and K-14 teachers in research: measuring and modeling crustal deformation in southern California: EOS: Transactions of the American Geophysical Union, v. 84, no. 46, p. F408.
- \*Smith, A.L., McGill, S.F., **Fryxell, J.E.**, Leatham, W.B., Melchiorre, E., and Brunkhorst, B., 2003, Recruiting and retaining geology majors at CSUSB: Successes and Barriers: EOS: Transactions of the American Geophysical Union, v. 84, no. 46, p. F413.
- \*McGill, S., Smith, A., **Fryxell, J.E.**, Leatham, W., and Brunkhorst, B.J., 2002, Earth Science Pipeline: Enhancing Diversity in the Geosciences: Eos Transactions of the American Geophysical Union, v. 83, no. 47, Abstract ED71B-0057.
- \*Brady, R.J., Wernicke, B.P., **Fryxell, J.E.**, and Lux, D.R., 1998, Kinematic evolution of large-offset continental normal fault systems: Geological Society of America Abstracts with Programs, v. 30, no. 7, p. A-23.
- \*Brady, R.J., Wernicke, B.P., **Fryxell, J.E.**, and Lux, D.R., 1996, Large magnitude Miocene extension in the Lake Mead Region: Geological Society of America Abstracts with Programs, v. 28, no. 7, p. A-449.
- \*Taylor, W.J., Bartley, J.M., Martin, M.W., Geissman J.W., Walker, J.D., Armstrong, P.A., and **Fryxell, J.E.**, 1996, Mesozoic thrusting in central Nevada: ramifications of the Sevier Orogeny: Geological Society of America Abstracts with Programs, v. 28, no. 5, p. 116.
- \*Horton, B.K., Schmitt, J.G., **Fryxell, J.E.**, and Brown, C.E., 1994, Topographic inversion of a Miocene extensional basin by footwall uplift, Railroad Valley area, east-central Nevada: Geological Society of America Abstracts with Programs, v. 26, no. 7, p. A-249.
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- \***Fryxell, J.E.**, and Duebendorfer, E.M., 1990, Frenchman Mountain-Gold Butte reconstruction: Geological Society of America Abstracts with Programs, v. 22, no. 7, p. A226.
- \*Richard, S.M., **Fryxell, J.E.**, Reynolds, S.J., and Grubensky, M.J., 1988, SE -termination of the Buckskin-Bullard detachment fault, west-central Arizona; one versus many normal faults: Geological Society of America Abstracts with Programs, v. 20, no. 7, p. A382.
- \***Fryxell, J.E.**, 1988, Tertiary tectonic denudation of an igneous and metamorphic complex, west-central Grant Range, Nevada (invited talk): Geological Society of America Abstracts with Programs, v. 20, p. 162.
- \***Fryxell, J.E.**, Richard, S.M., Sutter, J.F., and Lucchitta, I., 1987, Contrasting  $^{40}\text{Ar}/^{39}\text{Ar}$  thermochronology of minerals from lower plate rocks of the Buckskin-Bullard-Eagle Eye detachment fault system, west-central Arizona (invited talk): Geological Society of America Abstracts with Programs, v. 19, p. 670.
- \***Fryxell, J.E.**, Stimac, J.A., and Reynolds, S.J., 1987, Superimposed domino-style normal faults in a Tertiary bimodal volcanic complex, Wickenburg Mountains and vicinity, central Arizona: Geological Society of America Abstracts with Programs, v. 19, p. 670.

- \*Bartley, J.M., **Fryxell, J.E.**, Murray, M.E., and Wright, S.D., 1984, Patterns of Tertiary extension in the Great Basin exemplified in the Grant/Quinn Canyon Range, Nevada: Geological Society of America Abstracts with Programs, v. 19, p. 438.
- \***Fryxell, J.E.**, 1984, Structural geology of the west-central Grant Range, Nye County, Nevada: Geological Society of America Abstracts with Programs, v. 16, p. 514.
- \***Fryxell, J.E.**, 1979, A systematic study of a related species group of abutilons (abstract): Botanical Society of America Miscellaneous Series Publication no. 157, p. 55.